

**1 Displacement as a general property of language:**1. *Wh-movement*

(a species of "A-bar" movement, the reason for the name of which we'll learn later):

		Mary	met	Bill	
Who	did	Mary	meet		?

2. *Topicalization*

(another kind of A-bar movement)

		Mary	met	Bill	
Bill	Mary	met			(but John she only talked to on the phone)

3. *Passive*

(the classic example of "A"-movement)

		Mary		met	Bill
	Bill	was	met		by Mary

4. *Raising*

		John	has	let the cat out of the bag
John	seems		to have	let the cat out of the bag.

5. *Head-to-head movement*

		John	has	let	the cat out of the bag
Has	John		let		the cat out of the bag?

**2 Some restrictions on movement:**6. *Subjacency*

\*Who did John say who met ?  
 Who did John say met who?

7. *Double object passives (only American English)*

(cf. active: John gave Mary a book.)

Mary was given a book (by John).

\*A book was given Mary (by John).

8. *Superraising*

\*John seems Bill to have believed to have gone.  
 (cf. "Bill seems to have believed John to have gone")

9. *Ungrammatical auxiliary movement*

(cf. declarative: John had been running)

Had John been running?

\*Been John had running?

### 3 Head Movement

Consider the following French sentences and their English translations:

- VP-adverb
10. Jean embrasse souvent Marie  
J. kisses often M.  
"John often kisses Mary"
- Negation
11. Jean ne mange pas de chocolat  
J ne eats not of chocolate  
"John doesn't eat chocolate"
- Floated (subject) quantifier
12. Les enfants mangent tous le chocolat  
The children eat all the chocolate  
"The children all eat chocolate"

In all of these cases the main verb appears to the left of the relevant item in French, and to the right of it in English.

13. Auxiliaries and modals in English:
- Negation
- a. John doesn't eat chocolate  
b. John can't eat chocolate  
c. John won't eat chocolate  
d. John may not eat chocolate.  
e. John wouldn't eat chocolate.  
f. John shouldn't eat chocolate.  
h. John might not eat chocolate.  
i. John hasn't eaten chocolate.  
j. John isn't eating chocolate.
- aux-neg order impossible throughout
- Adverbs:
- a. John doesn't often eat chocolate  
b. John can often eat chocolate  
c. John will often eat chocolate  
d. John may often eat chocolate.  
e. John would often eat chocolate.  
f. John should often eat chocolate.  
h. John might often eat chocolate.  
i. John has often eaten chocolate.  
j. John is often eating chocolate.
- (note: not so clean here; adv-aux order also possible)

Floated subject quantifier

- a. The children don't all eat chocolate (like the adverbs)
- b. The children can all eat chocolate
- c. The children will all eat chocolate
- d. The children may all eat chocolate.
- e. The children would all eat chocolate.
- f. The children should all eat chocolate.
- h. The children might all eat chocolate.
- i. The children have all eaten chocolate.
- j. The children are all eating chocolate.

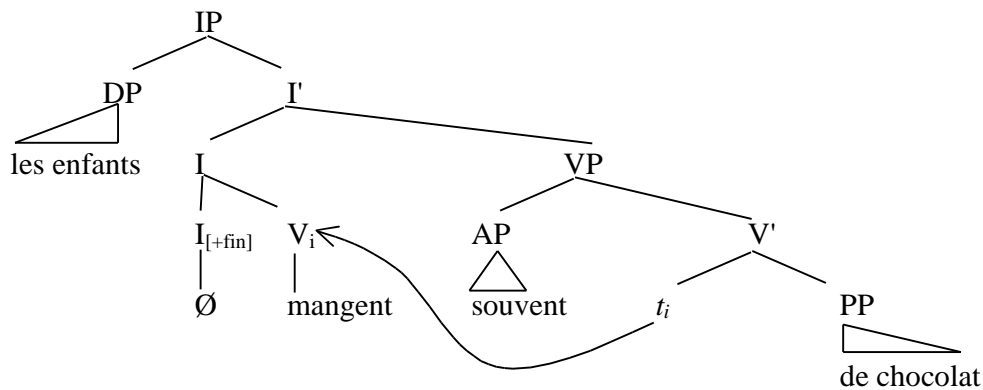
So: French main verbs, and English auxiliaries and modals, appear to the left of VP-adverbs, negation, and floated subject quantifiers. In English, this position is I.

BUT: *not all French main verbs appear to the left of these things* -- only finite ones do. Infinitive French main verbs appear to the *right* of negation -- like regular English main verbs.

- 14. a. Ne pas manger de chocolate est une honte  
not eat.INF of chocolate is a shame  
"To not eat chocolate is a shame."
- b. \*Ne manger pas de chocolate est une honte  
(ne) eat.INF not of chocolate is a shame

→ This is the big clue about what might be going on here. It's only those French verbs that have Tense on them that appear to the left of negation, VP adverbs, etc. And what functional category is it that occupies this position in a left-headed language like English or French?

*Hypothesis:* In French, Infl has features on it that need to be checked by the verb. This triggers the French verb to move from its base-generated position as the head of the VP, and attach (*adjoin*) itself to the Infl head, where it can check the features. In so moving, it will cross negation, VP-adverbs and floated subject quantifiers, all of which appear just to the left of the VP.



This resolves a big problem which we'd have to face up to without a notion of 'movement':

→ every verb phrase must have a head

→ if the finite verb were base-generated in the I position in French, how could it project a verb phrase? yet we obviously have one (witness the presence of the object, VP adverbs, location of verb in infinitive clauses, etc.)

→ This way, we base-generate the sentence with everything in its 'logical' place, so we see how English and French are underlyingly the same, and then we permute it a bit, via movement, to satisfy the features of I, which differ between French and English.

One more respect in which French main verbs and English auxiliaries behave alike: in questions, both can appear to the left of their subject:

15. a. Parlez-vous français?  
Speak.2FL you.FL French?  
Do you speak French?
16. a. Do the children all eat chocolate?  
b. Can the children all eat chocolate?  
c. Will the children all eat chocolate?  
d. May the children all eat chocolate?  
e. Would the children all eat chocolate?  
f. Should the children all eat chocolate?  
h. Might the children all eat chocolate?  
i. Have the children all eaten chocolate?  
j. Are the children all eating chocolate?

Of course, English main verbs may not appear to the left of the subject, whether or not there's also an auxiliary:

17. a. \*Eat the children chocolate?  
b. \*Eat the children can chocolate?

What head-position appears to the left of the subject in English and French?

If, in order to form a question, C acquires some new features (e.g. changes from being [+Decl] to being [+Q]) and if these new features need I to move up to C to be satisfied, why then we can explain the French and English facts in one fell swoop.

→ in French, I moves to C, and because the verb has to move to I to make I happy, we see V-to-I-to-C movement, giving VSO order

→ in English, I moves to C, and because the verb has not moved to I, we end up with Aux-S-V-O order

#### 4 Morphemes vs. movement?

In some languages, rather than move I to C to form a question, one simply inserts a lexical item -- a "question particle" into C. Apparently, in such languages, this is as good as moving the I up there (Japanese and Irish Gaelic are languages like this).

Hypothesis: The [+finite] feature in I (in French) and the [+Q] feature in C need *phonological support*: they need to have a phonologically robust item jump in there and fill them in. There are two options:

18. a) the features can attract phonologically rich items from the projection below (this is V-to-I in French, and I-to-C in French and English)
- b) the features can be directly spelled out by a question word

There's another place where we can see this in operation: in French passé composé clauses.

19. a. Jean a souvent mangé de chocolat.  
J has often eaten chocolate
- b. Les enfants ont tous mangé de chocolat.  
The children have all eaten chocolate
- c. Jean n'a pas mangé de chocolat.  
J. has not eaten chocolate

Here, as with the infinitive clauses, the main verb appears to the right of negation, subject quantifiers and VP-adverbs -- so it hasn't moved up to I. Why not?

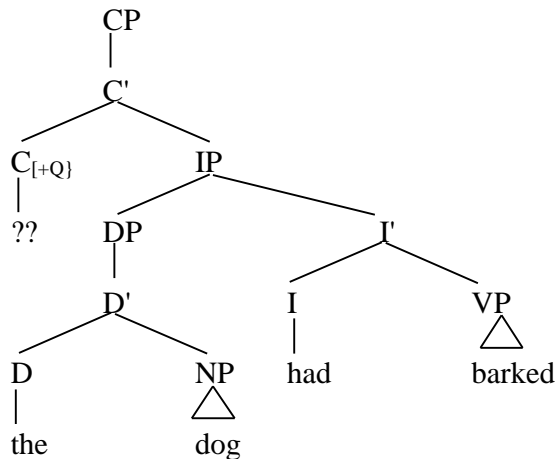
#### 5 The Structure Preservation Constraint, the HMC, and Bare Phrase Structure

Why does I attract V, when it needs phonological content? Why shouldn't it attract, for instance, the VP-adverb that appears in between the verb and I? It clearly does not. Nor does the [+Q] C attract the subject; it only attracts I. What prevents it from doing so?

A hypothesis: there's a constraint on syntactic structures, the *Structure Preservation Constraint* says that maximal projections (XPs) may only move to Specifier positions, and heads may only move to head positions.

Essentially, this means, if you're a moving phrase, you always have to be a phrase, and if you're a moving head, go somewhere where you'll continue to be a head.

→ So, if you're a [+Q] C looking down the tree, saying, please, please, someone get up here and help me out, the closest structural thing — the subject — is off-limits, because it's an XP. And structurally, what's the next closest thing?



*NOT*, for instance, the D head of the subject — that's embedded a whole maximal projection's worth below you. The closest head to C is the head of its sister: I. So the rule is: bring the needy head the closest available thing, or, to put it the other way around:

The Head Movement Constraint: A head X may only move to the minimally c-commanding head position. (this was discovered and formally characterized by Lisa Travis)

Minimal c-command:  $X$  minimally c-commands  $Y$  iff  $X$  c-commands  $Y$  and there is no  $Z$  such that  $X$  c-commands  $Z$  and  $Z$  does not c-command  $Y$ .

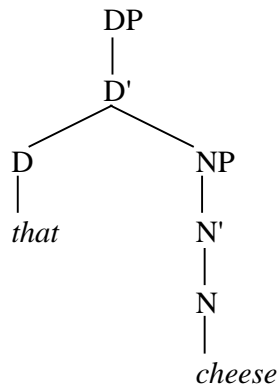
Consequently, a head may only move one step up the tree at a time, no 'skipping' intermediate heads. V cannot move directly to C to satisfy C's features; if we see V up in C, it must be because the V moved up to I, which then moved to C. Similarly, I cannot move to the subject D position, because D does not c-command I. (DP does, but the structure preservation constraint prevents I from adjoining to DP).

### Bare Phrase Structure:

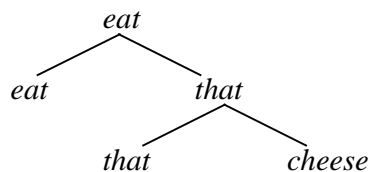
Just a nod in the direction of BPS:

Chomsky has adopted an idea of Peggy Speas' about phrase-structure creation to the effect that rather than (necessarily) projecting only category information to create a label, the head of a phrase projects *everything* (that is, it's its own label). And further, it only projects if there's a branching node; the distinction between a "head" and a "phrase" is moot for non-branching phrases. Essentially, the idea is that we can define "head" and "phrase" by looking at the structure around a given item.

For example: let's say you wanted to make the phrase, "that cheese". In X' theory, you'd have to project the N "cheese" to a bar-level and an NP level, and then that whole NP would be the complement to a D "that", which would project to a D' and then a DP:



In BPS, on the other hand, you'd have *cheese*. All you want to do is Merge it with *that*, so that's what you do. *That* is the head of the structure, so you create a set, {that, cheese}, and you label it by making it a subset of a two-member set whose other member is *that*: {that, {that, cheese}}. This set you could now Merge with a verb like *eat*, to create {eat {that, {that, cheese}}}; which you would label with its head, *eat*: {eat, {eat, {that, {that, cheese}}}}. The relevant tree notation would look like this:



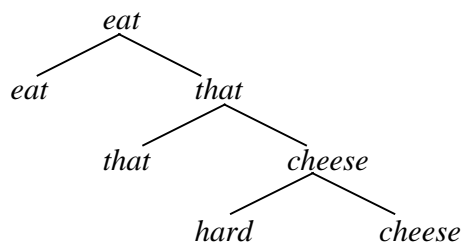
And now to define a phrase and a head:

A *phrase* is an element that is not dominated by a copy of itself.

A *head* is an element that does not dominate a copy of itself.

So *cheese* will count as both a head and a phrase. The lower *that* will be a head; the higher *that* and everything it dominates (really, the minimal set which includes the higher *that*) will be a phrase.

Note: if we had created *eat that hard cheese*, *cheese* would have projected to create a phrase that included *hard*, meaning that the lowest instance of *cheese* would no longer count as a phrase, but only as a head:



Notice, of course, that in BPS it's no longer a mystery why the features of the head project to the phrasal level: the phrase label is nothing but a copy of the head, so of course it'll have all the features the head has. What is perhaps more of a mystery is that category-style information seems to be relevant at all, distributionally speaking.

Even for people who regularly assume BPS, though, it's too much trouble to draw trees with lexical items at all the nodes, so they just use regular category labels too. But that's why you'll see some trees here and there where an apparent head doesn't project an associated phrase: in BPS, such a head is both a head *and* a phrase.

But now, back to the Structure Preservation Constraint: Consider what happens in BPS if you take a head (e.g. "cheese") and move it into a specifier position? According to the definition, it *becomes a phrase* — it is no longer dominated by a copy of itself. Similarly, if you take a phrase and adjoin it to a head, you *change the head to which you are adjoining* into a phrase. So we might no longer need to assume heads vs. phrases as primitives in the SPC: we just have to say that an item may not change its phrasal status via movement, to get the same effect. (Does this work for every kind of movement we've so far seen? What about head movement?)

For the purposes of this course, please keep drawing at least the heads and maximal projections of the heads as we've been doing; draw in bar levels if you want to. But don't give me trees where there are heads with no phrases (unless you write your paper on some head/phrase/BPS related issue, of course!!)

#### **Homework:**

- 1. Think about the English auxiliary verb *do*. When do you see it? What can you say about it? (no need to write anything, but I want you to have thought about it before next Tuesday)**
- 2. Read "Subjecthood and Subject Positions" by James McCloskey**
- 3. Photocopy "Subjects and Subject Positions in Irish", also by James McCloskey, before next Thursday. The paper is available in the shelf labelled "Ling 503" outside Andy Barss' office in the Linguistics department, Douglass 208, in the tall slender vertical shelving to the left of his door.**