

July 17, 2003

CLASS 9: Operators and A'-Movement

Motivation for Wh-Movement

Given that we want to **explain** the properties of language, we should now ask us **why Wh-phrases have to move** to form questions (in English). We have made use of **Checking Theory** before, arguing that a **head** and the **specifier** of its projection enjoy a particularly close relationship. This is borne out in **identical features** that must **match** to be **checked**. So: **[Wh]-feature?**

- (1) a. [CP What_i did-C [IP you t_k [VP read t_i yesterday]]]?
 ↑Wh ↑Wh
 b. [CP [Which book]_i did-C [IP you t_k [VP read t_i yesterday]]]?
 ↑Wh ↑Wh

Assume that the **interrogative C-head** bears a Wh-feature, [Wh], that must be checked against a linguistic expression in its specifier, the Wh-phrase (*who*, *what*, *which* N etc.). At the time of C-insertion (Merge), “naked C” has an unchecked Wh-feature. The next step in **I-to-C-movement** to make the **strong C active**. Then some element also carrying [Wh] must move to SpecCP — this is **Wh-movement**: movement of a Wh-expression to check the **specifier-feature [Wh] of C**.

If the Wh-expression is **complex**, as in (1b), we would still say that the **Wh-word** itself carries [Wh] — and it **percolates** through the entire projection (cf. *V-features on I*). This is not the easy way out, in fact it's what we must assume anyway, even for **bare Wh-phrases** (cf. *Case on DP*):

- (2) a. D_[Wh]
 |
 what
 b. DP_[Wh]
 |
 D'
 |
 D_[Wh]
 |
 what
 c. DP_[Wh]
 |
 D'
 |
 NP
 |
 which book

Economy, Pied-Piping and Uniformity

If any of the structures in (2) are correct, we would, once again, have to **move more** than we **minimally** should: if movement takes place to satisfy a feature [Wh], why not just move the **feature by itself**, or maximally the **lexical element/category** it “belongs to” (viz. **Economy**)?

An obvious answer would be: “Because it simply doesn't.” But that's hardly explanatory. Instead we can appeal to **phrase structure properties**: *A chain must be uniform with regard to phrase structure status (Uniformity Principle)*. Thus we'd get the following **ill-formed structures**:

- (3) a. * [CP [D **what**]_i will_k [IP you t_k [VP read [DP [D' t_i]] tomorrow]]]?
 b. * [CP [D **which**]_i will_k [IP you t_k [VP read [DP [D' t_i **books**] tomorrow]]]?

The moved element is a **head** — but the type and the landing site of movement is **phrasal**: head movement cannot target a specifier position and it can't skip intervening heads. And by virtue of filling a specifier slot, the moved element must be a **maximal projection**. (Note that we'd have to say something like this for the structure in (2a) also — yes, it's a head, but it clearly is the maximal projection of a head also, regardless of what label we give it.) So it looks like **Wh-movement is phrasal**. And the **licensing conditions** differ from head movement: it can skip specifier positions along the way, thus be not as locally constrained as head movement (**HMC**).

But there is another sense in which the desired Economy notion can be explored: Move only the features **if possible** — in other words: **Move the smallest unit possible**. If it's just a feature, fine — we can't see it anyway (think of percolation from V to I). But more often than not, grammar requires that we take along stuff, feature-movement **pied-pipes** additional material. Consider:

- (4) a. [DP/PP **Who**] are you talking to *t*? (4') a. * [DP/PP **Whom**] are you talking to *t*?
 b. * [PP **To who**] are you talking *t*? b. [PP **To whom**] are you talking *t*?
 c. * [VP **Talking to who**] are you *t*? c. * [VP **Talking to whom**] are you *t*?

In some instances, the preposition can be **stranded**, in others it can't: (4a) vs. (4'a). This is most likely to be **stylistic variation**, where a more formal expression is subject to more formal (read: **prescriptive**) constraints, the Wh-object forms *who* (pied-pies **D/DP**) vs. *whom* (pied-pipes **PP**).

- (5) a. **Whose class** do you like *t* best? (6) DP
 b. * **Whose** do you like *t* class best? D(P) ← D' ← N(P)
 c. * **Who** do you like *t*'s class best? *who* ← D ← 's ← class

Genitive 's is a determiner D-element that attaches to *who* and **cannot be stranded**.

Operators and A'-Movement

After all this, two questions come up: **Wh-subjects** and **interrogative Operators** ...

- (7) a. Who read the book?
 b. * Who'd/did read the book?
 (8) a. [CP Who_i Ø [IP t_i Ø [VP read the book]]]?
 b. [IP Who Ø [VP read the book]]]?
 (9) a. Is it raining?
 b. **Whether** had you rather lead mine eyes or eye your master's heels? (EME)
 (10) [CP XP_[Wh] / Op_[Wh] C_[Wh] [IP ...]]

Homework: Exercise 10 [be short in your answers, no more “Merge this and that...”]

- A. ☞ Review operators/A'-movement by going over chapter 6 again.
 B. ☞ Prepare next class by thoroughly reading pp. 151-161 (chapter 7).
 C. ✎ Exercise XI in Radford: pp. 144-145, (3a-b), (6 or 7a-b) and (8 or 9a-b).
 D. ✎ Exercise XII in Radford: p. 149, pick any three.