## The English Language and its Grammar

Class 1, Syntax 1, WiSe 2016/2017

1. For the purposes of <u>Syntactic Theory</u>, a **string** consists of one or more words: *dogs*, *Hunde*, *einkaufen gehen*, *to go shopping*, ....

2. For the purposes of English Syntax, we distinguish between two kinds of strings:

- a. Strings which native speakers would accept as English: dogs, to go shopping, loves Jill, waiting for the bus, it is raining, happy cats, ...
- b. Strings which native speakers would not accept as English: Hunde, einkaufen gehen, go to shopping, waiting for bus the ...

3. It is the task of English syntax to explain in a precise and principled fashion which strings of words native speakers of English accept as well formed English and which not.

4. This task would be easy to accomplish, if one could simply list all the English strings. But, unfortunately, one cannot do that, since there are infinitely many well formed English strings:

- a. Mary is tired. Mary is very tired. Mary is very, very tired. Mary is very, very, very tired. ...
- b. Mary went to the store. Mary went to the store <u>but</u> Jill stayed home. Mary went to the store <u>but</u> Jill stayed home <u>and</u> Sue had the flu. ...

5. So, it is impossible to list all and only the well formed strings of English words. But what is possible, is to find a **property** that all and only the strings of English have in common: they and only they are **grammatical** according to the **Grammar of English**! All other strings are **ungrammatical** according to the Grammar of English.

6. So, we need to concern ourselves with the Grammar of English. This is what this course is all about!

7. For the purposes of English syntax, **the Grammar of English** consists of two parts:

- a. The English Lexicon: a, aardvark, able, abut ...
- b. The English Phrase Structure Rules:  $S \rightarrow NP VP, NP \rightarrow D N \dots$

8. With the **Grammar of English** out our disposal, it is now easy to define what it means for a string of words to be grammatical English: a string of words is grammatical English, if the English grammar licenses a well formed phrase structure tree for that string. Otherwise, the string is ungrammatical in English.

Examples:



- a. Since the tree on the left is a well formed phrase structure tree of English, its string *The cat likes Mary* is a grammatical expression of English.
- b. Since the tree on the right is not a well formed phrase structure tree for English, its string *\*cat the likes Mary* is not a grammatical string of English.

9. So, we can define **the English Language** as all and only those strings for which the English grammar licenses a well formed phrase structure tree. Everything else is not part of the English language.

10. We now need to make precise **how** the grammar of English licenses well formed phrase structure trees. For that, we need a simple, but important technical concept, that of a **local tree**.

A local tree consists of a single mother node and 1–3 daughters:



Nothing else is a local tree.

11. We now say that the grammar of English licenses a phrase structure tree, if that tree is completely composed of local trees and the grammar of English licenses every one of those local trees.

Example: The grammatical phrase structure tree in 8. above is composed of eight local trees.

Four of the local trees have a word at the bottom and for that reason are called **Lexical local trees:** 

D	Ν	V	Ν
the	cat	likes	Mary

The other four local trees have parts of speech (= syntactic categories) as labels of all nodes and thus are called **non-lexical local trees**:



12. It is now easy to see how the grammar of English can license all and only the local trees that make up all the grammatical phrase structure trees of English. Recall that the grammar has two parts, the lexicon and the phrase structure rules. The lexicon will license the lexical local trees of English and the phrase structure rules will license the non-lexical local trees of English.

## 13. The English Lexicon revisited

We will now be a little more precise as to what the English lexicon looks like. Here is the portion of the English lexicon that shows the words that occur in the word strings of 8. As you can see, each word is now listed with its part of speech:

cat, N likes, V Mary, N the, D

14. The lexicon licenses lexical local trees

It is easy to see that the lexical entries contain exactly the right information to license the lexical local trees. The general principle is the following:

A local tree of the form

 $\mathbf{X}_L$ 

word

is licensed by the grammar of English, if

## word, X

is a line in the English lexicon.

In " $X_L$ ", X is a part of speech and the subscript L means that the local tree is licensed by a lexical entry.

15. Example: The lexical local tree

 $D_L$ the

is licensed by the grammar of English, since

the, D

is a line in the English lexicon.

Note that the remaining lexical entries in 13. license the remaining three lexical trees in 11.

16. The phrase structure rules licenses non-lexical local trees

All the phrase structure rules have the following form:

N: Category<sub>0</sub>  $\rightarrow$  1-3 categories

"N" is the individual number of the rule. Examples:

1: NP  $\rightarrow$  N 2: S  $\rightarrow$  NP VP 3: VP  $\rightarrow$  V NP PP

Each of these rules contains exactly the right information to license one kind of non-lexical local tree. The general principles are the following:

a. Let X and Y be categories. Then, a local tree of the form

$$X_N$$
  
|  
Y

is licensed by the grammar of English, if

$$N{:} X \to Y$$

is an English phrase structure rule.

Example: A local tree of the form

$$NP_M$$
 $|$ 
 $N$ 

is licensed by the grammar of English, since

$$M: NP \to N$$

is an English phrase structure rule.

b. A local tree of the form



is licensed by the grammar of English, if

$$Q: X \to Y Z$$

is an English phrase structure rule.

Example: A local tree of the form



is licensed by the grammar of English, since

$$R: NP \to D N$$

is an English phrase structure rule.

c. The third and final case is left as an exercise for you!

17. Assume that the following are all phrase structure rules of English:

1:  $S \rightarrow NP VP$ 2:  $NP \rightarrow N$ 3:  $NP \rightarrow D N$ 4:  $VP \rightarrow V NP$ 

Then, each of the non-lexical local trees in 11. are licensed by the grammar of English, since for each of them there is an English phrase structure rule that licenses it.

18. Summary: We have now proved that the following phrase structure tree is licensed by the grammar of English, because it is completely composed of local trees that are either licensed by the English lexicon or the English phrase structure rules:



And, since the English grammar licenses this tree, its word string *The cat likes Mary* is a grammatical expression of English. And the same for every other one of the infinitely many word strings which native speakers accept as grammatical English!

19. Contrast this with the word string *\*cat the likes Mary* which native speakers of English do not regard as part of their language. In order to draw a phrase structure tree for this string,



we would need a phrase structure rule of the form

$$?: X \to N D$$

that is, a rule that combines the categories N and D in that order to form a category X. But, English has no such phrase structure rule! Therefore, the English grammar does not license a phrase structure tree for the string *\*cat the likes Mary*, which explains why speakers of English regard it as ungrammatical. The same for all the infinitely many strings of words which are ungrammatical in English!

20. The listing problem is now solved

Remember that it is impossible to list all the grammatical strings or their phrase structure trees of English, since there are infinitely many. No speaker is able to memorize them all.

But, it is possible to list the grammar of English, which licenses all and only the phrase structure trees of the strings of English words: over several years of language acquisition, children can easily memorize the several ten thousands of words of English and the 100+ phrase structure rules of the language.