Introduction to Linguistics

Manfred Sailer

Syntax

1: Introduction

May 2023

Syntax

- 1. Introduction
- 2. Clauses
- 3. Words and parts of speech
- 4. Constituents
- 5. Grammatical functions
- 6. Comparing English and German syntax

What is syntax?

Syntax and semantics

Syntax: word order and word grouping

Semantics: meaning

Using the same words but a different order or grouping can change the meaning of an utterance

Alex met Chris. - Chris met Alex.

Alex took a picture of Kim. Kim took a picture of Alex.

Alex saw [someone with a telescope].

Alex saw [someone] with a telescope.

	e syntactically well-formed/grammatical sentences that desensible) meaning.
	Colourless green ideas sleep furiously.
We can und	erstand utterances even if they are not grammatical.
	*me bought dog.

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IntroLing: Syntax

Show: There can be words that have no (independently identifiable) meaning but that are needed in a sentence.

Alex waited *(for) Kim.

Alex awaited (*for) Kim.

Alex gave a book *(to) Kim.

Alex gave Kim a book.

Alex is a teacher.

*Alex teacher

Syntactic phenomena

- Syntactic structure
- Word order
- Dependencies:
 - > agreement (German: Kongruenz)
 - > government (German: Rektion)
 - > coreference (German: Koreferenz)

Agreement in English

Subject-verb agreement:

I am/*are/*is happy.

You/ We *am/are/*is happy.

Alex *am/*are/is happy.

- Subject and finite verb agree in person and number
- Only visible with a few tense forms and verbs

Determiner-noun agreement:

- Noun and determiner agree in number
- Only visible with some determiners (this, that)

this/*these book

*this/these books

Government

A word can determine the form of another element in the clause:

Alex waited for Kim/*Kim. -> the verb wait governs a for-phrase.

Alex awaited *for Kim/Kim/them. -> the verb await governs a phrase in the accusative

I am proud of/*about my students.
I am happy *of/about the results.

The adjective proud governs an of-phrase.

The adjective happy governs an about-phrase.

Alex will call/*calling/*called Kim.

Alex is *call/calling/*called Kim.

Alex has *call/*calling/called Kim.

Auxiliaries govern the form of the verb following them: will governs the base form, progressive be governs the -ing form, perfect have governs the past participle.

Coreference

Two elements refer to the same thing. This is often marked formally.

The students did their homework.

Notation to indicate coreference:

[The students]_i did their_i homework.

*[The girl]_i did *their_i/*my_i/her_i homework

Coreference is indicated by expressions that have the same person, number, and gender properties.

Syntax: Summary

- Syntax describes the rules for combining words into phrases and sentences.
- Syntactic structure
- Syntactic dependencies: agreement, government, coreference

References

Anderson, Catherine, Bronwyn Bjorkman, Derek Denis, Julianne Doner, Margaret Grant, Nathan Sanders & Ai Taniguchi. 2022. *Essentials of Linguistics* (2nd ed) Hamilton: eCampusOntario.

Dawson, Hope & Michael Phelan (eds.). 2016. *Language files*. Columbus: Ohio State University Press 12th edn.

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2: Clauses

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Key terms: First approximation

Alex greeted Chris.

Kim said that Alex greeted Chris.

Proposition: A content that can be true or false

Sentence: an utterance that, for declarative sentences, expresses a

proposition.

Clause: Subject + Predicate combination

Predicate:

1) what a subject combines with to form a clause: greeted Chris.

2) the lexical item that needs a subject: greeted

Arguments:

Elements in a clause required by the (lexical) predicate

Alex greeted Chris.

Kim said that Alex greeted Chris

Classifying sentences (=clauses that are indepedent utterances)

Declarative: can be true or false

Alex called.

Interrogative:

1) yes/no question: Did Alex call? (inquires whether the asked proposition is true or fales)

2) content question (wh-question): Who called? (inquires for a semantic slot in a proposition)

Imperative: Open the door (please)!

(Speaker requires the addressee to do something)

Classifying sentences and clauses by complexity

Simple sentence/clause: only 1 clause

Kim called.

matrix clause

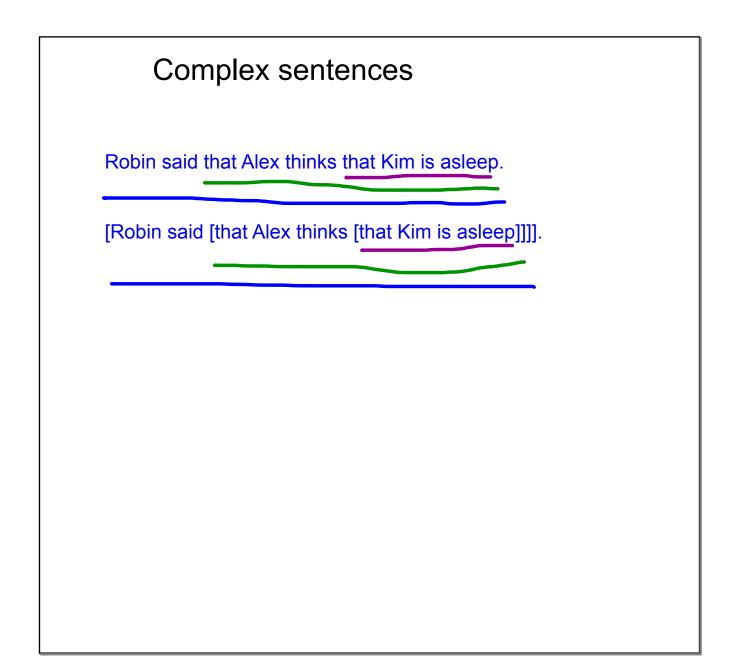
Compound sentence/clause: at least 2 clauses, connected by and/or/but/...:

Kim called and Alex wrote a text message.

Complex sentence/clause: a clause is contained (embedded) within another clause

embedded clause

[Alex thinks [that Kim called]].



Classifying clauses

We also find embedded declarative, interrogatives (and imperatives):

Alex wonders who called.

Alex thinks that Kim is a genius.

Alex knows that Kim called.

Alex knows who called.

Alex wonders if Kim called.

Alex requires that Kim be home at eight.

Some other types of embedded clauses

relative clause

The book [that Alex is reading] is really interesting.

The students read the paper carefully [before they wrote the summary].

adverbial clause

[If the house had been built properly], it would not have collapsed. if clause

Sentences: Summary

- Sentences as largest unit of syntactic description
- · Matrix and embedded clauses

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3: Words and parts of speech

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Word boundaries

Usually, words are separated by spaces, but:

- Complex word with space: text book
- One orthographic word, two syntactic words: cannot
- Clitics: don't (do not), I'll (I will)
- Possessive 's: Pat's

Classfying words: Parts of speech

major/lexical word classes:

- · example classes: noun, verb, adjective
- open class: new words can enter into these classes
- membership can be defined by tests
- inventory changes when the world changes

minor/functional word classes

- · example classes: pronoun, article, auxiliary
- · closed class: no new words enter into these classes
- · elements of the classes can be listed
- inventory changes when the grammar changes

Nouns (N)

semantic test: refers to an person, object or place

Challenge: nouns refering to events: party

morphological test: can have a plural form

Challenge: some nouns don't have a plural form: linguistics, measles,

rain, ...

... or don't have a singular form: trousers, goggles, headphones, premises, ...

syntactic test: can occur with a determiner: the ____

Verbs (V)

semantic test: refers to an event or process
Challenge: some verbs refer to a state: know;
some nouns refer to an event or process: party

morphological test:

- · verbs have a special form for the third singular present tense
- · verbs have a past tense form

syntactic test:

verbs can be preceded by an auxiliary: ... will ___

Adjective (A) semantic test: describes an object or a person further morphological test: certain affixes: can be turned into an adverb by adding -ly (slowly; exceptions: good -> well; fast -> fast) comparative and superlative (with shorter adjectives): -er, -est (not all adjectives have comparative/superlative: unique, impossible, dead, ...) syntactic test: degree word: quite/very/rather comparative and superlative (with longer adjectives): more , most environments: predicative use: ... is attributive use: the N Challenge: some adjective can only occur in one of these positions: only predicative use: The child is asleep. / *the asleep child. only attributive use: former, sheer, elder, ...

Adverbs (Adv)

semantic test: describes a process or a property; they indicate for example the manner, location, time, duration or frequency.

morphological test:

- derived adverbs have the form A-ly
- comparative and superlative, like adjective: -er/-est

syntactic test:

- degree word: very ___
- comparative and superlative of longer adverbs with: more ___ /most ___

Example sentence

I looked over my mother's shoulder to read the letter; it began, "Dear Cousin Margaret Dawson," and I think I felt hopeful from the moment I saw those words.

(from: Elisabeth Gaskell, My Lady Ludlow.

Projekt Gutenberg: https://www.gutenberg.org/ebooks/2524)

Example sentence

l looked over my mother 's shoulder to read the letter; it began, "Dear Cousin Margaret

Dawson,"

and I think I felt hopeful from the moment I saw those

words.

Example sentence

looked/V

over

my

mother/N

'S

shoulder/N

to

read/V

the

letter/N;

it

began/N,

"Dear/A

Cousin/N

Margaret/N

Dawson/N,"

and

think/V

П

felt/V

hopeful/A

from the

moment/N

Т

saw/N those

li iUSE

words/N.

Minor categories

- · all members can be listed
- · usually, syntactic characterization of the environment

Determiner

Pronoun

Auxiliary

Preposition

Conjunction

Complementizer

Function words in major word classes

Determiner

```
precedes a noun: ____ N
    article: the, a
    demonstrative determiner: this, that
    possessive determiner: my, your, their, ...
    possessive 's: [my cat]'s toy
    quantificational determiner: many, few, no, some, ...
    interrogative determiner: which, whose
```

Pronoun

• Can occur as subject: ___ V.

• Can be the answer to a question who...?/what?

personal pronoun: I, me, you, we, ...

demonstrative pronoun: this, that

interrogative pronoun: who, what

NICE properties:

Auxiliary

Negation: Tinite form can be followed by not to negate a sentence:

Alex reads (*not) a book. Alex will not read a book.

Inversion: Auxiliary precedes the subject in a yes/no question:

*Reads Alex a book? Will Alex read a book?

Contraction: There is a contracted form of the auxiliary+negation:

won't, can't, isn't, ...

Elipsis: Auxiliary can be stand alone in eliptic construction:

Alex will read a book, and Kim will as well.

Alex wants to read a book, and Kim wants *(to) as well.

Additional test: Auxiliaries occur in question tags

The students will read, won't they?
*The students didn't read, read they?

Subclasses of auxiliaries

modal auxiliaries: will, can, must

- · only have finite forms
- no third singular present tense -s
- govern the base form

non-modal auxiliaries: be, have, do



(not fully clear if they are a major or a minor part of speech)

semantic test: a preposition related two entities according to place, time, etc.

morphological test: prepositions do not show any inflection in English.

syntactic test: prepositions are typically followed by a group of words that contains a noun.



Conjunctions combine expressions of the same syntactic category simple conjunctions: and, but, or, nor conjunctions with two parts: both ... and, either ... or, neither ... nor

Complementizers/subordinators (Comp)

Complementizers are function words at the beginning of embedded clauses.

Finite declaratives clauses: that

Finite interrogative clauses: if, whether

Function words in major word classes

There are function words that can stand in the same syntactic environments as some content words or phrases built around content words or prepositions:

- Auxiliaries are special, but they are still a subclass of verbs
- Function words that are adverbs:
 - > temporal: then, now, when
 - > frequency: often
 - > locative: there, here, where
 - > manner: how
 - > degree: quite, very

Example sentence

I/Pron looked/V over/P my/Det mother/N 's/Det

shoulder/N to/Aux read/V the/Det

letter/N;

it/Pron began/N,

"Dear/A Cousin/N Margaret/N Dawson/N," and/Conj I/Pron

think/V I/Pron felt/V

hopeful/A from/P the/Det moment/N

I/Pron saw/N those/Det

those/Detwords/N.

Summary

- words
- · major and minor parts of speech
- · different inventories of parts of speech
- for corpora:
 - > called: tagset
 - > widespread for English: the tagset of the British National Corpus: http://www.natcorp.ox.ac.uk/docs/c5spec.html

References

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4: Constituents

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Constituents

Sentences are not just strings of words, but there are groupings of words!

- 3 types of tests:
- 1) replacement: comprises pronominalization, answer
- 2) displacement: comprises movement, it-cleft
- 3) coordination: not in our reader

The student was reading a book in the library.

Displacement

The student was reading a book in the library.

Is a book a constituent?

It is [a book] that the student was reading in the library.

A book, the student was reading in the library.



Is in the a constituent?

*It is [in the] that the student was reading a book library.



*[In the], the student was reading a book library.

Is reading a book a constituent?

It is [reading a book] that the student was in the library. [Reading a book] the student was in the library.



Is the student was a constituent?

*It is [the student was] that reading a book in the library.

Two movement test:

- Topicalization/fronting
- It-cleft

[The student] was [[reading [a book]] [in [the library]]].

Replacement

by pronouns, "pro-forms"

[[The student] was [[reading [a book]] [in the library]]].

The student was reading it in the library.

rather use a pronoun than a name for replacement!

She was reading a book in the library.

The student was reading a book there.

do so-test: any verbal constituent

The student was reading a book in the library,

... and the lecturer was doing so, too.

... and the lecturer was doing so at home.

[The student] was [[reading [a book]] [in [the library]]].

Question answer

1) Single constituent answer:

What was the student reading in the library? The book.

Where was the student reading the book? In the library.

Where was the student reading? *The book in the library.

What was the student doing? Read(ing) the book in the library.

2) Full-clause answer with pro-form for a verbal constituent:

Who was reading the book in the library? The student was.

Note: question test as replacement + displacement

If you take a sentence, you can usually form wh-question for many constituents by:

- replacing the constituent with a wh-constituent
- fronting it
- for sentences without an auxiliary: add do
- for non-subject wh-constituents: reorder subject and auxiliary.

Alex read a book [about syntax].

[About what] did Alex read a book?

Constituent structure for complex verb forms

Alex will read a book.

Alex will [read a book]

Note!! will read does not form a constituent:

Displacement test:

It is [read a book] that Alex will.

* It is [will read] that Alex does a book

Replacement test:

Alex will read a book, and Chris will do so, too.

*Alex will read a book, and Chris does so a newspaper, too.

Coordination

symmetric coordination: A and B = B and A

The student and the lecturer were reading a book in the library.

= The lecturer and the student were reading a book in the library.

either ... or; both ... and

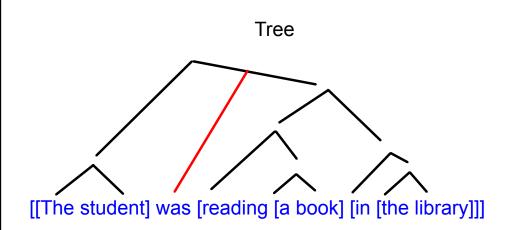
Both the student and the lecturer were reading a book in the library.

Both the lecturer and the student were reading a book in the library.

Non-symmetric coordination:

The student was reading a book and the lecturer, too.

*[The student] and [the lecturer was reading a book], too.



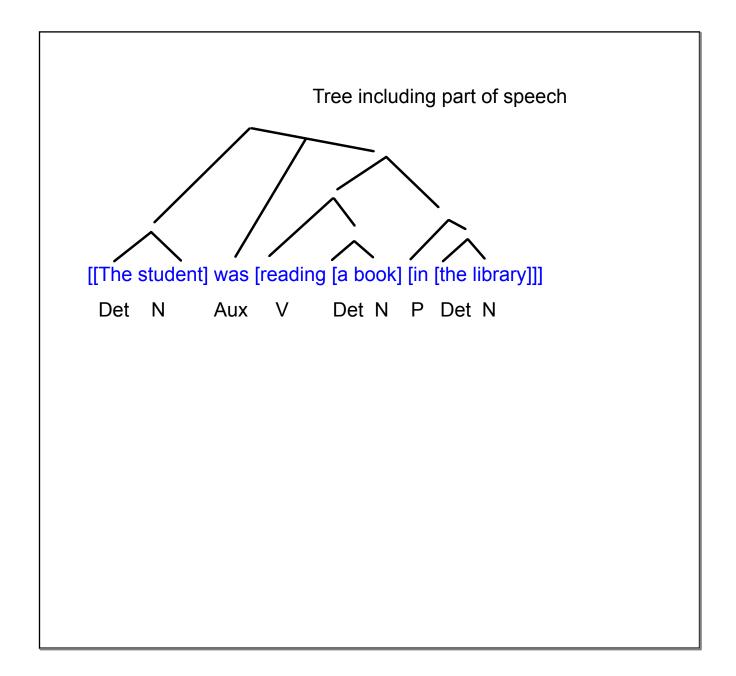
Evidence for combining the finite auxiliary with the verb phrase?

If there is another auxiliary, we can apply our tests:

The student will be reading a book in the library.

It is [be reading a book in the library] that the student will.

The student will [be reading a book in the library], and the lecturer will do so, too.



Phrasal syntactic category labels

NP: constituent

that can be replaced with a personal pronoun

VP: constituent

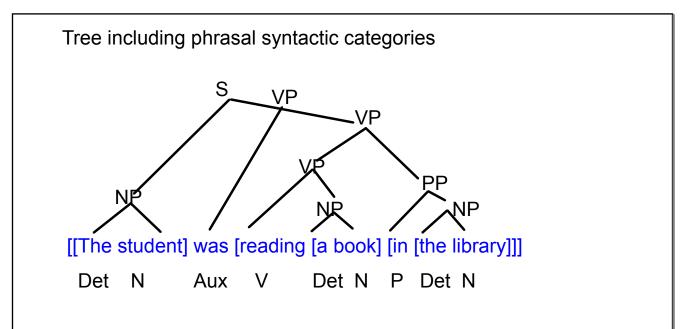
• that can be replaced with do so.

PP: constituent

• that is typically of the form: [P NP]

S (clause): constituent

• that is clausal, i.e. it has at least a subject and a predicate



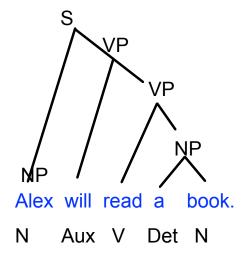
Comment on syntactic structures

- Every syntactic theory will model the results of the constituent tests
- But: syntactic theories differ with respect to
 - > the labels they use,
 - > additional elements that they assume in the structure
- Here:
 - > structures that are as close as possible to the results of the constituent tests
 - > structures like those assumed in the syntax courses in our working group

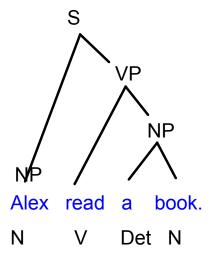
Global structure of English clauses

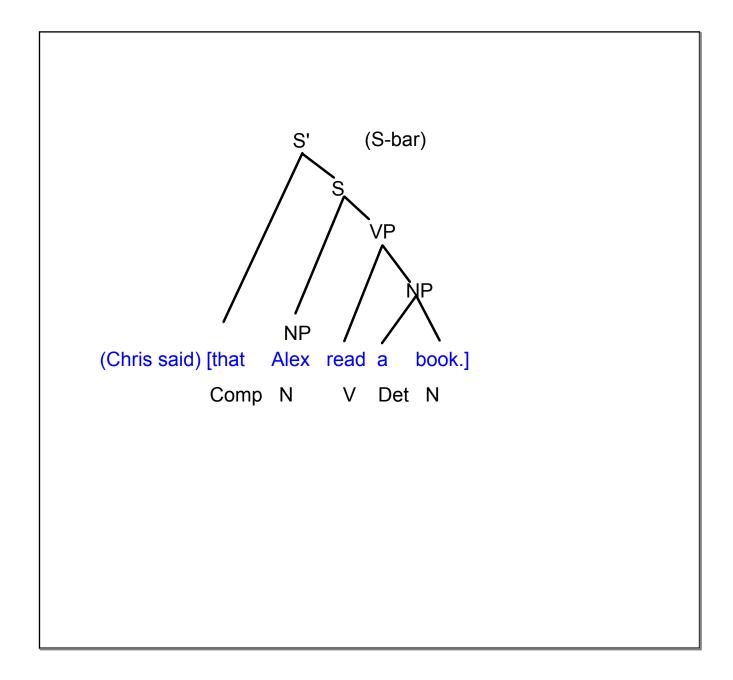
- Clause with auxiliary: Alex will read a book.
- Clause without auxiliary: Alex read a book.
- Clause with complementizer: Chris said [that Alex read a book]
- Yes/no question: Will Alex read a book?
- · Wh question:
 - > Subject: Who will read a book?
 - > Other constituent: What will Alex read?

Clause with an auxiliary



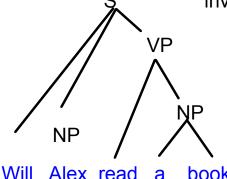
Clause without auxiliary





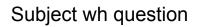
Yes/no question

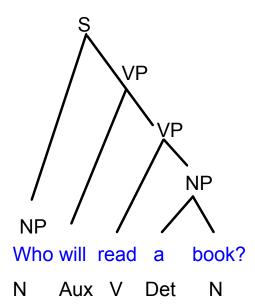
We will assume a special structure for inverted clauses.



Will Alex read book?

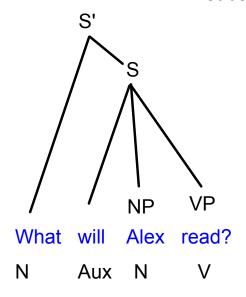
Aux N V Det N





Non-subject wh question

Non-subject wh questions have an inverted substructure.





Alex saw someone with a telescope.

Reading 1: Alex saw someone who had a telescope.

Reading 2: By using a telescope Alex saw someone.

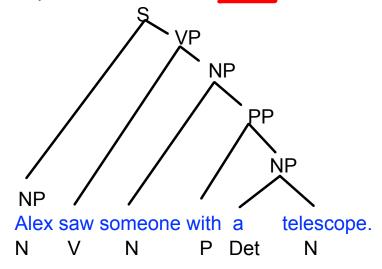
Alex saw someone with a telescope.

Reading 1: Alex saw someone who had a telescope.

Constituent tests:

Displacement: It was [someone with a telescope] that Alex saw.

Replacement: Alex saw them.



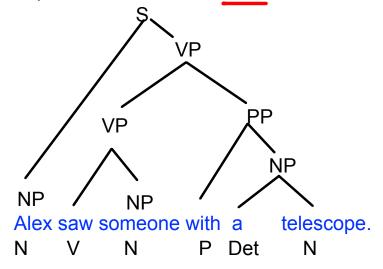
Alex saw someone with a telescope.

Reading 2: By using a telescope Alex saw someone.

Constituent tests:

Displacement: It was [someone] that Alex saw with a telescope.

Replacement: Alex saw them with a telescope.



Example 2: Complex sentence

Alex said that a friend will call before Chris arrives.

Identify the subclauses!

Matrix: Alex said that a friend will call before Chris arrives.

Most deeply embedded: before Chris arrives

Intermediate: that a friend will call before Chris arrives

Sketch of the structure:

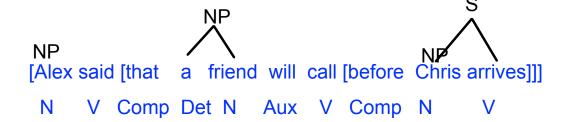
[Alex said [that a friend will call [before Chris arrives]]]

Part of speech assigment

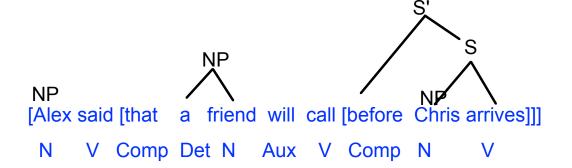
[Alex said [that a friend will call [before Chris arrives]]]

N V Comp Det N Aux V Comp N V

Do small and easy bits first



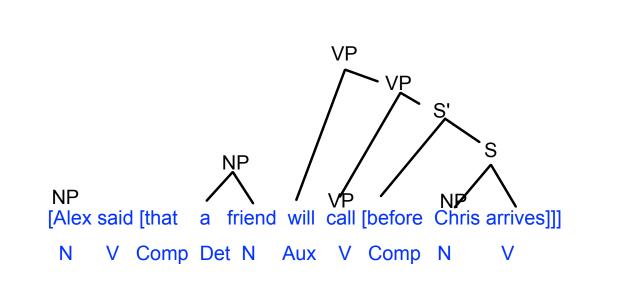
Do the next level of complexity



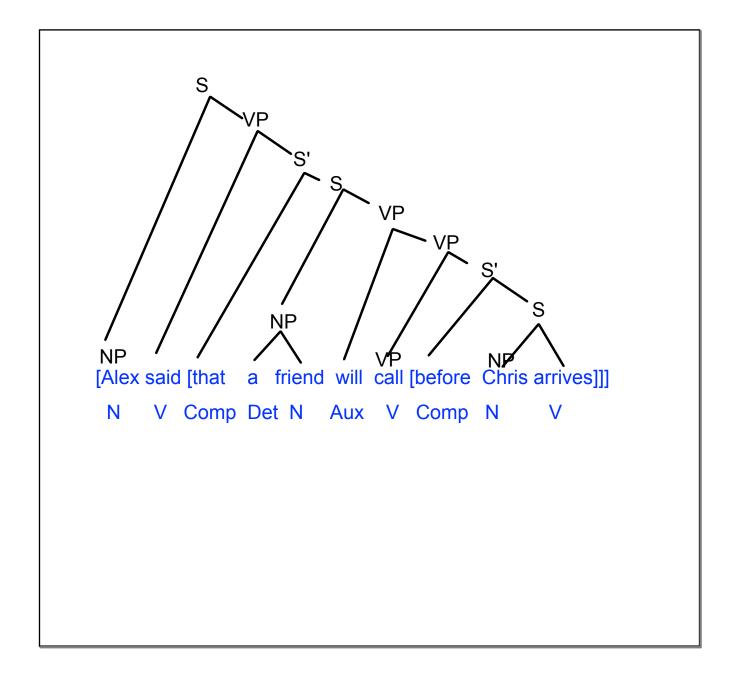
internal structure of will call before Chris arrives?

- call is a VP: ... and a colleague will do so before Robin arrives, too.
- Does the before clause combine with call or with will call? Not clear, structural ambiguity.

Here: we assume "low attachment"



From here on, no further complications...



Summary: Constituents

- Constituent tests identify structures between the clause level and the word level
- Syntactic categories for phrasal units
- Example structures for various kinds of clauses
- Examples for some complex structures

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5: Grammatical functions

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Grammatical function in this class

- Head
- Complement
- Adjunct
- Specifier

Head of a constituent

- most important word in a constituent
- semantic test for head: the constituent refers to the same type of thing as the head.
- morphosyntactic test: the morphosyntactic properties of the head determine those of the constituent.
- syntactic test: the head determines which other elements can be in the constituent

Phrasal syntactic category labels

NP: constituent

- whose head is a noun
- that can be replaced with a personal pronoun

VP: constituent

- · whose head is a verb
- that can be replaced with do so.

PP: constituent

- whose head is a preposition
- that is typically of the form: [P NP]

S (clause): constituent

- · whose head is a verb
- that is clausal, i.e. it has at least a subject and a predicate

Specifier of a constituent

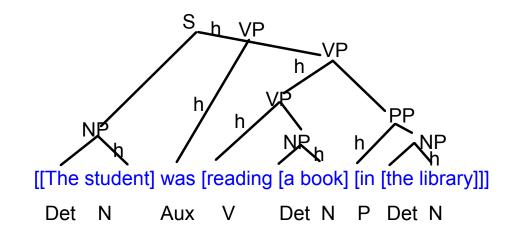
- At most one specifier per head
- · At the left periphery of the constituent
- The head determines whether there is a specifier or not
- · Convention in class:
 - > NP: determiner is specifier
 - > S: subject is specifier

Complements vs adjuncts... of heads!

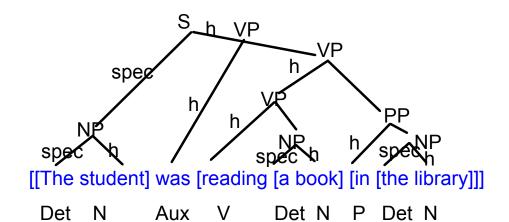
- Adjuncts are optional, complements can be obligatory
- Head-specific relation between the head and the dependent
- Head determines
 - > the form of the argument, but not of the adjunct.
 Alex was [waiting [for Kim]/ *Kim]
 - > the number of arguments, but not of adjuncts. Alex ate ([an apple]) ([in the park]). Alex devoured *([an apple]) ([in the park]). Alex dined *[an apple] ([in the park]).
- Relative order: post-head arguments are closer to the head than post-head adjuncts
 - *Alex gave yesterday a book to Kim.
 - *Alex gave a book yesterday to Kim.

Alex gave a book to Kim yesterday.

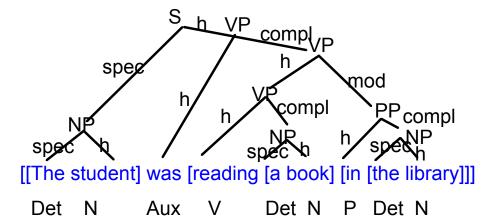
Tree including grammatical functions: Head



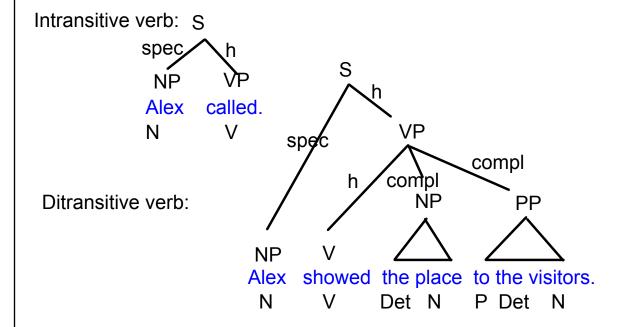
Tree including grammatical functions: Specifiers



Tree including grammatical functions: Complements and modifiers



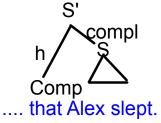
Structures for different types of verbs



Grammatical functions in additional structures

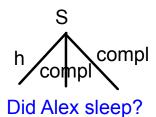
Clauses with complementizer:

Complementizer is the head, S is the complement

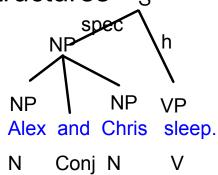


Inverted clauses:

Finite auxiliary is the head, the subject is now a post-head argument, and, therefore, reclassified as complement.



Grammatical functions in coordination structures s



We assume no grammatical function!

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6: English-German Comparison

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References

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Basic word order types

Languages are often classified according to their basic word order in declarative sentences with a transitive predicates (i.e., accroding to the order of subject, predicate (=verb), and direct object.

English (Indo-European): SVO

Hawaiian (Polynesian): VSO

Heluhelu nā haumāna i ka puke.

read the students object-marker the book

'The students read the book.'

German: ?

SOV plus a lot of other syntactic rules!!!

SOV language? Latin, Turkish, Persian, Japanese

English vs. German word order

Apparent similarity:

English: Alex read a book. What has Alex read?
German: Alex las ein Buch. Was hat Alex gelesen?

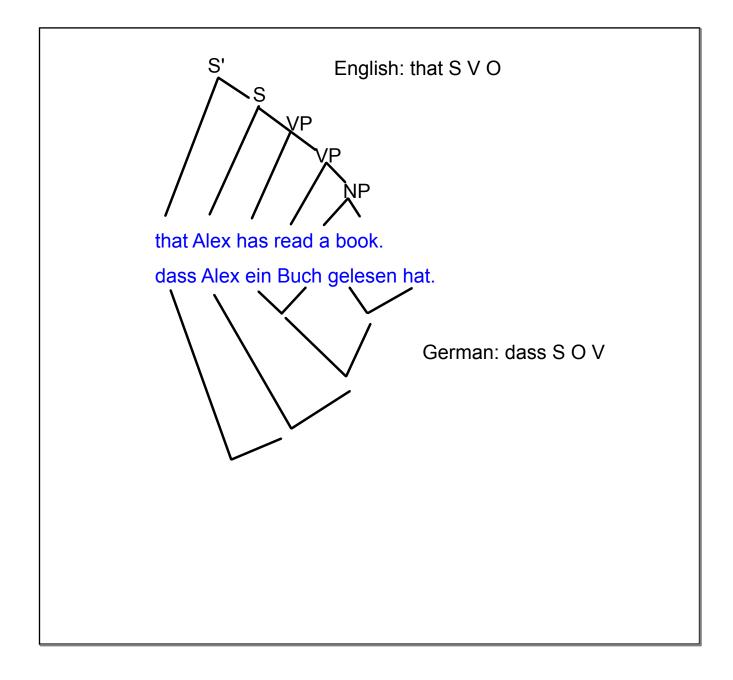
Real Difference:

English: Alex has read a book yesterday.

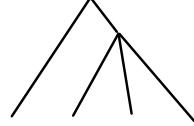
German: Alex hat gestern ein Buch gelesen.

English: Chris said [that Alex has read a book yesterday.]

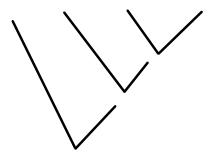
German: Chris sagte, [dass Alex gestern ein Buch gelesen hat.]



English: non-wh questions: X Aux S V O



What has Alex read Das Buch/Was hat Alex gelesen.



German: unembedded clauses: X V_fin S O V

English-German comparison

- English and German have fundamentally different syntactic structure
- ... even though they appear to be similar in some simple, but very frequent cases
- Emphasizing the similarities is heavily misleading!
- English has a rather rigid SVO word order

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IntroLing: Syntax