

# Argument asymmetries and *v*P

Previously: 9 constituency tests

Last week: Constituency tests as a window into hierarchical structure; structure-building with Merge and Adjoin

Announcements/questions: office hours (Thursdays 10:30–noon), quiz date

## 1 Nine NP asymmetries<sup>1</sup>

Given two NPs, how can we tell their relative height?

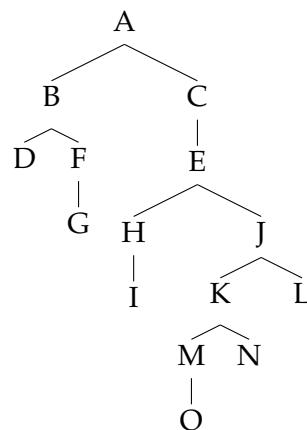
### 1. Binding Condition C:

*R-expressions* (NPs that are not pronouns) cannot be *c-commanded* by a coreferential NP (*antecedent*) (= bound). (Underlined NPs below are coreferential.)

- (1) a. \*He/John likes John.
- b. His/John's mother likes John.
- c. The rumor about him/John upset John.
- (2) a. \*He/John thinks Mary likes John.
- b. His/John's mother thinks Mary likes John.

In particular, Condition C (and other asymmetries below) appear to be sensitive to the relationship of *c-command*:

- (3) **C-command** (originally by Tanya Reinhart; formulation here from Adger 2003:117):  
Node A *c-commands* node B if and only if A's sister either is B, or contains B.



<sup>1</sup>Based on a handout by Jason Merchant.

2. Binding Condition A:

*Reflexive* (-self) and *reciprocal* pronouns (*each other*) must be c-commanded by their *antecedent* (= bound) within their binding domain.

(4) a. John likes himself.

b. \*Himself likes John.

(5) a. John and Mary like each other.

b. \*Each other likes John and Mary.

c. John and Mary like the pictures of each other.

(6) a. \*John thinks Mary likes himself.

b. \*John and Mary think Bill likes each other.

(7) Reflexives in some languages do not have this locality restriction: (Mandarin)

Li taitai renwei [laoshi xihuan ziji-de xiaohai].

Li madam think teacher like self-GEN child

'Mrs. Li thinks the teacher likes *self*'s child.'

3. Binding Condition B:

Regular pronouns must be free (not bound) within their binding domain.

(8) a. \*John likes him.

b. John likes [his parents].

c. John thinks [Mary likes him].

Movement asymmetries:

4. Strong crossover (SCO): (Postal, 1971)

(9) We want to know who  $x$  is in the sentence "You think  $x$  said  $x$  will win":

a. Which guy do you think     said he will win?

b. \*Which guy do you think he said     will win?

A *wh* phrase "crossing over" a coreferential pronoun leads to ungrammaticality.

5. Weak crossover (WCO): (Postal, 1971)

(10) a. Which guy do you think     said [his mother] will win?

b. \*Which guy do you think [his mother] said     will win?

**Note:** There are two differences between SCO and WCO. First, in SCO (9b), the coreferential pronoun c-commands the "gap" of the moved *wh*, whereas in WCO (10b), it does not. Second, speakers robustly reject SCO constructions with the intended interpretation, whereas WCO is "weak" because many speakers do not find such configurations ungrammatical.

6. Superiority: (Kuno and Robinson, 1972)

(11) We want to ask a question based on "You said who ate what":

- a. Who did you say          ate what?  
          ↑                                  └─
- b. \*What did you say who ate         ?  
          ↑                                  └─

Quantifier asymmetries:

7. Quantifier-pronoun binding:<sup>2</sup>

Pronouns whose reference changes depending on some other, quantificational NP (*bound pronouns*), must be below the quantificational NP.

- (12) a. Every/No school pays its students.
- b. \* Its students like every/no school.
- c. \* The review of every book upset its author.

8. NPI licensing:

Certain phrases like *anyone/anything/any NP* are called *Negative Polarity Items* (NPIs) and must have a higher, negative NP (or negation).<sup>3</sup>

- (13) a. No one saw anything.
- b. \* Anyone saw nothing.

9. Each... the other:

- (14) a. Each boy hit the other (boy).
- b. \* The other (boy) hit each (boy).
- (15) a. Each boy claimed that the other boy broke the window.
- b. \* The other boy claimed that each boy broke the window.

**Exercise:** 1. Write sentence with at least two NPs; 2. Exchange with friend; 3. Use at least three tests to see which NP is higher.

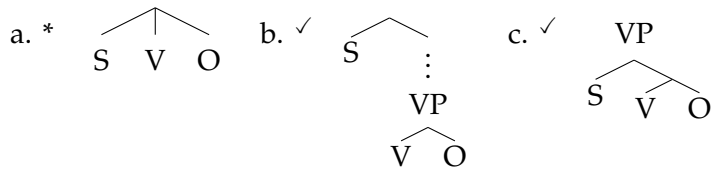
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<sup>2</sup>Quantifier binding is useful as a basic diagnostic tool, but may not be strictly require c-command. See Barker 2012.

<sup>3</sup>If you have taken a semantics class like EL4203, you know that this description is inadequate; see Ladusaw 1979. There are also uses of *any* which do not require negation, but often occur with modals, as in *John will/can eat anything*. These are called *Free Choice Items* and we won't discuss them here. (Some languages are more helpful than English and use different words for NPIs and FCIs.)

These NP asymmetries above show that subjects are consistently higher than objects: in particular, subjects c-command objects and objects do not c-command subjects. This supports our idea that there is a constituent containing V and the object, but not the subject:

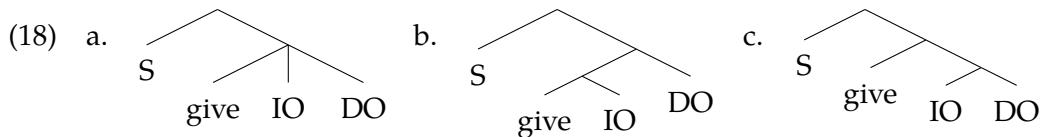
(16) **Because the subject c-commands the object, but not the opposite:**



## 2 Ditransitives

(17) I gave [NP John] [NP a picture].

*John* is the indirect object (IO)/goal; *a picture* is the direct object (DO)/theme



The NP asymmetries above are useful for determining the relative heights of the direct and indirect objects: (data from Barss and Lasnik 1986)

(19) a. I showed John/him himself (in the mirror).

b. \*I showed himself John (in the mirror).

(20) a. I showed every friend of mine his photograph.

b. \*I showed its trainer every lion.

(21) a. Which boy did you show his reflection] in the mirror?

b. \*Which lion did you show its trainer] his reflection?

(22) a. Who did you give what?

b. \*What did you give who what?

(23) a. I gave each man the other's watch.

b. \*I gave the other's trainer each lion.

(24) a. I gave no one anything.

b. \*I gave anyone nothing.

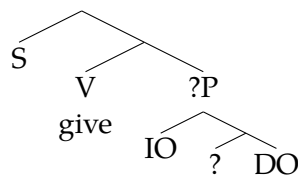
How can we build (18c)? Recall that Merge results in binary trees and must be driven by selectional features:

(25) **Merge( $\alpha, \beta$ ):** (read: ‘merge  $\beta$  to  $\alpha$ ’)

For any syntactic objects  $\alpha, \beta$ , where  $\alpha$  bears an unchecked selectional feature F and  $\beta$  bears a matching categorial feature:

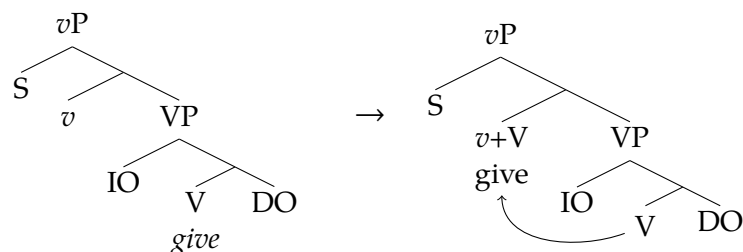
- a. check the feature F on  $\alpha$ , if any:  $\bar{F}$ ;
- b. return  $\begin{matrix} \gamma \\ \alpha \quad \beta \end{matrix}$  if  $\alpha$  is a head and  $\begin{matrix} \gamma \\ \beta \quad \alpha \end{matrix}$  otherwise, where the label  $\gamma$  is the unchecked non-inflectional features of  $\alpha$ .

(26) **The basic idea:**



But intuitively, *give* selects for its objects, DO and IO.

(27) **A solution (Larson, 1988): V selects for the DO and IO and “moves” to  $v$ :**



We will see other kinds of movement soon. We refer to movement of the head V to  $v$  as *head movement*.

(28) a. V (later pronounced as *give*): [V; uN, uN]

b.  $v$ : [ $v$ ; uN] (“little  $v$ ”)

(29) **Hierarchy of projections (Adger, 2003: 135):**

Every clause has  $v > V$ .

We must update *Merge* accordingly:

(30) **Merge( $\alpha$ ,  $\beta$ ):** (read: ‘merge  $\beta$  to  $\alpha$ ’)

For any syntactic objects  $\alpha$ ,  $\beta$ , where  $\alpha$  bears an unchecked selectional feature F and  $\beta$  bears a matching categorial feature, or the Hierarchy of Projections requires that  $\alpha$  take  $\beta$  as its complement:

- a. check the feature F on  $\alpha$ , if any:  $\mathbb{F}$ ;
- b. return  $\begin{array}{c} \gamma \\ \wedge \\ \alpha \quad \beta \end{array}$  if  $\alpha$  is a head and  $\begin{array}{c} \gamma \\ \wedge \\ \beta \quad \alpha \end{array}$  otherwise, where the label  $\gamma$  is the unchecked non-inflectional features of  $\alpha$ .

How do we know which argument has which interpretation?

(31) **Uniformity of Thematic Alignment Hypothesis (UTAH from Baker 1988, here from Adger 2003: 138):**

Identical *thematic relationships* between predicates and their arguments are represented syntactically by identical structural relationships when items are Merged. For example:

- a. Specifier of *v*P: agent
- b. Complement of V: theme (direct object)
- c. Specifier of VP: goal (indirect object)

**Exercise:** Ditransitive verbs can also introduce arguments in the form “DO to IO”:

(32) John gave [<sub>NP=DO</sub> a book] [<sub>PP=IO</sub> to Mary].

## References

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