

CAS LX 522

Syntax I

2

Morphosyntactic features
(2.1-2.4.1)

In search of the atoms of the system

- Syntax is—at least in large part—the study of the principles of sentence formation.
- There are principles that govern which combinations of words are sentences of English. What is the “vocabulary” of these principles? What are they stated in terms of?
- “Words” might be a good starting point.

The atoms of the system

- However, it seems that it isn’t exactly the words—it is the *properties* each word has that seems to be basic. Verb or not a verb, plural or not plural...
- 1) Three dogs are here. One dog is here.
 - 2) Three geese are here. One goose is here.
 - 3) Three deer are here. One deer is here.

Properties... features...

- Words have *properties*. Like being a verb, or being plural.
- “Plural” is an *abstract concept*—there is no direct map to morphology (*deer, geese, mice, feet, dogs, children, data*), but they all make the same demands of the verb.

Properties... features...

- Same “agreement” requirement, regardless of the actual morphological shape.
- The abstract property of “plural” (or “singular”) seems to be what the grammar is sensitive to. That’s smaller than a word.
- (Morphosyntactic) features

Agreement

- In English, the subject and the verb of a sentence need to *agree* in number and (for *be*) person.
- 1) The dog wants food. The dogs want food.
 - 2) The dog is hungry. The dogs are hungry.
 - 3) I am hungry. We are hungry.

Agreement & interpretability

- If the subject is plural (has a plural feature) then the verb must take on a “plural” form.
- It is crosslinguistically common to have this kind of agreement relation between subject and verb.
- Intuitively, the plural feature is *interpretable* on the subject, contributes to the meaning, “belongs there” in some sense. On the verb, the (agreeing) plural feature is just a “reflection”, *uninterpretable*—much more on that later.

Data from other languages

- 1) Il a dit qu'elle était malade
he_[3.sg] have_[3.sg] said that she was ill
'He said that she was ill.'
 - 2) Ils ont dit qu'elle était malade
they_[3.pl] have_[3.pl] said that she was ill
'They said that she was ill.'
- Why does it matter what other languages do?

What are the features?

- Some features—that is, some properties—seem to matter for the purposes of syntax, some don't. So, the identity of the features need to be part of our theory—features are just “properties”—but, the features that syntax relies on are the *relevant* properties.
- We're looking for the minimal (least complicated) set of features that suffices to explain the grammar.

What are the features?

- No language says that subject and verb must agree in the feature [invented in early September], although there are things that have this property.
- For the purpose of describing the grammar and explaining the syntactic principles, we don't care about [invented in early September].
- We have evidence, though, that [plural] matters to syntax (at least in some way...)

[plural]

- We know number matters. In English, things can be singular or plural. So, a first guess is that nouns have either a [singular] feature or a [plural] feature.
- Hypothesis:
[sg] and [pl] are features a word can have.
- Prediction:
Four classes of words: [sg], [pl], [sg,pl], []

Science

- That thing we just did? It was science.
- We had some observations, the existence of singular and plural forms—and they matter for the grammar.
- We formulated a hypothesis.
- We identified other facts that we expect to hold—the *predictions*—if the hypothesis is correct.
- Now, we'll go back to the data to see if the predictions are borne out.

Overgeneration

- However—it turns out that the prediction is *not* met in the data.
- The prediction is that there are four number classes of nouns, but English has only two.
- This hypothesis *overgenerates*—it predicts the existence of the actual distinctions, but it also predicts other distinctions that don't exist.

[plural]

- So, we have a new set of observations, now including the fact that there are just two classes.
- And there's a simpler story we can tell, one that *predicts* exactly two classes.
- [plural] for plurals, [] for singulars.

Undergeneration

- An analysis that says “All words are singular” *undergenerates*.
- All predicted combinations are attested.
- Some attested combinations are not predicted.

Privative features

- There are (at least) two ways we can characterize features.
- Above, we did it one way—the feature [p] is there on plurals, and not there on singulars. This kind of feature—which is either *there* or *not there*—is a *privative* feature.

Binary features

- We could also view a feature as having *values*.
- A *binary valued* feature could have either of two values. Usually “+” and “-”.
- On this view, plurals have [+plural], and singulars have [-plural].

Which is the right way to think of features?

- We don't know from the outset which view is the best for describing syntax, we want to choose the one that best captures the generalizations we see.
- The two views *are not* indistinguishable. They *do* make different predictions. Specifically, about what syntax can “see.”

The Hopi dual

- 1) Pam taaqa wari
that man ran[sg]
'That man ran.'
- 2) Puma taʔtaqt yuʔtu
those man[pl] ran[pl]
'Those men ran.'
- 3) Puma taaqat wari
those man[pl] ran[sg]
'Those two men ran.'

Hopi morphology

- In Hopi, the dual is expressed by *combining* singular and plural.
- Unlike what we observed about English— for Hopi, we have kind of an explanation of this if we analyze dual as [+pl, +sg] (or as [pl, sg]).
- So, we seem to need to specify [±sg] for Hopi, but not for English.

Overgeneration?

- The Hopi dual can be nicely described as being [+plural, +singular].
- So for Hopi we need both [±plural] and [±singular] (or the privative analog).
- Which should predict the existence of a *fourth* number: singular, plural, dual, and neither singular nor plural.

The fourth number?

- There doesn't, however, seem to be a fourth number—across languages. There's really just the three kinds: singular, plural, and dual.
- Adger tells a story at this point: There is an additional constraint that every noun needs to have *some* number feature. I want to come back to this in a little while.

General structure of the account

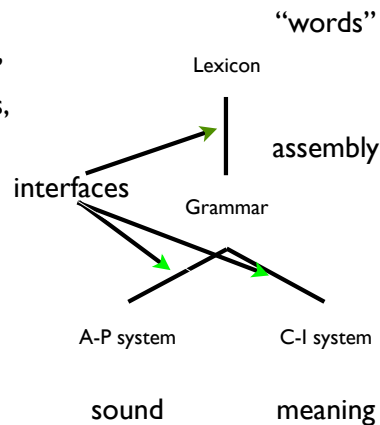
- Knowing a language is:
 - i) knowing the “words”
 - ii) knowing how to put them together
 - iii) knowing how to pronounce them
 - iv) knowing what they mean in combination

The lexicon

- To construct a sentence, we start with the “words” and put them together.
- We can describe the knowledge of the words of a language as being a list, a mental *lexicon*.

Interfaces

We can view a “word” as a bundle of features, as defined by its properties. The grammar *assembles* words into sentences. The sentences are *interpreted* and *pronounced*.



Interfaces

- The assembly process is the grammar proper.
- The system that interprets sentences is another cognitive module (“conceptual-intensional system”) concerned with meaning, reasoning, etc. It interprets the constructed sentence at the *interface*.
- The system that determines the pronunciation of sentences is yet another cognitive module (“articulatory-perceptual system”), interpreting the constructed sentence at its interface.

Points of tension

- For English, it seems that independent [sg] and [pl] features is more complicated than we need—it seems to overgenerate.
- In the broader picture, Language needs to allow for independent [sg] and [pl] features in order to accommodate duals in, e.g., Hopi.

Tension

- We need a hypothesis about what is different in languages with no dual (e.g., English).
- Adger’s suggestion: All languages have singulars, but in languages without duals, singular is the *default*, the “number for nouns not specified for number.” The feature [sg] is *not recorded* in the English lexicon: *book* [], *books* [pl].
- So languages can differ in whether they record [sg] in the lexicon.

What are the features?

- Hard to say. A universal set, some used in some languages, but not others? Learned?
- Some features seem not to exist, why?
- Okham’s razor: keep theories as simple as possible. Here, we want to define the simplest set of features we can get away with and still explain the data.

Category

- Syntax is concerned with *distribution*.
- Words seem to come in distributional classes.
 - One class of words can appear after the possessive pronoun *my* (*my book*, **my at*, **my quickly*, **my explode*, **my purple*). The *nouns*.
 - One class of words is compatible with past tense. The *verbs*.
 - One class of words is compatible with comparative (*happier*). The *adjectives*.

Category

- Words can be separated into classes: noun, verb, adjective, preposition, etc.
- Classes also vary with respect to the kind of morphological endings they can have, and so forth. (*Arrival, replacement, destruction; widen, computerize*)

Distribution examples

- They have no *noun*.
- They can *verb*.
- They are *adjective*.
- Very *adverb*, very *adjective*.
 - So long as it makes sense (e.g., with gradable adjectives; #*they are very absent*).
- Right *preposition*. (*right over the house*)

Nouns and verbs

- Nouns have a category feature [N].
 - *Books* [N, pl]
- Verbs have a category feature [V].
 - *Complained* [V]
- Two independent features.
- Four predicted categories.

[N], [V], [N,V], []

- So, nouns are [N], verbs are [V].
- What might [N,V] be? Maybe adjectives are a bit “nouny” and “verby” at the same time.
- And the fourth possibility? []?
- The other basic category would presumably be prepositions.
- But, really? []?

Privative? Or binary?

- There’s something kind of uncomfortable about saying the prepositions simply *lack* category features.
- We can soothe ourselves somewhat by adopting binary category features instead of privative features.
- Same predictions, but more in line with our intuition about what “category” should be.

[±N, ±V]

- The [±N, ±V] category system may seem a bit “out of the blue.” But it does yield some descriptive benefit. To wit:
- Consider what *un-* can attach to:
 - 1) *untie, unfold, unwrap, unpack*
 - 2) *unhappy, unfriendly, undead*
 - 3) **uncity, *uncola, *unconvention*
 - 4) **unupon, *unalongside, *unat*

[±N, ±V]

- Basically, it applies to (reversible) verbs and adjectives, but not to nouns or prepositions.
- Well, what are those?

Russian case

- Case is a morphological form nouns take on depending on where they are in the sentence (subject vs. object). English pronouns show this distinction: *I like her, she likes me*. Some languages (like Russian) show differing case forms on all nouns.
- When Russian nouns are modified by an adjective, the adjective is *also* marked for case.

Russian case

- What gets marked for Case in Russian?
- 1) Krasivaya dyevushka vsunula
beautiful girl put
chornuyu koshku v pustuyu korobku
black cat in empty box
'The beautiful girl put the black cat in the empty box.'