

Course website

L2 Syntax Lecture 1: The basics of syntax

Robert Truswell

- Follow the link from WebCT
- Includes syllabus, readings, etc.
- Copies of this material also on WebCT

Timetable

- Week 1-6: Syntax on Monday and Friday
- Tutorial on Thursday weeks 2-7 (shared with Semantics) – signup open soon
- Tutorial exercises emailed out Friday before tutorial
- **Do the exercises.** The theory we develop will soon stop making sense if you don't practice using it

Assessment

- Data analysis problem (50%) mid-semester
 - Mainly syntax, may involve some semantics
 - Distributed early-mid October, deadline Nov 8th
- Exam (50%), end of semester 1
 - Syntax, semantics, phonology, weighted more to sem/phon

To contact me

- catch me before or after lectures
- come to DSB room 2.06
- email rtruswel@staffmail.ed.ac.uk
- phone (0131 6)50 3484

Readings

- Required readings for every lecture
- Main textbook: Beatrice Santorini & Tony Kroch, *The Syntax of Natural Language*: <http://www.ling.upenn.edu/~beatrice/syntax-textbook/index.html>
- **Today:** Santorini & Kroch chapters 1 and 2

Readings are:

- on the web (WebCT and, where possible, course website)
- in the filing cabinet in DSB G.01
- in the Main Library

Do the readings!

Course outline

- Today: the basics
- Rest of course: the major ideas in modern syntactic theory
 - Lexical relations (elementary trees, θ -theory)
 - Phrase structure (X-bar theory)
 - Functional structure (CP, IP, DP)
 - Movement (e.g. in passives)
 - Universal Grammar

L1 to L2

You'll have already glimpsed some of the tools we'll use, in L1:

- Foundations of grammar
- Morphology and syntax

Parts of the early lectures will feel like review. If so, good!

Today

- What is **syntax**?
- What is a **grammar**?
- **Constituency**: tests and representation

What is syntax?

...

Phonology: patterning of sounds in a language

Morphology: building complex words

Syntax: how words are put together into meaningful combinations

Semantics: the structure of meaning

...

What is syntax?



An introduction to Chomskyan generative grammar

Not just presenting a static picture of a theory – the theory will grow

Chomsky and Universal Grammar (UG)

Chomsky's most exciting claim:

- Humans have an innate language faculty
- We need this, and use this, to learn language
- This forces all languages to be similar in certain ways

More of this in the final lecture

What is grammar?

Prescriptive grammar: statements about how people should speak.

E.g. **don't strand prepositions**

BAD: "We do not even know which side the Basra police are on"

GOOD: "We do not even know on which side are the Basra police" (The Guardian, 21/9/05)

Style guidelines for the "correct" use of language

What is grammar?

Descriptive grammar: observations and generalizations about how people actually use language

- We don't know which side the police are on
- ? We don't know on which side the police are
- ?? We don't know on which side are the police
- * We don't know are on which side the police

We are interested in **description**, not prescription

Generative grammar

- A generative grammar is an algorithm for generating **all** and **only** the grammatical sentences in a language

S → NP VP
VP → V (NP)
NP → (Det) N
Det → {a | the}
N → {dog | cat | monkeys}
V → {surprised | chased | slept}

Goals of generative grammar

What is **a** generative grammar?

- A formal description of a language

Ultimate goal of generative grammar?

- A description of what's in people's heads to allow them to **learn** or **know** a language

Quick recap

- Description, not prescription
- Generative grammar
 - Explicit description of a language
 - Cognitive basis
 - Aim for maximally accurate, simple, and general descriptions

Basic elements of generative grammar

S → NP VP
VP → V (NP)
NP → (Det) N
Det → {a | the}
N → {dog | cat | monkeys}
V → {surprised | chased | slept}

Two building blocks:

- **rules**
- **chunks** (constituents)

Rules

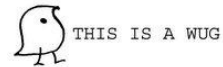
Do people even use rules?

Alternative hypothesis: people memorize everything.

Evidence: novel utterances

- The wug test
- Novel sentences
- The memorization problem

The wug test



"... now there are two of them.
There are two..."

"Wugs!"

How big is a language?

- How many (morphologically simple) words does an average speaker of English know? **BUT**
- How long is the longest sentence in English?
- How many sentences are there in English?
- How long would it take you to rote-learn all the sentences of English?

Chunks

So people must use rules.

But do these rules really work over chunks (e.g. NP, VP)?

- Is language **structure-dependent**?
- Famous example that it is: the structure-dependent nature of question formation

A Principle: structure-dependency

Syntactic operations depend on **constituent structure**.

Example: yes/no questions

- The girl **is** tall
- **Is** the girl tall
- [The dog that **is** in the garden] **is** barking?
- ***Is** [the dog that in the garden] **is** barking?
- **Is** [the dog that **is** in the garden] barking?

Constituents

People have rules that do things, and those rules do things with chunks.

We call these chunks **constituents**

Constituency tests: ways of working out constituency

- **substitution, coordination, question and answer, topicalization, it-clefts, ...**
- Review at end of lecture

Substitution

If a single word can substitute for a string of several words, then

- the string is a constituent...
- ...which is of the same syntactic category as the single word

Substitution: an example

- (1) The man chased the dog
- (2) The man chased it
- (3) He chased it

- "the" and "dog" form a constituent
- "the" and "man" form a constituent

Substitution and constituency: a more interesting example

- (1) He groomed the dog with a comb
 - (2) He groomed it with a comb
 - (3) He groomed the dog with the brown fur
 - (4) *He groomed it with the brown fur
[meaning the dog which has brown fur]
- "the" and "dog" form a constituent in (1)
 - but not in (3)

Coordination

(Warning: Less reliable)

If a string of words can be joined to another string of words by the conjunction *and*, then

- both strings of words are constituents
- they are of the same category

Coordination

- (1) The man chased the dog
 - (2) [The man] and [the woman] chased the dog
 - (3) The man chased [the dog] and [the cat]
 - (4) The man [hit the dog] and [stroked the cat]
- "the" and "man" form a constituent
 - "the" and "dog" form a constituent
 - "hit", "the" and "dog" form a constituent

Coordination

- (1) The man chased the dog
 - (2) [The man chased the dog] and [the woman stroked the cat]
 - (3) *The [man chased the dog] and [woman stroked the cat]
- the whole sentence is a constituent
 - "man chased the dog" is not a constituent

Question and answer

Wh-questions can be answered by sentence fragments.

- The *wh*-word (or phrase) corresponds to a constituent.
- The fragment answers are constituents.

Question and answer

- (1) The man chased the dog
- (2) Who chased the dog? The man
- (3) What did the man chase? The dog
- (4) What did the man do? Chase the dog

- "the" and "man" form a constituent
- "the" and "dog" form a constituent
- "hit", "the" and "dog" form a constituent

Representing constituency

(1) The man hit the dog

Facts:

- "the" and "man" form a constituent
- "the" and "dog" form a constituent
- "hit", "the" and "dog" form a constituent
- the whole thing is a constituent

How can we represent these facts?

Bracket representation

the man chased the dog

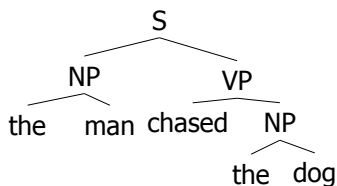
[the man] chased [the dog]

[the man] [chased [the dog]]

[[the man] [chased [the dog]]]

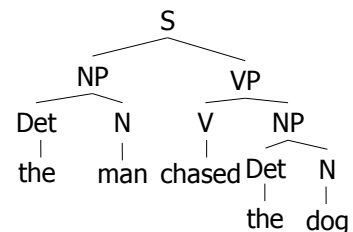
[_S [_{NP} the man] [_{VP} chased [_{NP} the dog]]]

A clearer representation: trees



The constituents are all **subtrees**

A clearer representation: trees



The constituents are all **subtrees**

Review

Vicious wolves attacked the lonely shepherd

Pair up and do this:

- Person 1: use a constituency test to identify the constituents in this sentence
- Person 2: use a different test to check
- Compare results

Summary

- We are interested in **describing** the **structure of sentences**
- Sentences are generated by **rules**
- Sentences are made up of **constituents**
- We have looked at some **tests** for spotting constituents
- We can illustrate constituency with **trees**

Next class

- Lexical entries
- Syntactic categories
- Subcategorization
- Thematic roles