(CAS/MET/GRS) LX (321/521/621) *Syntax: Introduction to Sentential Structure*

Groundhog Day, 2024

1 Topics

- VP
- NP and determiners
- Mandatory D and crosslinguistic questions

2 From V to VP

We started out with rules that looked like this, accounting for the simple sentence *Homer eats*.

S →	N V
N →	Homer
V →	eats

However, there are also adverbs, like *quickly*. And both the sentences *Homer eats quickly* and *Homer quickly eats* are English. As are *Homer eats always* and *Homer always eats*. So we can expand this grammar to account for this like so:

S →	N V
V →	Adv V
V →	V Adv
N →	Homer
V →	eats
Adv →	quickly
Adv →	always

This predicts a lot of additional things as well, such as *Homer always eats quickly* and *Homer always quickly eats* and *Homer eats quickly always*. And *Homer always always always eats quickly*. It is moderately successful, even if it does somewhat overgenerate.

Then we observed that verbs come in several types (intransitive, transitive, ditransitive), so we need to split V up into Vi, Vt, and Vd.

S	→	N Vi
S	→	N Vt N
S	→	N Vd N N
Vi	→	Adv Vi
Vi	→	Vi Adv
N	→	Homer
N	→	Marge
N	→	lunch
Vi	→	eats
Vt	→	buys
Vd	→	gives
Adv	→	quickly
Adv	→	always

This still handles *Homer always quickly eats*, but adverbs can go on either side of transitives and ditransitives as well: *Homer quickly buys lunch*, *Homer buys lunch quickly*, *Homer quickly gives Marge lunch*, *Homer gives Marge lunch quickly*. In fact, it looks like the adverbs that come after need to come after the object(s) of the verbs. The existing adverb rule is difficult to extend. If we add a rule like S → N Vt N Adv, this won't predict the fact that adverbs can iterate (the rule is not recursive).

However, we can make the rule recursive if we introduce a node that includes the V and any objects it might have. Like so:

S	→	N VP
VP	→	Vi
VP	→	Vt N
VP	→	Vd N N
VP	→	VP Adv
VP	→	Adv VP
N	→	Homer
N	→	Marge
N	→	lunch
Vi	→	eats
Vt	→	buys
Vd	→	gives
Adv	→	quickly
Adv	→	always

So, this is a kind of simplicity/elegance evidence for VP, as well as empirical evidence from the fact that adverbs seem to iterate on the right edge. (Maybe we could have added a rule like Adv → Adv Adv to get the adverb iteration, but there are other things—like constituency tests that suggest a VP node in the tree—that also support having a VP.)

3 From N to NP

But we can do the same thing with N. Clearly proper names and bare plurals and mass nouns do not exhaust the possible nouny things (where "a subject" is the most canonical kind of nouny thing). A subject can be a multi-word phrase, like "the manager" or "the happy manager." And there seem to be slots. In "the

happy manager" the first slot there is a determiner, which we know because any member in the class of determiners can go there. There also only seems to be one slot, so you can't put two determiners in there. Sometimes you can have no determiners, like with a proper name, a mass noun ("soup") or a plural noun ("grapes"). The middle slot is for adjectives, but it also seems like you can put several adjectives in there. This is explored a bit more in the homework, so I will skip adjectives for now.

$$
\begin{array}{rl}
\text{S} \rightarrow & \text{NP VP} \\
\text{VP} \rightarrow & \text{Vi} \\
\text{VP} \rightarrow & \text{Vt NP} \\
\text{VP} \rightarrow & \text{Vd NP NP} \\
\text{NP} \rightarrow & \text{Det N} \\
\text{NP} \rightarrow & \text{N} \\
\ldots & \\
\hline
\ldots & \\
\text{D} \rightarrow & \text{the} \\
\text{N} \rightarrow & \text{manager}
\end{array}
$$

4 Types of D

As was mentioned earlier at some point, there are a number of things we might want to classify as being in the D category. These are things that all go in the D slot, but they are nevertheless potentially distinguishable from one another. Articles like *the* or *a(n)*, demonstratives like *this* or *that*, possessive pronouns like *my*, quantifiers like *every*.

5 Mandatory D

Rather than saying a D is optional (that is, having multipled NP rules, one where the D is there and one where the D is not there), there are some reasons to instead say that the D is mandatory, but can sometimes be silent.

Specifically, we might suppose that *a(n)* is a D that occurs with singular count nouns when an existential meaning is intended, but the D for the existential meaning elsewhere is silent. This simplifies the rules, somewhat, though it does also mean that we need to allow for the possibility of at least two different "silent Ds" since proper names appear not to have an overt D (generally) but are not in general existential.

Proper names *can* sometime surface with D, though. In English *we invited the Pat we like to the party* or *your Pat* or *that Pat* (where we are distinguishing between multiple people named Pat). And in some other languages (modern Greek, Italian, for example) it is usual/common to use the equivalent of *the* before a name. So even proper names can act like common nouns, and perhaps we can take the fact that D can be there sometimes as being evidence for (with proper nouns) that even when you don't hear a D, there is one, it's just a silent definite D that goes specifically with proper names.

6 Syntax vs. semantics

Semantics is an attempt to understand the possible meanings that sentences can have. A sentence like "Homer sleeps" has some meaning. However, it's actually pretty hard to define what that meaning is. A common approach to this difficulty is to give up. It's too hard to define what the meaning of a sentence is. However: people who know the meaning of a sentence know under what circumstances it is true. So if

we can equate knowing the meaning of a sentence with knowing the circumstances under which it is true, then we have a place to start, since it is somewhat easier to work with "truth conditions."

One important principle of formal semantics is the idea that meaning is built up from parts. That you can derive the meaning of "eats grapes" if you know the meanings of "eats" and "grapes." This is the principle of *compositionality*: the meaning of a complex structure is derived from the meanings of its component parts and the way in which they are combined. This means that semantics actually also works with constituency and hierarchical structures, and the hope of the broader project we are engaged in is that the hierarchical structures that are relevant to syntax are the same structures that are relevant to semantics.

This can serve as an additional kind of argument that a D is present in our NP, even if you can't actually see/hear it. You can tell it is there because it is contributing (existential) semantics.

This also might be useful in trying to make the case across languages for a D node in the structure. Some languages do not have English-type articles like *the* and *a(n)*. Do they lack the D in the NP? Or is it just silent? Good question, and people argue about it. But if D is where the semantic distinction between definite and indefinite "lives" (and if semantics is compositional and is derived from the same structure as the syntax is), then the fact that a language has the semantic distinction between definite and indefinite can be taken as evidence that the D is there. It's indirect at best, but it's possible.