

Competing Models of Grammatical Description

Computerlinguistik (Seminar SS 2008)

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Grammar: Overview

- Kinds of grammars, views on grammar
- Basic grammatical notions
 - grammatical units: morphemes, words, sentences (clauses)
 - grammatical class: part of speech
 - grammatical paradigms
 - grammatical categories
 - grammatical form vs. grammatical function
 - immediate constituents, phrase structure, constituency vs. dependency

Why Grammar?

- Dealing with language means dealing with (spoken or written) text:

“whatever the purpose or direction of analysis, there has to be grammar at the base. ... The current preoccupation is with discourse analysis, or ‘text linguistics’; and it is sometimes assumed that this can be carried out without grammar --- or even that it is somehow an alternative to grammar. But this is an illusion.

... A text is a semantic unit, but not a grammatical one. But meanings are realized through wordings; and without a theory of wordings --- that is, a grammar --- there is no way of making explicit one’s interpretation of the meaning of a text.”

[Halliday, 1985, pp. xvi-xvii]

Why do Grammar?

- Common preconceptions:
 - It’s boring
 - It’s irrelevant
- But:
 - grammar is the core of any language
 - grammar helps you deal with specialized problems, like e.g., those involved in language comparison
- Goals of this week’s discussion:
 - set the study of grammar in context
 - basic terms

Linguistic Levels

"How many levels?"

Sound

- unit: phonetic
- properties: sounds and phonemes

→ **phonetics** and **phonology**

Sentence, Word

- unit: grammatical
- properties: grammatical categories, structural elements

→ **grammar** or **syntax, lexis**

- properties: meanings

→ **semantics**

Part of a discourse (text, dialogue)

- unit: discourse
- properties: role in overall discourse, marker of relation to other parts of the discourse

→ **discourse, context**

Kinds of Grammar

- Descriptive grammar
- Reference grammar
- Pedagogical grammar
- Prescriptive grammar
- Theoretical grammar
- Traditional grammar

cf. [Crystal, 1997]

Reference Grammars

- English
 - Quirk et al., 1985. A comprehensive grammar of the English language. Longman, London
 - Cobuild, 1990. Collins COBUILD- English Grammar. Harper Collins, London
- German
 - Heidoph et al., 1980. Grundzüge einer deutschen Grammatik. Akademie-Verlag, Berlin
 - Helbig und Buscha, 1988. Deutsche Grammatik. Ein Handbuch für den Ausländerunterricht. VEB Enzyklopädie, Leipzig
 - Weinrich, 1993. Textgrammatik der deutschen Sprache. Dudenverlag, Mannheim

What is a Reference Grammar?

[Quirk et al., 1985]

- Verbs, verb phrase
 - Nouns and determiner
 - Pronouns and numerals
 - Adjectives and adverbs
 - Prepositions and prepositional phrases
 - Sentences
 - Noun phrases
 - Sentence --- Text
- A mixture of terms:
grammatical **units** and grammatical **classes**

Grammatical Terms

- grammatical **units**:
morphemes, words, sentences (clauses)
- grammatical **class**, part of speech
- grammatical **forms**, grammatical paradigm
- grammatical **categories**
- grammatical **functions**

Grammatical Units

Morphemes

unhappy	un-happy	unglücklich	un-glücklich
horses	horse-s	Pferde	Pferd-e
talking	talk-ing	sprechend	sprech-end

- Internal structure of words: **morphology**
 - definition: the smallest meaningful units
 - kinds of morphemes:
 - stem; affix: prefix, suffix
 - free and bound morphemes
 - inflectional and derivational morphology

Grammatical Units

Words

- at the boundary between **morphology** and **syntax**
- how to identify a word?
 - pauses
 - cannot put anything in between
 - smallest unit that can meaningfully stand on its own
- grouped into **word classes** or **parts of speech**
- carry **grammatical categories**

Word classes: parts of speech

- Definition of word classes
 - according to their structural features,
 - e.g., an article signals that the next thing is a noun
- Class membership:
 - Members of a class should all behave in the same way, i.e., a class should be coherent
 - E.g., *jump*, *play*, *shout* all take a 3rd person singular 's' and an 'ed' for past tense verb
- But:
 - irregularities
 - fuzzy boundaries

Word classes: parts of speech

- Fuzzy boundaries: English adjectives
 - (A) occur after forms of *to be*, e.g., *he is happy*
 - (B) occur after articles and before nouns, e.g., *the big train*
 - (C) may occur after *very*, e.g., *very nice*
 - (D) may occur in comparative or superlative, e.g., *more impressive, most impressive*
 - (E) combine with *-ly* to form adverbs, e.g., *quickly*
- Test: *happy, old, top, two, asleep, want*

	A	B	C	D	E
<i>happy</i>	+	+	+	+	+
<i>old</i>	+	+	+	+	-
<i>top</i>	+	+	+	-	-
<i>two</i>	+	+	-	-	-
<i>asleep</i>	+	-	-	-	-
<i>want</i>	-	-	-	-	-

Grammatical Categories

- Forms of a word vary in order to express contrasts in e.g., number, gender, case etc.

- Case:

	German	English	
nominative	<i>mein Hund</i>	<i>my dog</i>	nominative
genitive	<i>meines Hundes</i>	<i>my dog's</i>	(genitive)
dative	<i>meinem Hund</i>	<i>my dog</i>	} oblique
accusative	<i>meinen Hund</i>	<i>my dog</i>	

- Case is a grammatical category

Grammatical Categories

Sentence (clause): **definitions**

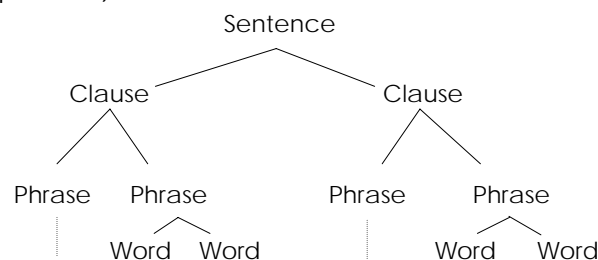
- domain of syntax (Greek: syntaxis = arrangement)
- traditional definition: complete expression of a single thought
- logic: Subject - Predicate
- punctuation (only some languages (!), speech?)
- combinations do not produce a larger (grammatical) unit

cf. [Crystal, 1997]

Grammatical Categories

Sentence (clause): **analyses**

- Sentence – words
- Groupings of words: clauses, phrases (groups)
 - Sentences may consist of clauses; clauses consist of phrases, phrases consist of words (words consist of morphemes):

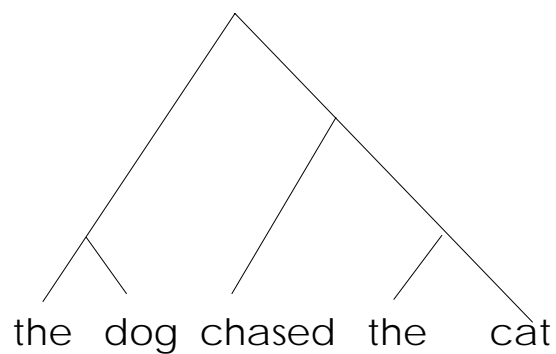


Units smaller than clause

- levels of structure
- at each level: major constituents

example: *The dog chased the cat.*
the dog, chased the cat
(the dog) (chased the cat)
((the)(dog)) ((chased)(the cat))
((the)(dog)) ((chased)((the)(cat)))

Tree Diagram



Phrase structure analysis

- labeled nodes (S, NP, VP, N, V, Det)

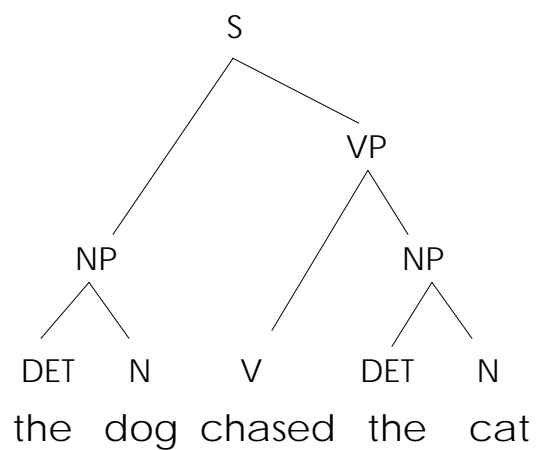
NP: the cat, the dog

VP: chased the dog

N: dog, cat; Det: the; V: chased

[_S[_{NP}[_{DET} the][_N dog]] [_{VP}[_V chased][_{NP}[_{DET} the][_N cat]]]]

Phrase structure tree (Phrase marker)



Grammatical analysis

I saw the man on the hill with a telescope.

N V NP PP PP

NP: noun phrase

PP: prepositional phrase

VP: verb phrase

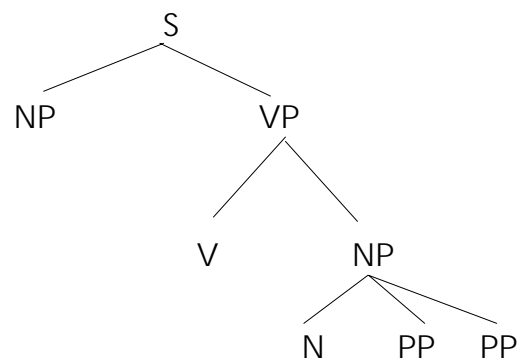
Phrase: characterized by its head (N, V, P)

Grammatical analysis

I saw the man on the hill with a telescope.

N V NP PP PP

(1)

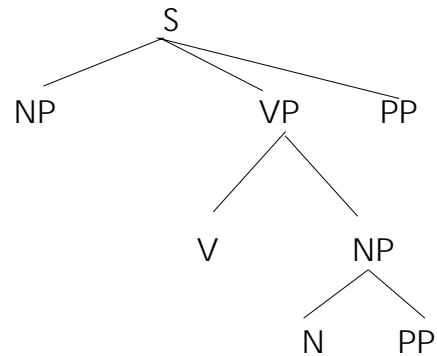


Grammatical analysis

I saw the man on the hill with a telescope.

N V NP PP PP

(2)

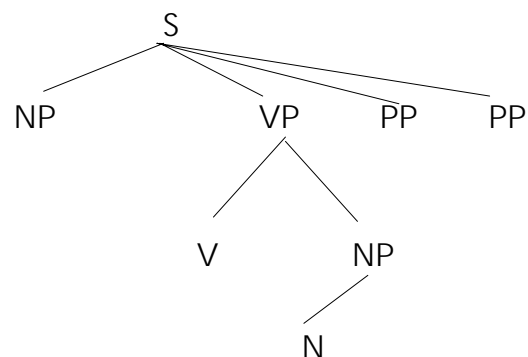


Grammatical analysis

I saw the man on the hill with a telescope.

N V NP PP PP

(3)



Grammatical functions: Tests

substitution test: every element can be substituted by a proform

- Jane wrote her paper last week.
- She wrote her paper last week.
- Jane wrote it last week.
- Jane wrote it then.
- Jane did something to/with/about here paper.

thematization test: every element can be thematized

- The one who wrote a letter was Jane.
- What Jane wrote was her paper.
- It was last week that Jane wrote her paper.
- What Jane did was write her paper.

→ Necessary, but not sufficient conditions, cf.

- This bed hasn't been slept in for years.
- Ärger habe ich dich nicht wollen.

Grammatical functions

Subject

- definition: element of the clause that together with the predicate constitutes the basis of the declarative clause
- how to recognize a Subject?
 - English, German: agreement with the finite verb
 - English: SVO basic word order
 - German: nominative case
- categorial realization: nominal (mostly)

That he came to the party yesterday really surprised me.

Dass er gestern zur Party kam hat mich überrascht.

Grammatical functions

Objects/Complements and Adjuncts → How to distinguish?

- Complement: obligatory, Adjunct: optional
e.g., I suggest that she should come. --- * I suggested...
BUT: I didn't finish, I didn't know
- Complement: related to the Agent, Adjunct: relates to the context of the action/process
e.g., Mary kissed **Bill**. --- Mary kissed Bill **yesterday**.
- collocational potential: complements
e.g., to give **protection, help, support** --- to give (sth.) **quickly**
- test by adding: the element in question must be excluded in at least one class, e.g.,
He vanished --- He vanished **TV** --- He vanished **quietly**.
The kids were watching TV. The kids were watching TV quietly.

Grammatical analysis: functions

I **saw** **the man** **on the hill** **with a telescope.**
Subject Predicate Object Adjunct_PLACE Adjunct_INSTRUMENT

Summary

- Overview: views of grammar, kinds of grammars
- What we find in a reference grammar
- Basic grammatical notions:
 - form and function;
 - grammatical unit,
 - grammatical class,
 - part of speech,
 - grammatical category,
 - grammatical function

Exercises

1. Give some tests for recognizing Subjects in English and German. Apply these tests to the following sentences:
 - I work in the linguistics department.
 - Ich bin ein Berliner.
 - There is a bird in the tree.
 - Es werden heute abend viele berühmte Leute anwesend sein
2. Explain the ambiguity in terms of parts of speech of "round" in the following examples:
 - Mary bought a round table.
 - The car went round the corner.
 - The yacht will round the buoy soon.
 - We walked round to the shop.
 - It's your round.
3. Give an analysis of the phrase structure(s) of the following clauses. How does the phrase structure show that these clauses are ambiguous?
 - She cut the cheese with a knife.
 - She dropped the coffee pot in the study.
4. Give an analysis of the same sentences in terms of function.
5. Analyse the following English sentence and its translations into German in terms of function.
 - If there is a hurricane, you can always see signs of it in the sky for days ahead.
 - Wenn es einen Orkan gibt, sieht man auf See schon Tage vorher am Himmel Anzeichen davon.
 - Wenn es einen Orkan gibt, sieht man das auf See schon Tage vorher.