JMORF — Morpho-Syntax

Structure of the lexicon

Francis Bond
Palacký University
https://fcbond.github.io/
bond@ieee.org

Lecture 6
Location: SV 2.39

Lexical Types and Rules

We will use slides from Emily Bender:

- Lexical Types
- Lexical Rules

P1: *'s* and the SHAC

The name 'Specifier-Head Agreement Constraint' suggests that heads always agree with their specifiers. Examples like *Pat's parents* and *the children's game* look like counterexamples: in both cases, the possessive NP in the DP that functions as the specifier of the noun differs in number from that noun.

Explain why these are not really counterexamples, given our formulation of SHAC as a type constraint, together with the analysis of possessives developed in Problem 4 of Chapter 6. *[Hint: The fact that 's is the head of the DP is crucial.]*

P2: Plural and Mass NPs Without Specifiers

There is a problem with our treatment of common nouns. The type *cn-lxm* requires common nouns to have nonempty SPR lists, and this requirement is preserved in the Plural Noun Lexical Rule. Similarly, the type *massn-lxm* inherits the constraint on the SPR, and this constraint is preserved when these nouns undergo the inflectional rules. This treatment makes the wrong predictions: specifiers are optional for plural nouns and mass nouns.

A. Give examples showing, for one plural noun and one mass noun, that the specifier is optional (i.e. permitted but not obligatory).

Two obvious approaches to this problem are the following:

(i) allow empty SPR lists in the lexical entries for plural and mass nouns; or

(ii) introduce a new grammar rule to account for NPs with plural or mass heads and no specifiers.

Alternative (i) would involve modifying the Plural Noun Lexical Rule, as well as the type *massn-lxm* to make the first member of the ARG-ST list optional.[1]

The rule in alternative (ii) is analogous to the Imperative Rule given in Chapter 7, in that it would have only one constituent on the right hand side, and its function would be to license a constituent without a specifier, although its daughter has a nonempty SPR list.

[1] This would require making the constraint on the ARG-ST of *cn-lxm* defeasible.

It turns out that alternative (i) makes incorrect predictions about prenominal modifiers (see Problem 1 of Chapter 5). We want adjectives like *cute* to modify plural nouns even when they don't have specifiers:

(iii) *Cute puppies make people happy.*

Under alternative (i), in order to generate (iii), we would have to allow adjectives like *cute* to modify NPs (i.e. expressions that are [SPR $\langle\ \rangle$]). If we do that, however, we have no way to block (iv):[2]

(iv) **Cute the puppies make people happy.*

[2]There are also technical problems with making alternative (i) work with the ARP.

Alternative (ii), on the other hand, would allow *cute* to always modify a NOM ([SPR ⟨ DP ⟩]) constituent. A NOM, modified or otherwise, could either be the daughter of the non-branching rule, or the head daughter of the Head-Specifier Rule.

B. Formulate the rule required for alternative (ii).

[*Hint: The trickiest part is formulating the rule so that it applies to both plural count nouns and mass nouns, while not applying to singular count nouns. You will need to include a disjunction in the rule. The SPR list of the head daughter is a good place to state it, since the three types of nouns differ in the requirements they place on their specifiers.*]

P3: Arguments in Japanese

As noted in Chapter 2, Japanese word order differs from English in a number of ways, including the fact that it is a 'Subject-Object-Verb' (SOV) language. Here are a few relevant examples. In the glosses, 'NOM', 'ACC', and 'DAT' stand for nominative, accusative, and dative case, respectively. (Note that Japanese has one more case – dative – than English does. This doesn't have any important effects on the analysis; it merely requires that we posit one more possible value of CASE for Japanese than for English).[3]

(1) *Hitorino otoko-ga sono hon-o yonda.*
one man-NOM that book-ACC read.PAST
'One man read that book.'
[cf. *Yonda hitorino otoko-ga sono hon-o.
*Hitorino otoko-ga yonda sono hon-o.

[3]The examples marked with '*' here are unacceptable with the indicated meanings. Some of these might be well-formed with some other meaning of no direct relevance; others might be well-formed with special intonation that we will ignore for present purposes.

*Otoko-ga hitorino sono hon-o yonda.
*Hitorino otoko-ga hon-o sono yonda.
*Hitorino otoko-ni/-o sono hon-o yonda.
*Hitorino otoko-ga sono hon-ga/-ni yonda.]

(2) *Hanako-ga hon-o yonda*
Hanako-NOM book-ACC read.PAST
'Hanako read the book(s)'
[cf. *Yonda Hanako-ga hon-o.
*Hanako-ga yonda hon-o.
*Hanako-ni/-o hon-o yonda.
*Hanako-ga hon-ni/-ga yonda.]

(3) *sensei-ga Taroo-ni sono hon-o ageta*
teacher-NOM Taroo-DAT that book-ACC gave.PAST
'The teacher(s) gave that book to Taroo'
[cf. *Ageta sensei-ga Taroo-ni sono hon-o.

*Sensei-ga ageta Taroo-ni sono hon-o.
*Sensei-ga Taroo-ni ageta sono hon-o.
*Sensei-o/-ni Taroo-ni sono hon-o ageta.
*Sensei-ga Taroo-ga/-o sono hon-o ageta.
*Sensei-ga Taroo-ni sono hon-ga/-ni ageta.]

(4) *Hanako-ga kita*
Hanako-NOM arrive.PAST
'Hanako arrived.'
[cf. *Kita Hanako-ga.]

As the contrasting ungrammatical examples show, the verb must appear in final position in Japanese. In addition, we see that verbs select for NPs of a particular case, much as in English. In the following tasks, assume that the nouns and verbs of Japanese are inflected words, derived by lexical rule from the appropriate lexemes.

A. Write Head-Specifier and Head-Complement Rules for Japanese that account for the data illustrated here. How are they different (if at all) from the Head-Specifier and Head-Complement Rules for English?

B. Give the lexical entry for each of the verbs illustrated in (i)–(iv).

[*Make sure your entries interact with the rules you formulated in part (A) to account for the above data. The data given permit you to specify only some features; leave others unspecified. Assume that there is a Past-Tense Verb Lexical Rule (an i-rule) that relates your lexical entries to the words shown in (i)–(iv). We have not provided a hierarchy of lexeme types for Japanese. You may either give all relevant constraints directly on the lexical entries, or posit and use subtypes of lexeme. In the latter case, you must also provide those types.*]

C. Give the lexical entries for the nouns *Taroo* and *hon*. [*See notes on part (B).*]

D. Formulate the lexical rule for deriving the inflected forms ending in *-o* from the nominal lexemes.

Acknowledgments and References

- Course design and slides borrow heavily from Emily Bender's course: *Linguistics 566: Introduction to Syntax for Computational Linguistics*
  `http://courses.washington.edu/ling566`