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 [pl] 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.