ENG 575: Comparative Syntax — Fall 2005: TUE & FRI 13.30-15.00
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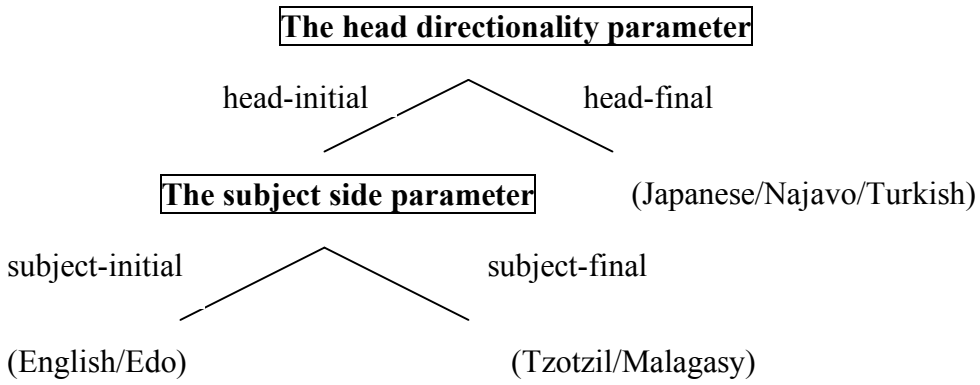
ANTISYMMETRY

1. THE HEAD PARAMETER

Word order	Languages number	%	Parametric settings
SOV	180	45	head-final and subject-initial
SVO	168	42	head-initial and subject-initial
VSO	37	9	[to be discussed]
VOS	12	3	head-initial and "rare" subject-final
OVS	5	1	head-final plus "rare" VP-movement
OSV	0	0	violates the object-verb constraint

Table 1: Parametric settings of basic word orders in natural languages

We can express a **parameter hierarchy** on the basis of the data discussed so far:



2. CHALLENGES TO THE HEAD PARAMETER

❶ What kind of problems might arise with this type of parameterization?
❷ Is there an alternative analysis?

Put simply, the syntax constructs syntactic objects, call them **phrase markers**, and hands them over to the phonological component for pronunciation (PF) and to the semantic component for interpretation (LF), thereby creating **sound-meaning pairs**.

Kayne's (1994) proposal is mainly concerned with the **mapping from syntax to PF**, i.e. with the linear order in which terminal elements ('words') are pronounced.

Standard assumption in the Principles-and-Parameters framework:

(1) Same hierarchical structure may give rise to different linear orders, e.g. VO vs. OV or PO vs. OP.

Kayne's (1994) **proposal**:

(2) Linear order is determined by hierarchical structure, such that different linear orders must be associated with different hierarchical structures.

Main implication of Kayne's approach for our topic of word order variation:

(3) There can't be anything like a head directionality parameter in UG.

3. INTRODUCING THE ANTISYMMETRY APPROACH

The major assumption of Kayne's theory is that of "**asymmetric c-command**". According to Kayne, linear order is precedence, and precedence is dictated by asymmetric c-command, where asymmetric c-command is defined as follows:

(4) X asymmetrically c-commands Y iff
   a. X c-commands Y and
   b. Y does not c-command X.

C-command is defined in terms of **"first node up"** (not "first branching node up"):

(5) X c-commands Y iff
   a. X does not dominate Y and
   b. every node dominating X also dominates Y.

According to Kayne, a **linear ordering** of the terminal elements in a phrase marker has three defining properties (for the purposes of the discussion, assume that linear order is precedence rather than subsequence):

(6) a. It is **transitive**, i.e. if x precedes y, and y precedes z, then x precedes z.
   b. It is **total**, i.e. for all pairs of elements x and y in a linearly ordered string, either x precedes y or y precedes x.
   c. It is **antisymmetric**, i.e. it is impossible for x to precede y and y to precede x.

There are **two further** formal notions:

(7) a. The **function *d*(X)**, which defines, for X a non-terminal node, the set of terminals that X dominates.
b. The **set *A***, which contains all pairs of non-terminals such that the first asymmetrically c-commands the second.

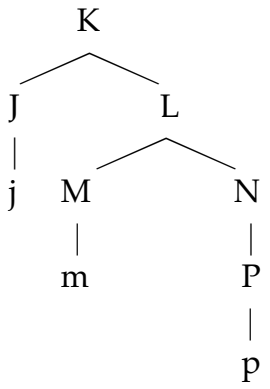
Here's the core of the theory, the so-called **Linear Correspondence Axiom (LCA)**:

(8) For a given phrase marker *P*, with *T* the set of terminals in *P* and *A* as defined in (7b), *d*(*A*) is a linear ordering of *T*.

4. How the System Works

Consider an **"abstract" phrase maker** like the one below, where upper-case letters stand for non-terminal categories and lower-case letters stand for terminal elements:

(9)

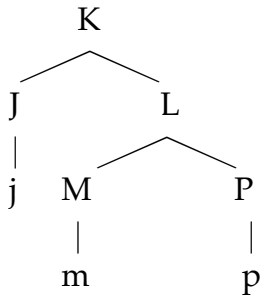


In-class Exercise #1
1. What's *T*?
2. What's *A*?
3. Given *T* and *A*, what's *d*(*A*)?
4. Does *d*(A) satisfy the conditions on linear order in (6)? For each condition, show the result of
   a. Transitivity:
   b. Totality:
   c. Antisymmetry:

Conclusion: The phrase marker in (9) is admissible / non-admissible by the LCA. (Circle correct answer.)

In-class Exercise #2
Now, let's do the same thing with the phrase marker in (i):

(i)



1. What's *T*?
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3. Given *T* and *A*, what's *d*(*A*)?
4. Does *d*(A) satisfy the conditions on linear order in (6)? For each condition, show the result of
   a. Transitivity:
   b. Totality:
   c. Antisymmetry:

Conclusion: The phrase marker in (i) is admissible / non-admissible by the LCA. (Circle correct answer.)

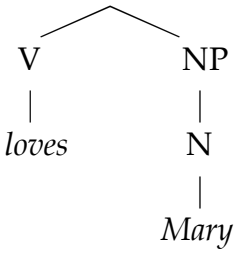
5. DERIVING X'-THEORY UNDER THE ANTISYMMETRY APPROACH

One **main assumption of X'-Theory** of phrase structure is the following:

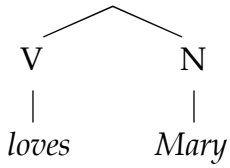
(10) *The complement of a head cannot be a head.*

For example, the phrase structure of the VP *loves Mary* is as in **(11a)** rather than (11b):

(11) a.



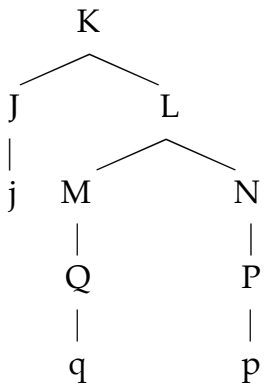
b. *



Now, given our discussion above, you should be able to see how the X'-theoretic assumption in (10) follows naturally under Kayne's antisymmetry approach. Well, if this is not so obvious, just ask yourself the following question: **Under Kayne's theory, what would go wrong if the complement of a head is itself a head?**

One other assumption of X'-Theory that we discussed previously is **endocentricity**: the requirement that all phrases must be headed. How does Kayne's antisymmetry approach derive that property of phrase structure? To help you answer that question, consider an abstract phrase marker like the one in (12) below, then answer the questions that follow in the same manner we did above:

(12)



1. What's *T*?
2. What's *A*?
3. Given *T* and *A*, what's *d*(*A*)?
4. Does *d*(A) satisfy the conditions of totality and antisymmetry in (16)?
   (For each of these two conditions, show how.)

Does endocentricity follow under antisymmetry? If yes, how? If not, why not?