Fundamentals of English Syntax
(Version 3)

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This is a brief introduction to syntax, the study of the structure of sentences. It introduces some basic concepts, aiming to give readers an idea of syntactic phenomena and argumentation. The text adopts a theoretical perspective called 'Government and Binding Theory' or 'Principles and Parameters Theory', familiarity with which is generally presupposed in original syntactic research, although many of the ideas are found in most other theories. To simplify the exposition, the text sometimes adopts some fairly old-fashioned analyses of certain phenomena. Linguistics, like all other sciences, is constantly making new discoveries and many issues in linguistics are subject to debate. Doing justice to all the important recent discoveries and to all the approaches which have been suggested for the phenomena we discuss is impossible here. Section 4 lists some book-length introductions to syntax which fill some of the gaps left open by this short introduction. If you have suggestions for improving the manuscript, feel free to send them to andrew.mcintyre@unine.ch

1. Introductory Concepts

1.1. Syntactic categories

It is assumed that you have some familiarity with what in traditional grammar were called the *parts of speech*, i.e. notions like those in (1). Such notions are now covered by the term **categories** or **syntactic categories**.[1]

(1)

	Category	Abbreviation	Example
a.	noun	N	John, London, computer, city, stupidity, event
b.	verb	V	hear, think, kill, shorten, eavesdrop, exist
c.	adjective	A	good, obscene, demented, lovely, schoolmasterly
d.	preposition	P	by, in, with, from, to, at, inside, despite
e.	adverb	Adv	slowly, often, now, mostly
f.	determiner	D (or Det)	a, the, this, those[2]

It is worthwhile learning the abbreviations for the categories, as they are used in other works.

Let us briefly examine some of the criteria which are used in determining the category a word belongs to. We will not try to give a full list of completely failsafe criteria here; we will simply indicate the types of criteria which are considered more reliable by syntacticians. One less reliable type of criterion for categories which you may already have encountered is semantic, i.e. based on meaning. Thus, you may have been told in school that a noun denotes a person, place or thing, that a verb denotes an activity or state and that an adjective denotes a property. Unfortunately, such semantic generalisations are tendencies, not absolute rules. Thus, there are nouns which denote activities (*the hammering*), events (*recital*), states (*drunkenness*) and properties (*silliness*).

More reliable evidence for determining the category of a word come from morphological and distributional criteria. Examples of morphological criteria would be that nouns, but no other category, can take a plural affix (*tables, intervals, oxen*) and that most verbs change their morphological form according to the requirements of tense and agreement (*I sing, she sings, I sang; I talk, she talks, I talked*). If you can add *-ly* to a word to form an adverb, you know that word is an adjective (*slow>slowly*). Examples of distributional criteria for various categories are given below. In each case, assume that the gap in the sentence is to be filled by a single word.

(2) a. They have no $[]_N$
b. the $[]_A$ $[]_N$
c. She did so $[]_{Adv}$
d. very $[]_{A/Adv}$
e. They can $[]_V$

1.2. Constituent structure

Identifying the syntactic category of each word in a sentence is only the beginning of syntactic analysis. Consider the simple sentence below:

(3) That man likes that woman

In analysing sentence (3), we might propose the following rule:

(4) S $\rightarrow$ D+N+V+D+N

(Translation: A sentence can consist of the sequence determiner + noun + verb + determiner + noun.)

It is easy to show that a rule like (4) is worse than useless. Suppose we want to give more information about the man spoken of in (3) and/or to say that he likes someone or something other than *that woman*. We could then replace *that man* and *that women* with different, more complex expressions. A small selection of the infinite number of possible replacements is given in (5) and (6).

(5) a. that old man
b. that old man with the bottle of beer
c. that extremely old and decrepit man with a nearly empty bottle of cheap beer
d. that man over there near the window
e. that extremely old and decrepit man over there with a nearly empty bottle of cheap beer

(6) a. heavy metal music from the Seventies
b. people with a flair for the unusual
c. paintings by certain fairly weird and decadent artists
d. the lady over there beside the fireplace
e. his collection of photographs of Victorian guesthouses in Tasmania

The possibility of replacing *that man* in (3) with any expression in (5) and *that woman* in (3) with any expression in (6) gives us twenty-five sentences. If we wish to be able to describe what happens using rules like that in (4), we would require twenty-five different rules. Once we start adding further material to the sentence (say, *very much* just before *likes* and/or *obviously* at the beginning of the sentence), the number of rules of the type in (4) begins to multiply. We would rapidly see that the number of rules of the type in (4) required to describe possible English sentences would be infinite. There is no way a child could learn such rules. Also, such rules are purely *descriptive*, by which is meant that they just state observed empirical facts without giving any explanation for them.

A way out of this impasse emerges when we realise that what has hitherto been lacking in our analysis of sentences has been the idea that words can combine with other words to form larger groups of words which belong together. In technical parlance, such groups of words are called **constituents**. Constituents combine with other constituents to form yet larger constituents, until we eventually have the largest type of constituent studied in syntax, the sentence. The expressions listed in (5) and (6) were examples of constituents called 'noun phrases' (NPs), expressions which include a noun and some additional material giving additional information about it. NPs can typically be replaced by pronouns: each NP in (5)

[1] You will need to remember any terms written in bold type in this text.

[2] Determiners (some of which are known as 'articles' in some grammar books) are defined more precisely in section 2.1.

and (6) can be replaced by *he, her, it, them* etc. as appropriate. We will give a better definition of NPs and other types of constituents later. Our purpose now is merely to show how establishing constituent structure greatly helps us in analysing sentences. Consider (7), which will be rejected later and should *not* be memorised, but is far better than (4):

(7) S → NP V NP (Translation: A sentence can consist of the sequence NP+V+NP.)

Even if we are only interested in describing the twenty-five possible sentences consisting of a NP from (5), a verb and a NP from (6), the benefits of recognising constituent structure should now be apparent. If we use rules of the type in (4), we would require twenty-five rules to describe these sentences, whereas (7) describes all twenty-five sentences with just one rule. It should be emphasised again that the rule in (7) is being used only as a way of showing the need for constituent structure. We will later show how this rule can be improved upon.

As another, more interesting argument for the need for constituent structure, consider the following sentences containing the possessive *s* morpheme:

(8) a. [That lady]'s husband left.
b. [That lady over there]'s husband left. (=the husband of that lady over there...)
c. [That lady near the door]'s husband left. (=the husband of that lady near the door...)
d. [That lady you talked to]'s husband left. (=the husband of that lady you talked to...)
e. [That lady you saw]'s husband left. (=the husband of that lady you saw...)

Notice that we cannot describe the behaviour of the possessive *'s* in terms of the category of the words it attaches to: *'s* can appear immediately to the right of a word of any category. Notice also that *'s* does not necessarily say that the word it appears to the right of is the possessor. (For instance, the door in (8)(c) probably does not have a husband.) Rather, the correct generalisation is that possessive *'s* attaches to a particular type of constituent (marked by square brackets in (8)), namely a NP. Without knowing what a NP is, there is simply no way to describe the behaviour of possessive *'s*. Thus, we cannot describe sentence structure without recourse to constituents.

1.3. Tests for constituents

In all sciences, linguistics included, one should be able to assess the truth or falsehood of a claim by means of objective tests. We now introduce some tests for establishing whether a **string** (i.e. group of words) is a constituent or not.

a) Proform test. Proforms are expressions like *she, them, somewhere, do so, there* which have the function of representing a constituent which has already been mentioned, so that one need not go to the effort of pronouncing/writing the constituent twice. The best-known type of proform is a so-called *pronoun*, which replaces a NP, e.g. *she/him/they*. If you can replace a string with a proform, the string is a constituent. (9) illustrates the use of the proform test in finding constituents in (9)(a).

(9) a. *The lady running the group handed in her resignation on Friday at noon.*
b. *She handed in her resignation on Friday at noon.* [Thus, *The lady running the group* is a constituent]
c. *The lady running it handed in her resignation on Friday at noon.* [Thus, *the group* is a constituent]
d. *The lady running the group did so on Friday at noon.* [Thus, *handed in her resignation* is a constituent]
e. *The lady running the group handed in her resignation then.* [Thus, *on Friday at noon* is a constituent]

b) Question test. If you can convert a sentence into a question using a *wh*-expression (e.g. *where/how/when/why/what/who(m)*, and phrases like *with whom?, at what time?, in whose house?*), the string that the *wh*-expression replaces is a constituent. (*Wh*-expressions are

proforms.) The answer to the question is also a constituent. (10) illustrates this with reference to (9)(a). In each case, A and B refer to different speakers. B's answer is a constituent.

(10) a. A: What did the lady running the group hand in on Friday at noon?
B: *Her resignation.*
b. A: *Who handed in her resignation on Friday at noon?*
B: *The lady running the group*
c. A: *When did the lady running the group hand in her resignation?*
B: *On Friday at noon*

c) Movement test. If a string can be moved to some other position in the sentence, you know it is very likely to be a constituent. The following examples apply this test to identify constituents in the respective (a) sentences.

(11) a. *Egbert was reading a thick book about formal logic on the balcony on Sunday.*
b. *On Sunday, Egbert was reading a thick book about formal logic on the balcony.*
c. *On the balcony, Egbert was reading a thick book about formal logic on Sunday.*
d. *Egbert was reading on the balcony on Sunday a thick book about formal logic.*

(12) a. *Rover ran out of the house.* b. *Out of the house Rover ran.*

(13) a. *Ann is not a fan of mindless techno music.*
b. *A fan of mindless techno music, Ann is not.*

(14) a. *Gertrude wasn't interested in art.*
b. *Interested in art, Gertrude wasn't.*

(15) a. *Hortense didn't win the race.*
b. *Win the race, Hortense didn't.*

d) Coordination test. Coordination is the operation of joining two words or phrases together using conjunctions, e.g. *and* and *or*. Strings joined by conjunctions must each be a constituent. (They must be constituents of the same type, a fact which will be important to us later.) Suppose you are trying to test whether the underlined strings in (16)(a) and (17)(a) are constituents. Try to find another expression which you can coordinate with the underlined string. You can be confident that the string is a constituent if you can place the other expression with which it is coordinated either before or after it without any difference in meaning, as in (16)(b,c) and (17)(b,c).

(16) a. I went to the post office to post a letter.
b. I went to the post office to post a letter and did the shopping.
c. I did the shopping and went to the post office to post a letter.

(17) a. She spoke to a small number of the students interested in the subject.
b. She spoke to a small number of the students interested in the subject and the staff.
c. She spoke to the staff and a small number of the students interested in the subject.

e) Cleft test. (18)(a) can be changed into the sentences in (b-d). These are instances of **cleft sentences** (*Spaltsätze*). (*Cleft* comes from an old verb *cleave* meaning 'divide'; the idea is that cleft sentences are divided in two.) The general form of cleft sentences is (18)(e). The purpose of cleft sentences is to focus the material between *be* and *that*, underlined in (18)(b-d), presenting it as the new information. This material is always a constituent.

(18) a. *The guests from overseas visited the best parts of the city on Monday.*
b. *It was on Monday that the guests from overseas visited the best parts of the city.*
c. *It was the best parts of the city that the guests from overseas visited on Monday.*
d. *It was the guests from overseas that visited the best parts of the city on Monday.*
e. *It {was/is}* X *that ...* [where X is some constituent]

f) Pseudocleft test. Sentence (18)(a) can also be changed into sentences like those in (19) and (20). These are 'pseudocleft sentences', which we can describe roughly as a reformulation of a sentence such that a form of *be* divides the sentence into two parts, of which one is a focussed constituent from the original sentence (underlined in the examples below) and the

other begins with *what*. The order of the two parts of the sentence is often flexible. The important point about pseudoclefts for our purposes is that the string appearing in the part of the sentence not containing *what*, i.e. the underlined string in the examples below, must always be a constituent.

(19) a. *What the guests from overseas visited on Monday was the best parts of the city.*
b. *The best parts of the city were what the guests from overseas visited on Monday.*

(20) a. *What the guests from overseas did on Monday was visit the best parts of the city.*
b. *Visit the best parts of the city was what the guests from overseas did on Monday.*

(21) a. *I don't need losers like him who couldn't think their way out of a paper bag.*
b. *What I don't need are losers like him who couldn't think their way out of a paper bag.*
c. *Losers like him who couldn't think their way out of a paper bag are what I don't need.*

(22) a. *She seemed to be totally fed up with the inefficiency of the system.*
b. *What she seemed to be was totally fed up with the inefficiency of the system.*
c. *Totally fed up with the inefficiency of the system was what she seemed to be.*

g) *Though* test. In (23) we see that it is sometimes possible to transform sentences beginning with *although* into structures where a focussed part of the sentence precedes *though*, followed by the rest of the sentence. This fact can be used as another constituent test because whatever stands in front of *though* must be a constituent.

(23) a. *Although she is a defender of free will... = A defender of free will* though she is...
b. *Although they are annoyed at their son... = Annoyed at their son though they are...*
c. *Though he crossed the road with care... = Cross the road with care though he did...*

There are other constituent tests, but the ones given above will suffice for our purposes. A couple of warnings are appropriate. Firstly, to be completely certain that the results are correct, it is wise to use more than one test when trying to work out whether a string is a constituent. Secondly, the above descriptions of the tests were all formulated in terms similar to 'If you can do such-and-such with a string, then it is a constituent', rather than 'If you cannot do such-and-such with a string, then it is not a constituent'. This was because constituent tests will sometimes yield unacceptable results not because the string being tested is not a constituent, but because of some other factor. Consider the underlined string in *she played the piece very quickly and very skillfully*. We know it is a constituent because it is coordinated with *very skillfully*. However, we cannot form a question from this sentence: **How did she play the piece and very skillfully*? [3] The unacceptability of this sentence does not show that *very quickly* is not a constituent, but is explained by a constraint (not discussed here) which says that one cannot ask a question of a coordinated element.

A. Apply two of the above tests to show that the underlined phrases are constituents.
a. *A lady in a blue dress sang the national anthem in the stadium some time after noon.*
b. *Someone saw a suspicious-looking man with a briefcase walking around in the foyer on Monday half an hour before the building blew up.*

1.4. Phrasal categories and the notion of 'head'

Just like words, constituents larger than words have a category. We distinguish **word-level categories** (categories of words, i.e. N, V, A, P, etc.) and **phrasal categories** or simply **phrases** (constituents larger than a word). Examples of the latter which were already mentioned are NP and S. There are a number of other types of phrases. The first thing to note is that each word-level category has a corresponding phrasal category, which contains the

[3] An asterisk (*) indicates that the expression after it is not acceptable to native speakers.

word-level category itself and any material which -in a manner to be made more precise shortly- adds additional information to it or is dependent on it. In (24)-(28) are examples of the phrasal categories we will be concentrating on in this text. Do not worry if you do not yet understand why the expressions in (24)-(28) are seen as instances of the respective categories. This set of problems is taken up in the next section.

(24) Noun Phrase (NP)
a. the woman; a (big) tree; (this) coffee, (our) existence
b. a (renowned) expert (on indigenous Australian music) (from Brisbane)
c. the (classical) dancer (of exceptional talent) (who got run over by a bus)
d. the (most important) representatives (of workers' interests) (at the conference)
e. a documentary (by a French journalist) (about Spain)

(25) Verb Phrase (VP)
a. (suddenly) die (of cancer) (at a young age)
b. (blindly) rely on the advice of a counsellor
c. (often) called him a maladjusted sociopath
d. give Basil the book
e. read (a book)

(26) Adjective Phrase (AP)
a. (very) angry (at the rest of the human race)
b. (completely and utterly) disappointed (at the ineptitude of her secretary)
c. interested (in the history of Postmodernist theatre) (to some extent)
d. dull (to the extreme) e. (soul-destroyingly) boring f. devoid of content

(27) Prepositional Phrase (PP)
a. (right) near the fireplace b. towards the entrance to the building
c. (wholly) inside (the enclosure) d. out (of the house)
e. despite the failed attempt of the paramilitary at blowing up the Institute of Syntax

(28) Adverb Phrase (AdvP)
a. (very) slowly
b. (extremely) well
c. (completely) independently of the approval of his superiors

The underlined elements in the phrases above are the elements around which the respective phrases are built. They are said to be the **heads** of the respective phrases. (Alternative ways of saying this are, taking NP as an example, that N **heads** or **projects** NP, or that NP is a **projection** of N or is **headed** by N.) The head of a phrase is the element which determines the properties of the whole phrase. All elements in a phrase other than the head are dependent on the head, in that they either give additional information about the head, or are included in the phrase because the head requires or allows this. The head is obligatory, in the sense that if you leave out the head of a phrase, the rest of the phrase must be left out too. You can confirm this by forming a sentence containing any of the phrases in (24)-(28), but omitting the head of that phrase. The resulting sentence will almost certainly be unacceptable.

Note that the notion of 'head' also applies to word structure. Inside words, the head is the element which determines the properties of the whole word. For instance, we say that *eat* is the head of *overeat* because the whole word has the same category as *eat* (i.e. it is a verb) and is inflected in the same way as *eat* (cf. *ate/eaten* and *overate/overeaten*). A difference between morphological and syntactic heads is that, in English, the head of a word is usually the right-hand element, while the head of a phrase is often not the right-hand element.

1.5. The main problems in identifying and motivating the phrasal categories

Readers may be asking why some of the expressions in (24)-(28) were seen as being headed

by the underlined elements. In some cases there may be doubt about whether the expressions are even constituents. We address the most challenging cases now, applying the constituent tests introduced in section 1.3 and making some additional observations.

1.5.1 NP

NPs are among the easiest phrase-level categories to understand. The following points hold of each example in (24), and of all other NPs:

a. The whole phrase refers to the entity/concept named by the noun.
b. All the material in the phrase gives information about the noun.
c. The whole phrase can be replaced by a pronoun (*she/her/he/him/it/they/them*).

Points *a* and *b* are two arguments for the claim that the noun determines the nature of the whole phrase, and is thus its head.[4] Point *c* gives an important grammatical characteristic of NPs in general, which helps us to identify them. It is important to realise that pronouns stand for full NPs, not just nouns. If pronouns stood for nouns, then replacing *the big tree* with a pronoun would yield the unacceptable expression **the big it*.

It is easy to identify simple expressions like (24)(a) as NPs. Cases which may confuse beginners are structures like (24)(b-d) where the NP includes material after the noun. As an example of this, consider (24)(e), repeated in (29) as part of a full sentence. We can establish that the underlined string in (29) is a constituent by applying the cleft test in (30), the movement test in (31) and the proform test in (32). Since the proform is a pronoun, we can assume, as per point *c* above, that the underlined constituent in (29) is a NP. It should also be clear that the constituent conforms to points *a* and *b* above.

(29) I saw a documentary by a French journalist about Spain last night.
(30) a. It was a documentary by a French journalist about Spain that I saw last night.
b. *It was a documentary that I saw by a French journalist about Spain last night.
(31) a. I saw last night a documentary by a French journalist about Spain.
b. *I saw by a French journalist about Spain last night a documentary
(32) a. I saw it last night.
b. *I saw it by a French journalist about Spain last night

Students may have trouble with these sentences because the string *a documentary* can be a complete NP in some contexts. It is important to note that, while it is a NP in a sentence like e.g. *I saw a documentary last night*, the tests above show that *a documentary* is not a complete NP in the context of (29).

1.5.2 VP

Consider now the strings of words in (25), referred to as VPs. These strings all contain a verb and that, if one adds an appropriate NP (called a **subject**[5]) in front of the string, a full sentence is formed. Thus, adding the NP *her mother* to (25)(e) gives us the sentence (33). Readers may wonder why the strings in (25) are regarded as constituents. To make the question more concrete, consider (33). Why is it better to assume that (33) has the structure indicated in (34)(a) or (35)(a) rather than that seen in (34)(b) or (35)(b).[6] If the VP constituent

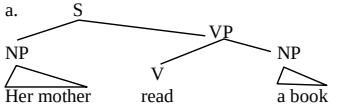
4 Note that *b* does not alone identify NPs. For instance, one could say that everything in the sentence *John loves Ann* tells us something about John, but sentences are very different from NPs, for instance because they denote situations and never denote entities.

5 **Subject** is a term for the NP which is outside the VP and can determine the inflection of the verb (*his mother writes books* vs. *I write books*). A subject differs for instance from an **object**, i.e. an NP after a verb.

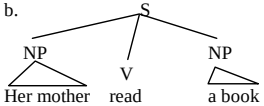
6 The notation in (34) is called **(labelled) bracketing**. Graphs like (35) are known as **phrase markers**, **tree diagrams** or **trees**. Trees and bracketing express the same thing. The triangles in

exists at all, why does it not include the subject? Why is *her mother read* not a VP?

(33) Her mother read a book.
(34) a. [$_S$[$_{NP}$Her mother] [$_{VP}$ [$_V$ read] [$_{NP}$ a book]] b. [$_S$ [$_{NP}$ Her mother] [$_V$ read] [$_{NP}$ a book]]
(35) a.



b.



(34)(b)/(35)(b) suggests that the string *read a book* is not a constituent, but two independent constituents. On the other hand, (34)(a)/(35)(a) suggests that this string is a constituent. If we apply the constituent tests introduced in section 1.3, we find clear evidence for the existence of the constituent presupposed by (34)(a)/(35)(a).

(36) a. Her mother READ A BOOK. She did so last year. [Proform test]
b. A: What did her mother do? B: READ A BOOK. [Question test]
c. Her mother [READ A BOOK] and [did a crossword puzzle] [Coordination]
Her mother [did a crossword puzzle] and [READ A BOOK]
d. READ A BOOK was what her mother did. [Pseudocleft test]
e. READ A BOOK though she did, she was still bored. [*though* test]

To show that the behaviour of *read a book* is no fluke, we give below some evidence indicating that each of the other constructions in (25) are constituents.

(37) [$_{VP}$ Suddenly die of cancer at a young age] though she did, she is still remembered.
(38) What he did was [$_{VP}$ blindly rely on the advice of a counsellor]
(39) They [$_{VP}$ often called him a maladjusted sociopath] and [$_{VP}$ laughed at him]
They [$_{VP}$ laughed at him] and [$_{VP}$ often called him a maladjusted sociopath]
(40) A: What did she do? B: [$_{VP}$ give Basil the book]

Thus, it is clear that the structures in (25) are possible constituents in a sentence. That the constituents in (25) are seen as headed by the verbs rather than some other element seems fairly self-evident. Readers will be able to verify for themselves that all the material in the phrase is giving us information about the situation expressed by the verb.

1.5.3 PP

Beginners sometimes assume that PPs (e.g. (27)) are a type of NP. This assumption seems to result from the intuition that the preposition is in some sense 'less important' than the noun in the NP after the preposition, which is taken to show that the noun ought to be the head of the whole construction. This reasoning is misses the mark. Taking the PP *into the shop* as an example, we note that the preposition is not telling us anything about the shop, contrary to what we would expect if it were part of the NP headed by *shop*. Secondly, note that PPs never denote entities, unlike NPs. In most cases, PPs denote locations or directions. Finally, pronouns that can replace NPs (*it/them/she* etc) can never replace PPs. There is thus clear evidence that PPs are not a type of NP.

1.5.4 AP

It seems to be relatively unproblematic to identify APs in *predicative* position (i.e. if the AP is in a sentence-final position and the NP it describes is nowhere near it, as is the case if one of the APs in (26) appears in a sentence beginning with *They are*, e.g. *They are very angry at the rest of the human race*. What sometimes causes confusion among beginners are cases of *prenominal* APs, i.e. APs which are directly in front of the noun they describe, as in *the very*

(35)(b) are used to save describing the internal structure of the NPs, which is not relevant to the point at hand. (This common practice is called **triangle notation**.) Note also that in some works you will see the notation [my mother]$_{NP}$ instead of [$_{NP}$ my mother].

big tree. Here the AP is *very big*, not *very big tree*. A reason for assuming this is that the noun is the head of the whole construction, not the adjective, since the adjective is describing the noun and not vice-versa. Additionally, if you compare prenominal APs with predicative APs, you will notice that a uniform characterisation of the AP is possible only by assuming that the AP never contains the noun it describes.

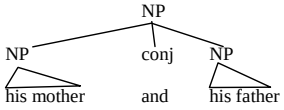
1.6. More on Coordination

We can now complete the treatment of coordination begun in section 1.3. The basic principles are:

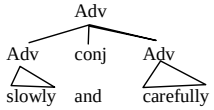
- Coordination is generally possible only with constituents of the same category.
- Coordination forms a phrase of the same category as that of the coordinated constituents.

The examples in (41) illustrate this.

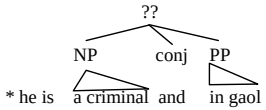
(41) a.



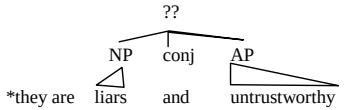
b.



c.



d.



B. Identify the categories coordinated by the italicised conjunctions in the sentences below.
a. A cleaner *and* a professor of physics recently got married.
b. She will sing *and* play a Beatles tune.
c. He went to the restaurant for a pie *and* chips *but* only had a glass of wine there.
d. There was an interesting talk on the last day of the conference, *but* everyone fell asleep.

C. Find the heads of the phrases below. Is the phrase a NP, AP, VP, AdvP or PP?
a. that big and ugly building
b. in the house over there
c. extremely proud of his children
d. smokes very weird cigarettes
e. sometimes sings out of tune
f. outside the house over there
g. seldom knew all the answers
h. completely unbeknownst to us

D. Identify the NP and VP which combine to form the following sentences.
a. The lady over there and her friend know George.
b. Fred obviously believes the story about the Martian invasion.
c. A big problem with the theory still gives the researchers cause for concern.
d. He usually read or watched television.

1.7. Complements, Arguments and Modifiers

Consider the following phrases, where the heads are underlined and optional constituents are enclosed in parentheses.

(42) VP:
a. (*constantly*) relied ON HER (*throughout the crisis*)
b. (*secretly*) devoured THE LEFTOVERS (*in the kitchen*) (*before leaving*)
c. (*often*) claimed THAT HE WAS GOD'S PERSONAL MESSENGER (*despite somewhat sceptical reactions*)

(43) AP:
a. reliant ON HER PARENTS (*during the crisis*)
b. fond OF HIS WIFE (*in every way*)
c. proud (OF HER CHILDREN) (*above all justification*)
d. unable (TO KEEP THE APPOINTMENT) (*because of the accident*)

e. (*completely*) bereft/devoid OF INSPIRATION (=lacking it)

(44) NP
a. his fondness/liking FOR STRONG DRINK (*during the Winter months*)
b. my (*misguided*) reliance ON MICROSOFT SOFTWARE (*in writing these notes*)
c. the expert (ON PHYSICS) (*on the committee*) (*in an orange waistcoat*)
d. her (*profound*) faith (IN DIVINE BEINGS) (*during the crisis*)
e. the (*generous*) friends (OF THE ACCIDENT VICTIMS)
f. the (*better known*) kings (OF ENGLAND) (*before the fifteenth century*)

(45) PP:
a. towards THE FENCE
b. (*right*) inside (THE HOUSE)
c. despite STATE INTERVENTION

In these phrases, the constituents in capitals are said to be **complements** of the heads. The expressions in italics are **modifiers** of the heads. The differences are as follows.

A. It is impossible to define the head of the phrase without referring to its complement. Take the verbs in (42). Any definition of *rely* would mention a person or thing relied upon, a definition of *devour* would mention something that is eaten and a definition of *claim* would mention some claim that is made. However, the definitions of the verbs in (42) need not mention the sorts of information expressed by the constituents in italics. (Consider how redundant the PPs sound in the following definition of *devour*: 'enthusiastically eat something at a particular time and at a particular place'.) A definition of *expert* (see (44)(c)) would mention that the individual in question possesses knowledge of a particular subject (which can appear as the complement of *expert*), but not whether the expert belongs to a committee or what they wear. A definition of *proud* (see (43)(c)) must mention that a proud person is proud of something or someone.

B. Modifiers are always optional, while complements are often obligatory. Notice that the claim is *not* that complements are *always* obligatory. The capitalised expression in (46) is a complement for the same reasons as that in (42)(b) is: one cannot define the verb without mentioning an eaten entity. However, it is possible to say *she ate* as well as *she ate the leftovers*, so we must assume that the complement is optional. Even if the complement is not expressed, it is still present in the meaning of the VP, for one cannot eat without any food being consumed. Similar remarks apply to *proud* and *expert* (cf. (43)(c) and (44)(c)). If we hear *John is proud*, we know that he is proud of someone or something. The sentence *John is an expert* is understood such that he is an expert on something.

(46) ate (THE LEFTOVERS) (before she went to the pub)

C. Complements appear closer to the head than modifiers do, as the examples above show.

D. (This principle subsumes A.) The complements of a word are those elements which occur within the phrase headed by the word which are mentioned in the **lexical entry** of a word. A word's lexical entry is the information associated with the word in the **(mental) lexicon**, the part of the native speaker's linguistic knowledge which contains idiosyncratic information, i.e. information which must be memorised because it is not describable in terms of rules. The mental lexicon is thus a mental 'dictionary'. The lexical entry for a word must include, among other things, information about the syntactic category, the pronunciation and the meaning of a word. It will also indicate how and whether certain parts of the meaning of a word are to be expressed in the sentence. Consider the verbs *eat*, *devour* and *dine*, all of which basically mean 'consume food'. The lexical entries for these verbs will be quite similar, but (apart from differences in pronunciation and subtle semantic differences) will differ in their specification of whether and how the food can be expressed in the sentence. The entry for *devour* specifies that the food *must* appear as a NP (*we devoured the chicken*), the entry for *eat* says that it may or may not do so, since both *we ate* and *we ate the chicken* are acceptable. The entry for *dine* specifies that the food may either not appear in the sentence (*we dined*), or may appear as a PP headed by *on* (*we dined on the chicken*), but not as a NP

(**we dined the chicken*). From contrasts of this type we can see that the types of complements a word can take are to some extent idiosyncratic, i.e. not able to be predicted wholly and solely on the basis of the meaning of that word. This is why information about the complements a word can take must appear in that word's lexical entry. On the other hand, the types of expressions which can modify an expression can always be predicted on the basis of knowledge of the meanings of that expression and of those of the modifiers.

E. There is no syntactically determined limit to the number of modifiers a word can have within its phrase, cf. (47). Because complements of a head can appear only if the lexical entry for the head mentions them, the number and type of complements of a head is much more limited. Verbs have at most two complements, and other categories can mostly only have one.

(47) a. [sometimes] walked THE DOG [slowly] [in the park] [on Fridays] [after work] [for two hours] [to clear his mind]
b. [big], [black], [fluffy] , [slobbery], [dangerous] dogs [without collars] [in the park]

The term 'argument': In other texts you may encounter the term **argument**. It means that same as *complement*, except *argument* is exempt from condition C above: an argument of a head need not appear within that head's projection. Thus, the subjects in *John [$_{VP}$ ate the food]* and *Ann [$_{VP}$ gave me the book]* are arguments of *eat/give*, but do not appear in the VP.

E. Are the phrases listed in brackets below each sentence below complements or modifiers, and what are they are complements or modifiers of? More than one answer may be right.
a. *People started loudly applauding the performance of the band in the next room.*
[the phrases headed by *loudly, in, of,* and *performance*]
b. *She gave Mary a book on French art from the last century at the party.*
[the phrases headed by *at, from, on, Mary, book*]
c. *The minister resigned because of the parliamentary decision on Friday*
[the phrases headed by *on, because of*]
d. *They unanimously rejected the application for funding for a second trip to America in August.*
[the phrases headed by *in, for* (both occurrences) , *unanimously*]

2. The internal structure of phrases

We now go into more detail about the various phrasal categories and their internal structure.

2.1. Noun Phrases[7]

Consider NPs containing two PPs, of which the first is a complement and the second a modifier. An incorrect proposal for the structure of such NPs is (48).

(48) * NP [TO BE REVISED]

D	N	PP	PP
the	student	of linguistics	with long hair
the	expert	on Mozart	from France
the	defender	of human rights	from Africa
the	speaker	on ethicsin a blue suit	
a	believer	in discipline	from the military academy

One reason why this is wrong is (49). Here the proform *one* refers back to the underlined strings. This suggests that the latter are constituents, but the tree in (48) does not suggest this.

[7] Many linguistis now maintain that what we call a NP is really a Determiner Phrase (DP). This is a topic for more advanced courses. See e.g. Haegeman & Guéron (1999:406ff) on this.

(49) a. the expert on Mozart from France and the ONE from Austria
b. the student of linguistics with long hair and the ONE with short hair

Secondly, the tree in (48) does not do justice to the structures in (50), where *and* joins the two underlined strings. It is clear that these two constituents are not nouns. Nor are they NPs, since the underlined expressions both require a determiner in order to be a complete NP.

(50) [A defender of human rights and advocate of prison reform]$_{NP}$ was on TV today

Thus, the underlined constituents in (49) and (50) are larger than N and smaller than NP. These constituents are called N' (pronounced 'N-bar'). They consist of the noun, which is head of the NP, and its complement. Perhaps, then, we could suggest the structure in (51).

(51) * NP [TO BE REVISED!]

N'

D	N	PP	PP
the	student	of linguistics	with long hair
the	expert	on Mozart	from France
the	defender	of human rights	from Africa

However, (51) is also wrong, since there is evidence that the noun and both PPs form a constituent, specifically one of the same type as N'. In (52), we see that this constituent can be referred to by the proform *one*. (53) shows that such constituents can be coordinated.

(52) Which student of linguistics with long hair are you talking about? The ONE near the window?

(53) a. A defender of human rights from Africa and advocate of prison reform met.
b. An expert on Mozart from France and composer of several symphonies is coming

Thus, the correct structure for NPs with a complement and a modifier PP is (54). This can explain all the empirical facts just discussed, and can account for the observation in section 1.7 that the complements of N are always closer to N than its modifiers are (cf. **the expert from France on Mozart, *the student with long hair of linguistics*).

(54) NP

N'

N'

D	N	PP	PP
the	student	of linguistics	with long hair

As you can see, this tree says that the modifier PP is added to a constituent, namely N', without changing the category of the constituent: the category of the constituent consisting of both N' and the modifier PP is N', not some bigger type of constituent such as NP. This brings us to some extremely important notions in grammar:

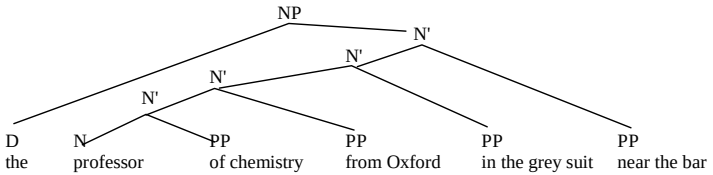
(55) The operation where a constituent X is added to another constituent Y such that the resulting constituent has the same category as Y is known as **adjunction**. X is referred to as an **adjunct**. We say that X is **adjoined** to Y.

(56) Modifiers are always adjuncts.

(57) Adjunction, and hence modification, is **recursive**, by which we mean that it can apply more than once. For instance, if a modifier is adjoined to N' to form a larger N', then one can add a further modifier to form a yet larger N'.

Here is a tree illustrating the principle in (57).

(58)

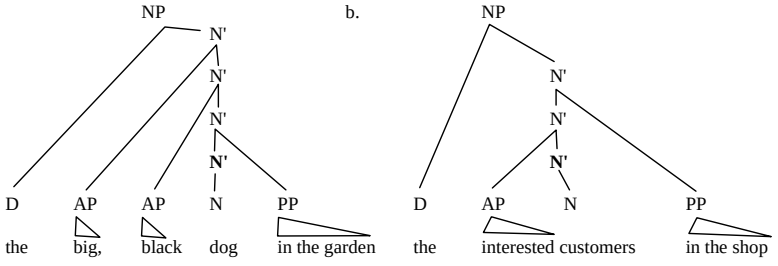


Modification with APs. Like the modifier PPs discussed above, APs found inside an NP adjoin to a N'. As far as the syntax of NPs is concerned, the most important way in which APs differ from modifier PPs can be summarised in the following statement:

(59) English APs adjoin to the left of the N' when they are *head-final*, i.e. when the adjective is the last element in AP. If AP is not head-final, it adjoins to the right of N'.

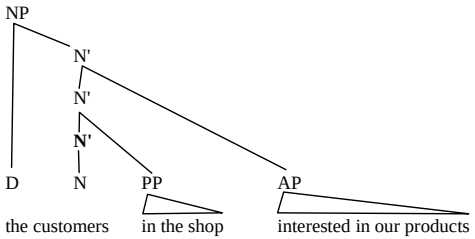
Here are some trees illustrating some of the possible types of NPs containing APs.

(60) a.



b.

c.



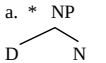
The trees in (60) raise another issue: cases where nouns have modifiers but no complement. The N's in bold type in (60) are *non-branching*, i.e. they contain only one category, N. Why include these N's? One reason is that if we left these N's out, the trees would wrongly imply that the phrases *in the garden, interested, in the shop* are complements of N. Moreover, the N' proform *one* can replace the bold-printed N' constituents in (60) (e.g. *The dog that bit me was the big, black ONE in the garden*).[8]

Simpler types of NP. (61) gives two imaginable structures are for NPs with just a determiner and a noun. That (61)(b) is better can be deduced from (62). We cannot say that two nouns are being coordinated here, since this implies that the PPs are complements of the nouns *student* and *King*, which is incorrect, because we cannot say **a student in psychology* and **King of the Church of England*. Since only constituents of identical category may be

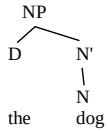
[8] Some writers leave out non-branching N' constituents as an abbreviatory convention. We do not follow this convention here since it has a proven track record of causing confusion among students who have understood the rationale for the N' constituent.

coordinated, we cannot coordinate N and a N'. Thus, we assume that every N projects a N', even if there are no complements or modifiers in the NP. (62) involves coordination of two N's, as in (63).

(61) a. *



b.



(62) a. A student and lecturer in psychology
b. He became [$_{NP}$ King and head of the Church of England].

(63) a. [$_{N'}$ [$_{N'}$ [$_{N}$ student]] and [$_{N'}$ [$_{N}$ lecturer] [$_{PP}$ in psychology]]]
b. [$_{N'}$ [$_{N'}$ [$_{N}$ King]] and [$_{N'}$ [$_{N}$ head] [$_{PP}$ of the Church of England]]]

More evidence that N projects a N' even without complements or modifiers comes from (64), where *one*, which is a proform for N' as seen above, can refer back to *student*.

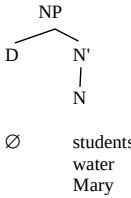
(64) This [$_{N'}$ [$_{N}$ student] and that **one** tried to blow up the Institute of Syntax.

Now we turn to nouns which have no determiners, no complements and no modifiers. (65) indicates that these must be not only N, but N' (witness the use of the proform *one*) and NP, witness the pronoun *they*.

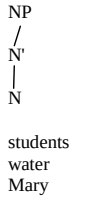
(65) a. The reporter uncovered [$_{NP}$ [$_{N'}$ [$_{N}$ scandals]]]. I mean big **ones**.
b. The reporter uncovered [$_{NP}$ [$_{N'}$ [$_{N}$ scandals]]]. **They** made him famous

This leaves the structures (66) as possibilities for NPs consisting solely of a noun. (66)(a) says that there is a determiner position in the syntax which is occupied by a *zero* or *null* determiner, one which is not pronounced. The other option is to assume that the determiner position is not projected at all, as in (b). We will not decide which is the better option here.

(66) a.



b.



Pronouns can be represented as follows for the purposes of this course.

(67)

The determiner position in the NP, also called a **specifier** position, can be occupied by a elements like those in (68). These specify which instance of the type of entity described by the N' is being referred to. They thus have a different function to that of modifiers, whose function is to specify the type (not the instances) of the entity concerned. Generally, determiners cannot co-occur with other determiners (**a this book, *her these books*).[9]

(68) Articles: the definite article (*the*) and the indefinite article (*a(n)*)
Demonstrative (deictic) determiners: *this, that, these, those*
Quantifiers: *some, all, both, any, no, each, every, either, neither, a few, a little*
Possessive determiners: *my, your, its, her, his, our, their, John's*

[9] Two exceptions (ignored here) are predeterminers (cf. *both/all her books, such an idiot*) and APs appearing before indefinite articles (*this big a dog, so great a difficulty*).

NPs with possessive *'s* have the following properties:

a. There is always a full NP immediately in front of possessive '*s*.

b. Possessive '*s* forms a constituent with the NP in front of it, as we can see from coordinations like [[*my brother's*] *or* [*my sister's*] *car*].

c. Possessive '*s* is a type of clitic or affix, i.e. it cannot stand alone. It attaches to the NP in front of it. It is not is an affix which attaches to nouns, as seen from examples like [$_{NP}$ [$_{NP}$ *the man over there*]*'s hat*], and others in (8).

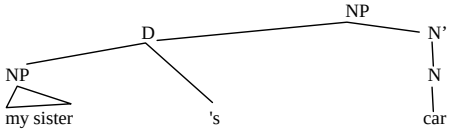
d. The NP in front of '*s* is interpreted as a possessor of the entity denoted by the material after '*s*, i.e. such that this NP *has* this entity. E.g. *John's book = the book which John has* and *the slave's master = the master whom the slave has*.

e. The constituent NP+'*s* can be replaced by possessive determiners: *the man's hat = his hat*, *the people's books = their books*.

f. The constituent NP+'*s* functions like a type of *definite* determiner. Thus, *Mary's car* means the car of Mary, not a car of Mary. If the NP in front of possessive '*s* contains a determiner, this refers to the N inside this NP, not the N after possessive '*s*. Hence, in *a person's cars*, *a* is a determiner of *person*, not of *cars* (which is impossible anyway given **a cars*), and *my* in *my sister's car* refers to *sister* and not *car*.

The structure in (69) enables us to get a handle on all these facts. It correctly treats '*s* and the NP in front of it as a constituent (cf. point ***b*** above). The fact that the structure treats this constituent is a type of determiner reflects points ***e*** and ***f*** above.

(69)

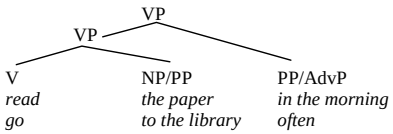


F. Draw trees for the NPs below. Use triangle notation (see footnote 6) for all PPs and APs.
a. a French painter of abstract landscapes b. the man in the grey suit near the bar
c. a big, old car in the street d. Mary's hatred of plastic spoons
e. my friend's wife's car f. a friend of my wife's car
g. John and Mary's brother [draw two trees for g., one for each meaning]

2.2. Verb Phrases

We now turn to the internal syntax of VP. Consider (70). Complements of V combine with V to form a VP, and modifiers of V adjoin to VP. This is quite similar to the analysis of NPs given above, except that we are here not assuming that there is a V' constituent parallel to N'.[10]

(70)



Evidence for the structure in (70) is as follows. The proform for VP is *do so*. If (70) is right,

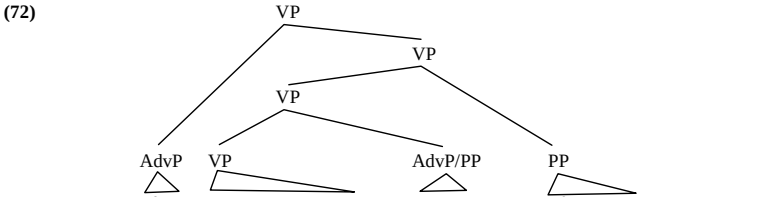
[10] Actually, many syntacticians assume that there is such a thing as V', consisting of a verb an its complement. The specifier position of VP (i.e. the position parallel to a determiner in NP) is initially occupied by the subject of the sentence, which later moves to a position outside the VP. On this idea (the 'VP-internal subject hypothesis'), see e.g. Radford 1997 or Haegeman & Guéron 1999. This is ignored here because it is a topic for more advanced courses.

should be able to refer to both VP constituents with this proform. The following sentences show that this is the case. *Do so* refers back to the constituents in brackets.

(71) a. John [reads the paper]$_{VP}$ in the morning, and Mary DOES SO at night.
a'. John [[reads the paper] $_{VP}$ in the morning]$_{VP}$, and Mary DOES SO also.
a". *John [reads]$_{V}$ the paper in the morning, and Mary DOES SO magazines at night.
b. Fritz [goes to the library]$_{VP}$ often, and Stan DOES SO sometimes.
b'. Fritz [goes to the library often]$_{VP}$, and Stan DOES SO also.
b". *Fritz [goes]$_{V}$ to the library often, and Stan DOES SO to the newsagent sometimes.

Some facts about modifiers in VPs: As was the case with modification of N, modification of V can be recursive, cf. (72). (72) also illustrates another fact about VP modification, namely that certain types of AdvPs may be adjoined to the left of the VP.

(72)



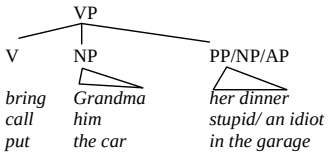
Verbs can take (jargon: *subcategorise for*) various types of complements. Some common types of **subcategory** of the verbs are given below. (You need not memorise the terms for the subcategories; they are mentioned to give you an idea of the complements verbs can take.)

- **Intransitive** verbs take no NP complement: *dine, work, exist, arrive, die, disintegrate.*
- **Transitive** (or: 'monotransitive') verbs take a single NP complement: *see her, read a book, open a bottle, have a psycho attack.*
- **Ditransitive** (or: **double object**) verbs take two NP complements (the first is called an 'indirect object' and the second a 'direct object'): *give/send/read/show him a letter, bake me a cake*. Ditransitive verbs can often appear in an alternative construction where the indirect object appears in a PP with *to* or *for*: *give the book to John, bake a cake for me*.
- **Verbs with a sentential complement**: *He said/claimed/argued/thought/knew that he is a genius.* Some such verbs may also have an indirect object PP/NP present: *He said [to her] [that she looks like his grandmother], He asked [her] [whether she liked death metal]*.
- **Prepositional verbs** have a PP as (one of) their complement(s): *rely on them, deal with them, stare at them*; *interest [someone] [in the proposal], subject [them] [tests]*.
- **Verbs with a predicative complement**. A predicative complement tells us about one of the NPs in the sentence, namely the subject or, if there is one, the object. Thus, the complement of the verb *be* always tells us something about the subject: *Heidi is intelligent/in the library/a genius*. The PP complement of *put* tells us about the location of the object (*I put the book on the shelf*). The AP or second NP complement of *make* tells us something about the (first) NP complement: *she made him angry/a bitter person*. Other verbs with predicative complements: *become/get/stay fit; leave him in the kitchen.*

Many verbs can have more than one subcategory. For instance, *keep* can be either transitive (*keep the book*) or take a predicative complement (*keep the mice out of the house*).

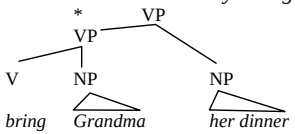
For our purposes, VPs with more than one complement can be represented as in (73). (Of course, any modifiers present will be adjoined to VP in the usual manner.)

(73)



This is in no wise the only possible analysis. Discussing the alternatives would take us too far afield. Note however that (73) is far better than (74), which wrongly implies that the second NP is a modifier. If we remember that *do so* can replace VP, (74) wrongly predicts impossible sentences like **Mary brought Grandma her coffee, and John did so her dinner*.

(74)



G. Determine the complements and modifiers of the italicised verbs in the following sentences.

a. He *left* his keys in his pocket. b. He *left* his wife in Berlin in 1973.
c. He *left* his wife in 1973 in Berlin. d. James *passed* the sugar to Ann.
e. James *passed* Ann at the corner. f. Fred *got* a parking ticket in front of the shop.
g. Fred *got* the key into the lock. h. They *decided* that Gertrude was suitable.
i. Egbert *talked* about everyone's dissatisfaction with the politicians.

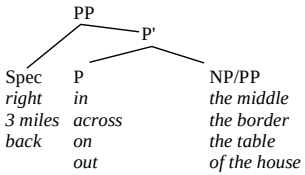
H. Draw trees for the VPs in the sentences below. Use triangle notation (see footnote 6) for all NPs, PPs, AdvPs and APs.

a. She often watched videos in the evenings. b. He gave flowers to Mary yesterday.
c. She sent the letter yesterday. d. She sent John a book yesterday.
e. She went to the pub every night. f. She woke early the next morning.
g. They called her a genius. h. They called a doctor the next day.

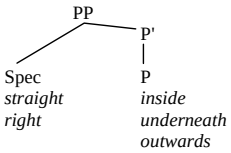
2.3. Prepositional Phrases

You will not be required to draw trees indicating the internal structure of PPs in this course, but to get a rough idea of the possibilities, consider (75). The complements of the preposition are within P'. A limited set of items can occur in front of the preposition. The trees treat them as specifiers, analogous to determiners inside NP. (An alternative is to relabel P' as PP and to treat the elements before the prepositions as adjuncts. It is hard to find evidence for or against this alternative. Here we merely note the possibilities.)

(75) a.



b.



We should discuss the elements under P in (75)(b). Modern syntacticians see these as prepositions without complements. Parallel to the terminology in VP, such prepositions are called **intransitive prepositions**. The underlined elements in (76) are further examples of

intransitive prepositions.

(76) a. they went {inside/downstairs/onwards/forwards}
b. they are {here/everywhere/downstairs/overhead/ahead/outside}

Older grammars called intransitive prepositions 'adverbs'. This was unfortunate. Intransitive prepositions have little in common with the other main group of words referred to as 'adverbs', namely those derived from adjectives (*warmly, powerfully, slowly, badly*). Intransitive prepositions have much in common with the elements referred to as 'prepositions', the only difference being that the latter have complements while the former lack them. Intransitive prepositions refer to directions and places, just like other prepositions. They may also be coordinated with PPs, cf. (77), suggesting that they head a PP and are therefore prepositions. Moreover, a significant number of elements referring to directions or places can be used either with or without a complement, cf. (78). Calling these 'prepositions' when they have a complement and 'adverbs' when they do not disguises the relationship between them. Thus, these elements should be treated as prepositions regardless of whether they have a complement, just as we say that *eat* is a verb in both *I ate* and *I ate the cake*.

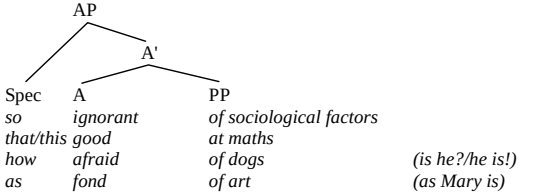
(77) a. They walked [inside]$_{PP}$ and [down the hall]$_{PP}$
b. They went [upwards]$_{PP}$ and [over the hill]$_{PP}$

(78) a. They are inside the house They are inside
b. The sky above us The sky above
c. The valley below us The valley below

2.4. Adjective Phrases

As with PPs, you will not be required to indicate the internal structure of APs. A rough understanding of them will suffice. (79) illustrates a structure for a complex AP. The adjective and its complement forms an A' constituent, just as the complements of N form a N' constituent. A limited set of elements can occur in the specifier position. These elements specify (or, in the case of *how*, ask for a specification of) the exact degree to which the property expressed by the adjective applies. There are parallels between the specifiers of AP and specifiers of NP (better known as determiners). Both make the reference of their respective heads more specific. Two possible specifiers of AP (*this/ that*) can also function as determiners in NP (cf. *this dog; this good*).

(79)



There is an interesting relationship between the specifier position of the AP and the position of the whole AP. Recall the statement in (59), which said that an AP can go before the noun it modifies if the adjective is the final element of the AP. There is an exception to this: APs with a specifier do not go directly before the noun they modify, even if the adjective is the final element in AP:

(80) *a [this big]$_{AP}$ dog, *a [so ignorant]$_{AP}$ person, *a [how big]$_{AP}$ car would you like?

Instead, such APs must be adjoined after the noun, or, if the noun's determiner is the indefinite article *a(n)*, they may appear before the determiner:

(81) a. an argument [as simple as that]$_{AP}$ a dog [this big]$_{AP}$
a person [so ignorant]$_{AP}$ a proposal [twice as bad]$_{AP}$
b. [this big]$_{AP}$ a dog [too big]$_{AP}$ a dog
[so ignorant]$_{AP}$ a person [as simple]$_{AP}$ an argument as possible

[how big]$_{AP}$ a car do you want? [twice as bad]$_{AP}$ a proposal

Further elements which can go before an adjective in an AP are the elements in italics in (82), which are termed 'degree adverbs'.

(82) *very/incredibly/somewhat/quite/pretty/utterly/totally/mind-blowingly* tasteless

These differ from the specifiers just discussed in that they do not prevent the AP from appearing before the noun they modify:

(83) a very big dog, an utterly tasteless performance, a completely lousy book

These are modifiers of A which adjoin to the left of A'. Evidence for this claim comes from cases like the following:

(84) [$_{AP}$so utterly afraid of dogs] was Egbert that he never left his house.

Finally, we note that some PPs can modify adjectives, adjoining to the right of A' (*good in some ways*, *interesting to a certain extent*).

2.5. General remarks

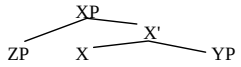
There are a couple of general observations which apply to every type of phrase:

- The first thing that a head combines with is its complement(s).
- Modifiers adjoin to the constituent consisting of the head and its complement(s).

Understanding these generalisations will make it easier to remember the individual properties of NP, VP, AP and PP.

The structures assumed for NP, AP and PP conform to a pattern assumed to be involved in the construction of *all* phrases. This pattern is called the **X' schema**, illustrated in (85). The interpretation is that if X is some head (be it e.g. N, A or P), then it joins with its complement (=YP in (85)) to form an X'. A specifier (=ZP in (85)) joins with X' to form XP. Modifiers adjoin to X'. Recall again that here we do not apply the X' schema to VPs for reasons of simplicity, although if you do more advanced syntax (for instance following the coursebooks Radford 1997a or Haegeman & Guéron 1999), you will see that VP also adheres to the X' schema.

(85)



I. In the following sentences, find each instance of the category given in brackets after the sentence. Be careful when deciding where each phrase begins and ends.

a. He drove his brother's wife's car from the top of the hill to the beach. (NP)
b. Mary's brother and John are doing a course on the history of the Roman empire. (NP)
c. At the next meeting, the president of the committee called in an expert on environmental pollution and global warming from America. (NP)
d. The person over there and John's brother are professional suntan lotion testers. (NP)
e. Francine's idea of a luxurious Sunday afternoon is to have a very hot bath while consuming immoderately large amounts of affordably cheap French champagne or reading some articles relevant to her work for the next week. (AP)
f. It's not so very surprising that he's quitting his job, considering that that large an amount of boring and difficult work gets assigned to him on an almost daily basis. (AP)
g. Rover walked out of the house, down the driveway and onto the street. (PP)
h. The ball hit me right on the nose. (PP)
i. The man at the door's car is on the road, just near the entrance to our house. (PP)
j. Put the chair between the cupboard and the lamp or near the window. (PP)

J. The sentences below show **syntactic ambiguity**: they could be analysed as having two different structures which each has a different meaning. Use your knowledge of syntax to resolve the ambiguity. Answers to the first two questions are given as an example. (It is only necessary to indicate the structure and categories which are relevant to the resolution of the ambiguity.)

a. *Old men and women were sitting in the park.*
Answer: Reading (1): *old* modifies *men and women*: [$_{N'}$ old [$_{N'}$ men and women]]
Reading (2): *old* modifies *men* but not *women*: [$_{N'}$ [$_{N'}$old men] and [$_{N'}$women]]

b. John gave her the flowers in the kitchen.
Answer: The PP might modify either *give* or *flowers*. The structures:
gave [$_{NP}$ her] [$_{NP}$ the flowers in the kitchen]
[$_{VP}$ [$_{VP}$ gave her the flowers] in the kitchen]

c. *He bought her books.*
d. *She has read many books on political affairs in recent years.*
e. *She watched the man with the telescope.*
f. *Do you have more interesting books?*
g. *The boss talked about the workers in the factory.*
h. *There was nothing I wanted to watch on television - only bad movies and documentaries.*
i. *She said that she liked him at the party.*

3. Sentence Structure

3.1. Auxiliaries and lexical verbs

In discussing English sentence structure, we must discuss **auxiliaries**:

(86) **Modal auxiliaries**: *can, may, must, shall, will,* as well as *need* in some uses.
Other auxiliaries: *be*, as well as *have* and *do* in some uses.

There are several syntactic differences between auxiliaries and normal verbs (called **lexical verbs** because they are part of the LEXICon (the vocabulary) rather than the grammar).

A) In questions, auxiliaries appear in front of the subject NP, while lexical verbs do not:

(87) *Does she work?* vs **Works she? Has she worked* vs. **Worked she?*

B) In a **tag question** (a short question added to a statement like in (88)), an auxiliary can appear but not a lexical verb:

(88) *She has worked, hasn't/didn't she?* vs. **She worked, worked she?*

C) Negative particles (*not, n't*) can negate auxiliaries but not lexical verbs:

(89) *she mustn't/must not smoke* vs. **she smokes not*

D) Lexical verbs can be transitive (i.e. take a NP complement), auxiliaries cannot:

(90) *he wants/needs a drink* vs. **he must a drink*

E) Lexical verbs can be followed by a VP introduced by the **infinitive particle** *to*. Auxiliaries cannot appear with *to*:

(91) *He wants to read it, she tried to read it*; *he must read it, she did read it*

The constructions in points A-C above are impossible without an auxiliary. If there is no auxiliary, the auxiliary *do* must be inserted. This operation is known as ***do* support**. This use of *do* is sometimes known as **dummy-*do***. *Do*-suppport is illustrated in (92).

(92)	a. **smokes she?*	should be .	*does she smoke?*
	b. **she smokes not*	should be .	*she does not smoke*
	c. **she smokes, smokes she?*	should be .	*she smokes, doesn't she*

Some verbs can be used either as lexical verbs or as auxiliaries.

♦ When *have* forms the perfect tense of a verb it is an auxiliary (*have you eaten*?). In other meanings, such as its possessive meaning, it behaves like a lexical verb in most varieties of English (*Don't you have a pencil?*). A minority of British speakers use possessive *have* as an auxiliary (*I haven't any time; Have you a pencil?*).

♦ *Do* with NP complements (*do homework/ a duty/ a dance*) is lexical, as expected. Obviously, all cases of *do*-support involve the auxiliary *do*. We also find the auxiliary in cases like *Martians DO exist, I DID see one!* This is often seen as a special use of *do* ('emphatic *do*'), but is really just an instance of *do* support. If we want to emphasise that a sentence is true contrary to the hearer's expectations, we stress the auxiliary (*I WILL win; He IS a loser*). Since this is impossible without an auxiliary, we use *do* support in such cases.

♦ *Need* always behaves like a lexical verb when it is transitive (*he doesn't need a pencil* vs. **he needn't a pencil*). When *need* means the same as *must*, it can either behave like an auxiliary or lexical verb. In a given sentence, however, it must display either all the characteristics of an auxiliary or all the characteristics of a lexical verb discussed above; *need* never behaves like a cross between an auxiliary and a lexical verb (**need he to go, *does he need go, *he need not to go*). When used as an auxiliary, *need* cannot take inflectional endings: *he need not go* vs. **he needs/needed not go*. In this respect, *need* is like other modal auxiliaries (**he musted/musts*). An extra complication is that auxiliary *need* is constrained in ways similar to the use of *any* instead of *some*: it can be used only in questions and negated contexts: *Need I go? I need not go. *I need go*.

K. Using the above tests, decide whether the use of *do* in the *do so* proform (section 2.2) is a lexical verb or an auxiliary. You could consult informants or search for the relevant strings under www.google.com if you don't trust your intuitions about English.

L. Decide whether *need* is an auxiliary or lexical verb in the following sentences. Reformulate the sentences, changing *need* to a lexical verb if it is an auxiliary, or to an auxiliary if it is lexical. (The reformulation may not be possible in all cases.**)**

a. You don't need to go to the bank. b. I don't need any help.
c. Nobody need do that. d. You need to go to the bank.

3.2. The sentence as IP

It was suggested earlier that sentences consist of a NP and VP, as in (93)(a), but we were ignoring auxiliaries at this point, so the question arises as to where auxiliaries go. A couple of hypotheses for sentences with auxilaries are given in (93)(b,c). (The hypothesis in (93)(c) would involve assuming that what we have hitherto called 'VP' is really V'. This makes the VP look similar to the NP, with grammatical elements like auxiliaries and determiners occupying the leftmost (specifier) position.)

(93) a. $[_S$ NP VP$]$ b. $[_S$ NP Aux VP$]$ c. $[_S$ NP $[_{VP}$ Aux $[_{V'}\ ]\ ]\ ]$

It turns out that none of the options in (93) is desirable. The structures in (93)(a,b) do not assume that the auxiliary and the VP form a constituent which does not include the subject, contrary to the evidence from coordination and movement in (94).

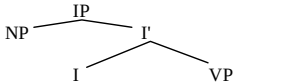
(94) a. She [has already gone to France] and [may go there again]
b. She [should go to the doctor soon] and [will probably do so tomorrow]
c. She said she would buy a cow, and [bought a cow] she has.

The structure in (93)(c) is not contradicted by (94), but is also problematic. To see this, note firstly that auxiliaries influence the form of the lexical verb:

(95) a. Modals go with verbs in the infinitive form (*she must/might sing a song*)
b. *have* goes with verbs in the perfect participle form (*she has sung a song*)
c. Progressive *be* goes with verbs in the *–ing* form (*she is singing a song*)
d. Passive *be* goes with verbs in the perfect participle form (*the song was sung*).

These facts lead us to expect something not predicted by any analysis in (94), namely that *the auxiliary takes the VP as its complement*. This expectation arises because an element can normally determine what kind of elements appear in another phrase only if this phrase is complement of the former element. Consider for example the fact that verbs and prepositions require their NP complements to have accusative case (*I saw her/*she; with her/*she*) or the fact that verbs can demand complements headed by certain prepositions (*rely on/*in them; trust in*on them*). Further reasons for assuming that the VP is complement of the auxiliary include the fact that the VP is after the auxiliary, reflecting the typical head-complement order of English, and the fact that the auxiliary and VP form a constituent (cf. (94)), which fits the generalisation that a head and its complement form a constituent (section 2.5). Facts like those just mentioned lead many to posit a structure for sentences of the type seen in (96).

(96)



they	should	go home
they	have	gone home
they	are	going home

The overall structure correctly reflects the constituency and head-complement selection facts. We will shortly see what the label 'I' stands for, but let us firstly note that I is present even if there is no auxiliary in the sentence.

Arguments for empty I: Consider (97). Recall that coordination is only possible with equal categories (section 1.6). If the lefthand conjunct were just a VP, we would not be able to coordinate it with an I'. (In (97) *e* stands for 'empty', i.e. not pronounced.)

(97) She [$_{I'}$ [$_{I}$ *e*] [$_{VP}$ read the book]] and [$_{I'}$ [$_{I}$ will] [$_{VP}$ watch the video]].

A second piece of evidence (from Radford 1997a) for empty I concerns the fact, seen in (98), that auxiliary *have*, but not lexical *have*, can undergo cliticisation (contraction) with the subject. If we assume that there is an empty I between lexical *have* and the subject, we have an explanation for why the cliticisation is impossible with lexical *have*.

(98) a. she [$_{I}$ **had**] repaired the car; I [$_{I}$ **had**] cut my hair [auxiliary *have*]
b. she [$_{I}$ **'d**] repaired the car; I [$_{I}$ **'d**] cut my hair [auxiliary *have*]
c. she [$_{I}$ *e*] [$_{V}$ **had**] the car repaired; She [$_{I}$ *e*] [$_{V}$ **had**] long hair [lexical *have*]
d. *She [$_{I}$ *e*] [$_{V}$ **'d**] the car repaired; *She [$_{I}$ *e*] [$_{V}$ **'d**] long hair [lexical *have*]

The nature of I: 'I' is an abbreviation for 'Inflection'; the sentence is thus considered to be an **Inflection Phrase** or **IP**. ('I' can also be written as **Infl**.). The thinking behind this terminology is complex and is presented in simplified form here. The 'inflection' referred to in the term 'Inflection Phrase' refers to the information expressed by inflection on auxiliaries and lexical verbs, which has two aspects:

(99) **Tense**: the distinction between present (*you talk*) and past (*I talked*)[11]

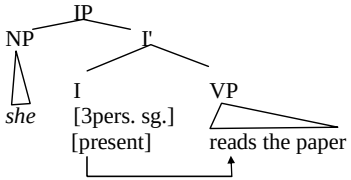
(100) **Agreement**: person/number information about the subject (*you talk* vs. *she talks*).

The claim that the item called I in (96) expresses tense and agreement information coupled with the claim in (96) that I is the head of the sentence implies that tense/agreement features are crucial in determining the nature of the whole clause. To see this, consider what happens if there are no tense/agreement features. In this case we end up with an infinitive, a structure like *to read the book*, which is no longer a freestanding sentence. In such cases, the absence of tense/agreement features are expressed by inserting the **infinitive particle** *to* in the I position, as in (101).

(101) Stan promised [$_{IP}$ [$_{I}$ to] [$_{VP}$ carefully read the book]]

If there is an auxiliary, it expresses the tense and agreement features itself. If there is no auxiliary, tense and agreement features of Infl are expressed on the verb in the VP. The features in Infl influence the choice of the morphological form of the verb, as the following diagramme is meant to express.

(102)

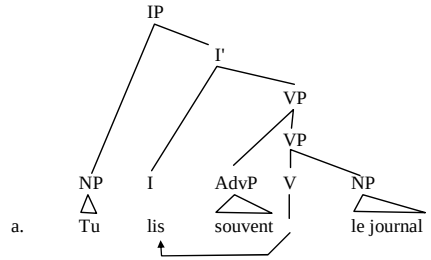


The fact that I influences the inflection of a verb not found in the I position is a peculiarity of modern English. In other languages, inflection is always expressed directly in the I position. Adger (2003:165f) notes that in certain English Creole languages tense inflection is expressed only by auxiliaries that appear in the Infl position. In many other languages, all inflected verbs move to the I position. One such language is French. (103) gives an example of a French IP without an auxiliary. The structure of IP and VP is very similar to English, apart from the fact that in French all verbs move to I. That the lexical verb *lire* 'read' moves out of the VP to the Infl position can be demonstrated using the position of the adverb. In both English and French, an AdvP can be adjoined to the left of VP. In sentences like (103),

11 Because Infl is associated with Infl, many linguists use 'T' or 'Tense' instead of 'Infl'.

the AdvP marks the beginning of the VP. As clear from (103), the English adverb must appear before the verb, while the French adverb must appear after the verb and before the complement of the verb. This suggests that the verb moves out of the VP to the I position in French.

(103)



a. Tu lis souvent le journal
b. *you read often the paper (French word order, impossible in English)
c. you often read the paper (English word order, impossible in French)

English behaved like French in this respect until the 17th century. Before then, people said *I know not this man*, which would today be *I do not know this man*. The negator *not* occupied a position similar to that of *often* in (103) and the lexical verb appears in front of it.

VP-ellipsis: Analysing the sentence as an IP helps us to understand the phenomenon in (104). The crossing out of the VPs indicates that they undergo ellipsis, i.e. are not pronounced. This (like the *do so* proform seen in the introductory course) is a way of avoiding the repetition of VPs. (VP ellipsis is typical of English, but is not possible in many other languages.)

(104) a. John will go to France and Mary **may** ~~go to France~~
b. He said he would help me but I don't know if he **will** ~~help me~~.
c. Grandma likes Gothic music but I don't know if Grandpa **does** ~~like Gothic music~~
d. Juan is seeing the film and Ann **has** ~~seen the film~~ already.
e. They said they would get there before I **do** ~~get there~~, but they never **did** ~~get there~~.
f. John often reads and Mary said she **does** ~~often reads~~. **Do** you ~~often read~~?
g. Simon played the Toccata faster than anybody else **does** ~~play the toccata~~.

In (104), elements in the I position are written in bold type. VP ellipsis is impossible unless we have a *pronounced* Infl element. If there is none, we need *do* support, cf. (104)e-g). Why is this? We can explain this simply as follows:

A. Assume the idea introduced earlier that the Infl position really is associated with the sorts of (tense and agreement) information that is expressed in verbal inflection.
B. The tense and agreement features that Infl contains *must* be pronounced.
C. If the VP undergoes ellipsis, this information cannot be expressed by inflection on the lexical verb, since the verb is part of the unpronounced material.
D. Since inflectional affixes are bound morphemes, they cannot be pronounced alone in the Infl position. Hence: **Mary loaded the car faster than John* [$_{I'}$ [$_{I}$ *–ed*] [$_{VP}$ ~~*load(ed) the car*~~]].
E. To reconcile B, C and D, English inserts the dummy auxiliary *do* in order to provide a stem capable of supporting the inflectional morphemes.

This explanation for *do*-support relies on assumption A. To the extent that the explanation is satisfying, it supports assumption A, which is one of the claims to be proved in this section.

In (104) we see that the elliptical VPs are identical to the pronounced ones, except that in (104)c,d,f,g) the pronounced and unpronounced verbs differ in inflection. If we assume that the inflectional information comes from the Infl position and not from the lexical verb itself, this is not a problem. The elliptical and underlined VPs are identical in all respects. It is only the features of Infl that differ between the two clauses.

Recall from earlier that the infinitive particle *to* is seen as an instance of I. It is thus no surprise that VP ellipsis is possible if *to* occupies the I position:

(105) a. He said he would help me but he may not be able **to** ~~help me~~.
b. Juan is seeing the film and Stan is going **to** ~~see the film~~.

Functional categories: It is worth noting some terminology in conjunction with I. I and its projections (i.e. I' and IP) are instances of a **functional category**. Functional categories are categories which are part of the grammar rather than the vocabulary of a language. Another functional category is D. The other categories seen thus far (N, P, A, V, Adv) are **lexical categories**, categories which are part of the vocabulary of a language and express notions which can be conceived of without the help of language.

A note on negation: A complete analysis of the structure of the clause would have to discuss the phenomenon of negation, which is however too complex and controversial a topic to be discussed here. See Radford (1997a:ch. 6) for a proposal.

M. Draw the trees for the following sentences, using the IP notation for sentences. Use triangle notation for NPs and VPs.
a. Fred has forgotten his book. b. Jane has a dislike of spiders.
c. She helped me and I must thank her. d. She will sing and dance.
e. I should go and will go.

N. Some books describe the use of *do* in (104)(e,f) as a proform for a VP. This implies that *do* in a sentence like (a) below (like *do so* in (b)) replaces the underlined VP rather than being an instance of *do* support involving an unpronounced VP. Now consider (c) and (d) below. Many British speakers accept the sentences in (c), while most other speakers reject them (hence the stars in (c)). In the light of these facts, assess, with regard to the two different types of speaker, the claim that *do* in (a) is a proform for VP.
a. He said he'd win the race and he **did**
b. He said he'd win the race and he **did so**
c. *He said he'd win the race and he has **done**; *He said he'd win the race and he could **do**
d. He said he'd win the race and he has **done so**; He said he'd win the race and he could **do so**

3.3. Another functional category: CP

3.3.1 Subordinate clauses

Recall the verbs mentioned in section 2.2 which have a sentential complement (a complement which is a type of sentence). Examples of this are:

(106) a. Wayne inquired of Sybil if she liked car racing.
b. Someone mentioned to me that Quentin has a massive social problem.
c. I no longer have a social life because I am writing an introduction to syntax.

These sentences are **complex sentences.** They consist of more than one sentence. The underlined parts of these sentences are refererred to as **subordinate clauses** or 'embedded clauses'. Let us explain the terminology. The term **clause** means the same thing as 'sentence', except that it can be used of IPs (including, say, *to*-infinitives like *to go home*) which are part of larger sentences. The underlined constituents in (106) are said to be 'subordinate' or 'embedded' because they are part of larger sentences, which are called a **main clauses** (or sometimes 'matrix clauses', 'superordinate clauses'. In (106)(a,b), the underlined clauses function as complements to the verbs *inquire* and *mention*. That they are complements is clear from the fact that they are obligatory: **Wayne inquired of Sybil* and **Someone mentioned to me* are not complete sentences. The underlined constituents in (106) seem to

have the same function as the underlined complement NPs in *Wayne asked Sybil the time* and *Someone mentioned the truth to me.* In (106)(c), the subordinate clause introduced by *because* functions like a VP modifier, as is evident by comparing it to the PP in *I no longer have a social life [because of my work]$_{PP}$.*

The underlined constituents in (106) cannot generally stand as complete sentences on their own. If, however, we omit the first word in these subordinate clauses (*if, that, because*), we get a constituent which is able to be used as a freestanding sentence. The first words in these subordinate clauses are known as **complementisers** (not to be confused with complements). Complementisers take a sentence as a complement and indicate its role in the larger sentence.

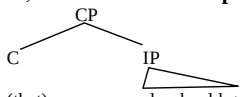
In sentences like (107), no complementiser appears, but it is still possible to tell that the underlined constituents are subordinate clauses. Firstly, they act like complements of the verbs *think* and *say* (notice the incompleteness of utterances like **Mervyn thought* and **Agatha said*). Furthermore, the underlined constituents can be rephrased as in (108) with no difference in meaning. Thus, (107) and (108) have exactly the same structure. They differ only in that, in (107), the complementiser *that* is not pronounced.

(107) a. Mervyn thought Georgiette was a good drummer.
b. Agatha said Egbert should go home.

(108) a. Mervyn thought that Georgiette was a good drummer.
b. Agatha said that Egbert should go home.

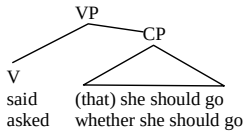
The syntactic structure assumed for subordinate clauses is (109). The complementiser heads its own phrase, known as a **Complementiser Phrase**, or **CP**. The complementiser stands in the head position, known as **C** or **Comp**.

(109)

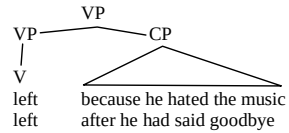


The following trees illustrate various uses of CPs, (a) as a complement of a verb, (b) a modifier of a VP, (c/d) as a complement to a noun/ an adjective. There are many other uses of CPs, but the trees below suffice in giving you an idea of the possibilities.

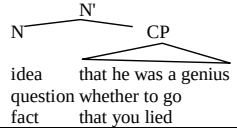
(110) a.



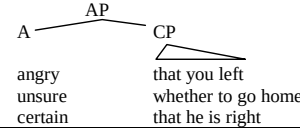
b.



(111) a.



b.



O. Draw trees for the following sentences.
a. She said John lied. b. They asked if he can sing. c. I fell asleep because I became bored

P. What type of constituent is *so* acting as a proform for in each sentence below?
a. *I hope/think/said/believe so.* b. *He used to be fond of her but he doesn't seem so now.*

3.3.2 Question formation

3.3.2.1 An analysis for *yes-no* questions

Complementisers are also involved with the formation of questions. To see this, consider the following two types of questions.

- ***Yes-no* questions**. These can be answered *yes* or *no*. Examples are given in (112).
- ***Wh* questions**. These are questions introduced by a ***wh*-phrase**. A *wh*-phrase is a phrase headed by a question word. Examples of *wh*-phrases are: *who, where, when, what, how, whose book, which person, at what time*. *Wh* questions are sometimes called 'constituent questions', because one is asking about the identity of a particular constituent in the sentence. Examples *wh* questions are given in (113).

(112) a. Are you the boss? b. Can you dance? c. Do you collect books?

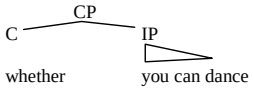
(113) a. Who are you? b. Which book/what did you read? c. How did you know?

Notice that both types of question involve **subject-auxiliary inversion**. The auxiliary appears before the subject, giving us the impression that subject and auxiliary have been 'inverted' or have changed places. If there is no auxiliary, we need *do* support, cf. (112)(c) and (113)(c). *Wh* questions differ from *yes-no* questions in that there is a *wh*-phrase, which is placed before the auxiliary. The above remarks describe most aspects of question formation, but the idea that it involves simply swapping the positions of the subject and auxiliary does not describe what really goes on when a native speaker forms a question. Consider the following alternative ways of saying the same thing.

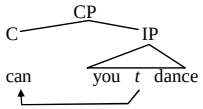
(114) a. She asked whether I can dance.
b. She asked 'can you dance?'
c. *She asked whether can I dance. *She asked whether can you dance?

These involve an 'embedded question', a question which is a subordinate clause. Notice that the complementiser and subject-auxiliary inversion are in what linguists call 'complementary distribution': there may be either a complementiser or inversion, but not both. A standard way of explaining this is to assume that the subject-auxiliary inversion involves moving the auxiliary to the complementiser position. If the C position is already occupied by a complementiser, the verb cannot also occupy that position. The two possible types of embedded question would then receive the following analyses.

(115) a.



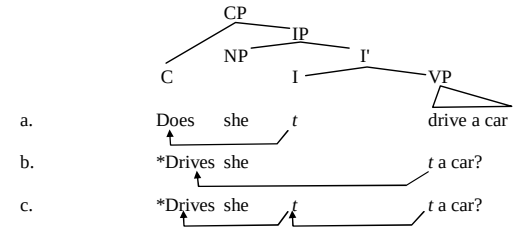
b.



The structure in (115)(a) is the type of CP structure already familar to you. A *yes-no* question has the structure in (115)(b). This tree says that the auxiliary moves to the C position. The element *t* in the tree stands for **trace**, an unpronounced copy of a moved element.

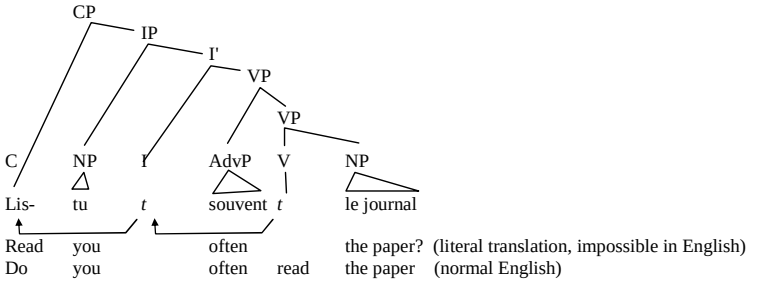
A simple answer to the question of why *do*-support is needed in forming questions is as follows. The tree in (116) gives three possible methods of forming *yes-no* questions: (a) gives the method that English uses: insert an auxiliary under I and move it to C. (b) and (c) illustrate two methods which are impossible in English. The strategy in (c) is to move the verb first to I and then to C. This is impossible in English because some (as yet undiscovered) peculiarity of English prevents English lexical verbs from moving to I. (b) involves moving the verb out of its original position in VP directly to the C position, bypassing I. This option is impossible because research on constructions where a word moves from one position to another (known as 'head movement') has led to the conclusion that a word can only move into a position in the next highest phrase. This means that the verb *drive* in (116) can only reach C if it moves to I first. However, we just noted that this is not possible in English.

(116)



(117) turns (103) into a *yes-no* question. A French lexical verb behaves just like an English auxiliary in such questions. French does not require any such device as *do*-support, since all verbs move to I. Thus, it appears reasonable to assume that the failure of English lexical verbs to move to the I position is responsible for the impossibility of forming questions without *do*-support in English. What we have said about French applies to older forms of English. See Radford 1997a on this.

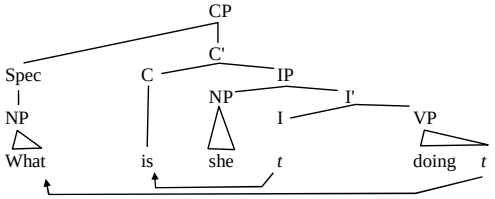
(117)



3.3.2.2 *Wh*-questions

Let us briefly look at the syntax of *wh*-questions. Essentially, these are like *yes-no* questions, except that the specifier position of CP is occupied by the *wh*-phrase. It is assumed that the *wh*-phrase reaches the specifier position of CP by movement. (118) gives an example of this. In this sentence, the pronoun *what* is interpreted as the complement of the lexical verb *do*. In the theory explained here, this is reflected by the assumption that there is a trace in the position where we would normally expect to find the complement of the verb.

(118)



Essentially, it is assumed that the type of question in (118) is derived from the type of question uttered by the second speaker in the dialogue in (119):

(119) SPEAKER 1: *She is doing a course on how to talk to vegetables.*
SPEAKER 2: *She is doing WHAT?!*

Such questions are known as '*wh*-in-situ questions'. (The term is based on Latin *in situ* 'in position', and refers to the fact that the *wh*-phrase stays in its original position.) In English, such questions are used when the speaker is expressing surprise. In some languages, such as

French, *wh*-in-situ questions are one of the normal ways of asking a question, and do not carry the connotations of surprise that they do in English. It is worth mentioning that, in English, we also find *wh*-phrases *in situ* when there is more than one *wh*-phrase, since the specifier position of CP can only accomodate one such element:

(120) a. Who said what at the meeting?
b. Whom did you meet when?

3.3.3 Relative clauses

We have now seen several uses of the C position. We can now state that *the general function of C is to indicate the role of the IP in a larger context*. For instance, we saw complementisers which signal that the IP is part of a larger IP. Moreover, the choice of elements occurring in C or its specifier position, and indeed whether these positions are occupied at all, determines whether the IP should be seen as a statement or question (a choice which has clear consequences for how the IP relates to the larger discourse). For instance, we know that if a verb occupies the C position, the sentence is interpreted as a question. We now examine another phenomenon involving a CP: **relative clauses**, CPs functioning as modifiers within a NP. Examples are given below.

(121) a. This is [the artist [who(m) I met]$_{CP}$]$_{NP}$
b. This is [the artist [(that) I met]$_{CP}$]$_{NP}$
c. The animal bit [the person [that fed it]$_{CP}$]$_{NP}$.
d. [The person [whose house you blew up]$_{CP}$]$_{NP}$ is hardly going to give you flowers..
e. This is [the place [where we will put the flower pot]$_{CP}$]$_{NP}$

The underlined elements are called **relative pronouns**. They involve either *wh*-phrases or the complementiser *that* (as in its other uses as a complementiser, *that* can be omitted, unless it refers to a subject, cf (b), (c)). Relative pronouns serve to introduce the relative clause, and at the same time act as a proform for the N which heads the NP modified by the relative clause. The internal syntax of relative clauses is partly like that of *wh*-questions. The relative pronoun (or the constituent of which it is a part, cf. *whose house* in (121)(d)) occupies the specifier position of CP. However, relative clauses differ from *wh* questions in that in the former there is no movement of an auxiliary from I to C (**this is the artist whom did I meet*).

In this course, you need not learn the internal syntax of relative clauses, but it is worth understanding the distinction between **restrictive** and **non-restrictive** relative clauses, since it builds on several concepts introduced in this text. The easiest way to understand the distinction is to look at examples such as those below.

(122) a. *Avoid all Australians, who drink too much beer.* (NON-RESTRICTIVE. Implies that all Australians drink too much beer.)
b. *Avoid all Australians who drink too much beer.* (RESTRICTIVE. If you encounter an Australian who drinks too much beer, avoid him or her.)

(123) a. *My piano, which I bought recently, is out of tune.* (NON-RESTRICTIVE. My piano is out of tune, and I bought it recently.)
b. *My piano which I bought recently is out of tune.* (RESTRICTIVE. Implies that I have more than one piano. The relative clause signals that I am talking about only one of my pianos, namely the one which was bought recently.)

(124) a. *My mother, whom I saw recently, is ill.* (Similar remarks to those in (123)(a).)
b. **My mother whom I saw recently is ill.* (Similar remarks to those in (123)(b), except that this sentence makes no sense, because most people only have one mother.)

(125) a. *The houses on Elm Street, which are state-owned, will be renovated soon.* (NON-RESTRICTIVE. Implies that the state owns all houses on Elm St.)
b. *The houses on Elm Street which are stated-owned will be renovated soon.* (RESTRICTIVE: Of the Elm St houses, only the state-owned ones will be renovated.)

Restrictive relative clauses are so called because they seem to *restrict* (i.e. make smaller) the set of entities to which the NP could possibly refer. By contrast, non-restrictive relative clauses tell us nothing about which specific entities are referred to. They just give additional information about NPs whose reference is already established. There are differences in form between the two types of relative clauses. Firstly, non-restrictive relative clauses are separated from the rest of the sentence by a slight pause (represented by a comma in written English). Secondly, the non-restrictive type can only appear with a *wh*-relative pronoun. Thus, there are no non-restrictive interpretations of relative clauses introduced by *that* or with no relative pronoun: the relative clause in *the books (that) you found* must be restrictive.

Why do the two types of relative clause differ in meaning in the way they do? To answer this, we must understand **scope**. The scope of an expression is the part of the sentence which the expression gives information about. For instance, *old* in (126) has two different scope possibilities, as indicated. In (126) and many other cases, the scope of an expression normally corresponds to the constituent it directly combines with in syntax.

(126) *The old men and women were invited.*
a. *old* has scope over *men*: [$_{NP}$ the [$_{N'}$ old [$_{N'}$ men]] and [$_{N'}$ women]]
b. *old* has scope over *men and women*: [$_{NP}$ the [$_{N'}$ old [$_{N'}$ men and women]]]

The difference between restrictive and non-restrictive relative clauses arises from the scope possibilities available to the relative clause and the determiner. Taking (126) as an example, consider (127). This claims that *the* has scope over *houses on Elm Street* in (a) and over *houses on Elm street which are state-owned* in (b). The relative clause has scope over *the houses on Elm Street* in (a) and over just *houses on Elm street* in (b).

(127) a. [$_{NP}$ [$_{NP}$ the [$_{N'}$ houses on Elm Street]] which are state-owned] NON-RESTRICTIVE
b. [$_{NP}$ the [$_{N'}$ [$_{N'}$ houses on Elm Street] which are state-owned]] RESTRICTIVE

Notice that *the houses on Elm Street*, taken in isolation, refers to the entire set of houses on Elm Street.[12] This is exactly the constituent that the relative clause modifies, so we can now see why (a) suggests that all the houses on Elm Street are state-owned.

In (b), the determiner still forces reference to the entire set of entities described by the N' in the determiner's scope. But now N' (*houses on Elm Street which are state-owned*) is a more specific type of entity than the N' in (a). The reason for this is clear: each modifier added to an expression makes it unusable in describing cases where the modifier does not apply. The interpretation is exactly like *the state-owned houses on Elm Street*.

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[12] This is clearly due to the determiner, since the same NP need not refer to all houses on Elm Street if we use a determiner other than *the* (cf. *some/most/several houses on Elm Street*) or no determiner (*strange noises were heard from houses on Elm Street*).

5. Index

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