

# Syntactic Theory 2

## Week 6: Movement and Economy

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- We last landed on a theory in which iterated applications of Merge yielded syntactic structure, and Move was just another instance of Merge (“internal merge” or “re-merge”):

(1) Merge(like, John) = [<sub>like</sub> like John]  
 Merge(*v*, like) = [<sub>v</sub> *v* [<sub>like</sub> like John]]  
 Merge(Mary, *v*) = [<sub>v</sub> Mary *v* [<sub>v</sub> *v* [<sub>like</sub> like John]]]  
 Merge(T, *v*) = [<sub>T</sub> T [<sub>v</sub> Mary *v* [<sub>v</sub> *v* [<sub>like</sub> like John]]]]  
 Merge(Mary, T) = [<sub>T</sub> Mary [<sub>T</sub> T [<sub>v</sub> Mary *v* [<sub>v</sub> *v* [<sub>like</sub> like John]]]]]  
 Merge(C, T) = [<sub>C</sub> C [<sub>T</sub> Mary [<sub>T</sub> T [<sub>v</sub> Mary *v* [<sub>v</sub> *v* [<sub>like</sub> like John]]]]]]]

- The Extension Condition/No Tampering Condition states that we must consistently Merge at the root, meaning that that the subject raises from Spec,*v*P position to Spec,TP right after the T merges with *v*P
- Additionally, the Inclusiveness Condition forces us to abandon bar levels and traces, because these are not part of the Numeration that feeds the derivation
- We assume that lexical items enter the derivation with **features**. Merge occurs to satisfy the feature of one lexical item, i.e., T merges with V because T has a [V] feature. Case, selection, etc. are all features of specific lexical items that must be checked through the course of the derivation
- In this lecture, we’re going to look at considerations of Economy. We’ll look at three different proposals for what “drives” feature movement from Chomsky (1995).

### 1 Economy and Last Resort

- **Last Resort:** Don’t do an operation unless the derivation would be illegitimate at LF or PF
- Chomsky (1995) on *do*-support:
  - (2) a. John [<sub>PsT</sub>] write+ [<sub>PsT</sub>] books
  - b. \*John did write books

- c. \*John {PstT} not write+[Pst] books
- d. John did n't write books

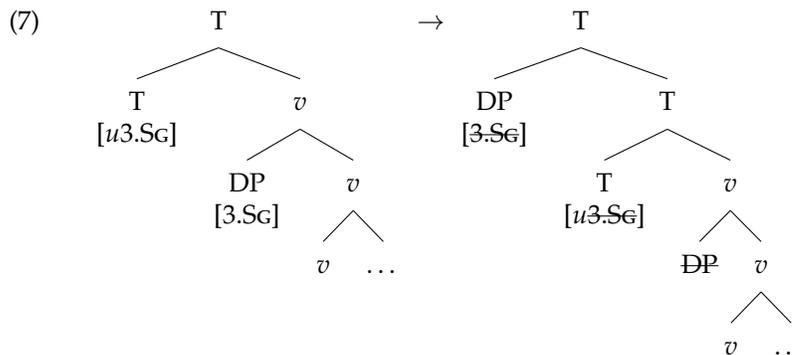
- Why is *do*-support blocked in (2-b), but available in (2-d)?
  - In GB-speak, (2-c) is ungrammatical because the trace of T is not properly governed (i.e., it's governed by C, and it's not c-commanded by its antecedent, thus it violates the ECP). For that reason, we do *do*-support just in case the derivation would fail if it didn't occur (i.e., T's features aren't morphologically hosted).
  - However, there is no reason to insert *do* in (2-d), so Economy considerations rule it out completely.
  - Resumptive pronouns in English are also argued to be Last Resort phenomena. They are only used when a lower copy can't be realized as null.<sup>1</sup>
- (3) a. This is the man that I like ~~the man~~  
 b. \*This is the man that I like him
- (4) a. \*This is the man that nobody remembers whether I like ~~the man~~  
 b. ?This is the man that nobody remembers whether I like him
- Does Last Resort cause a "look ahead" problem? How do we know to insert a resumptive pronoun in the embedded clause, given properties of the higher clause? Either the derivation somehow "knows" what's coming up in the next higher clauses, or Last Resort operations apply countercyclically. Neither is a good solution

## 2 Greed

- Chomsky (1995) solves this by replacing Last Resort with Greed
- (5) **Greed:** Movement occurs to satisfy a feature of the moving object
- (6) \*[<sub>TP</sub> John is likely [<sub>TP</sub> ~~John~~ is ~~John~~ a hero]]
- This violate Greed because *John* first moves to the embedded Spec,TP to check its Case feature. It no longer needs to move, so it cannot move by Greed (= **freezing effect**).
  - However, we might not need Greed to explain these facts. We've been assuming that the EPP is essentially a [D] feature, i.e., Spec,TP need to have a DP in it. However, instead, let's suppose that all features are checked by being "paired up" with another feature. A feature that is **uninterpretable** needs to be paired with a feature that's **interpretable**, otherwise the uninterpretable feature will lead to an illegitimate LF representation.

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<sup>1</sup>There's a significant camp that argues that resumptive pronouns are not grammatical at all in English, and thus this is not an appropriate analysis. See McCloskey 2006 for a review on resumption.



- Supposing that features need to be paired up in order to be checked, and suppose that Case is uninterpretable on the matrix T. We then explain why (6) is bad without Greed. The matrix T has an uninterpretable Case feature that goes unchecked. Raising the embedded subject to the matrix Spec,TP wouldn't work either, because it already had its Case feature eliminated.
- However, successive cyclicity is a bigger problem for Greed:

(8) John is likely ~~John~~ to seem to himself ~~John~~ to ~~John~~ be nice

- Why does John move to the specifier of the intermediate clause? It's non-finite, so *John* isn't moving to get Case here. Instead, the DP seems to move because the T needs it to. For that reason, Lasnik (1995) replaces Greed with:

(9) **Enlightened Self-Interest:** XPs move either to check their own feature, or the feature of the target

- Let's re-examine successive cyclic A'-movement:

(10) Who did you think ~~who~~ Mary thought ~~who~~ arrived?

- With ESI, we would have to suppose that each intermediate CP has a [*uWH*] feature. The *wh*-phrase isn't checking its feature in the intermediate Spec,CP positions (otherwise, it would be frozen). But, is this right?:

(11) \*John thought who arrived

- With an ESI theory, we have to say something funny like intermediate CPs have a [*WH*] feature just in case another C will have this feature as well. This reintroduces the look ahead problem. We'll (maybe) fix this with phase theory.

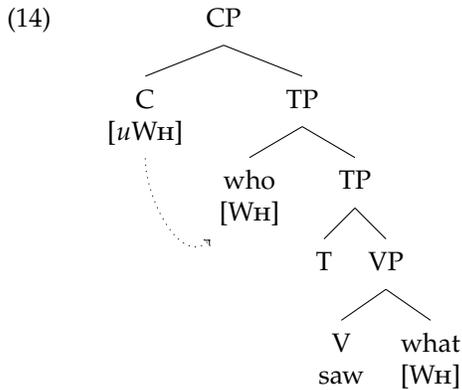
### 3 Relativized Minimality and Agree

- At this point, we don't have an explanation for **superiority effects**:

- (12) a. Who saw what?  
 b. \*What did who see?

- Multiple *wh*-constructions imply that overt *wh*-movement is not driven by the *wh*-operator's need to check a feature. So, *wh*-movement is to check the *wh*-feature of the  $C^0$ . How does the grammar choose the "right" *wh*-operator to move?

- (13) **Attract:** Upon merging a head with an uninterpretable feature, search the tree to find something with a matching feature, and move it up



- On this view,  $C^0$  attracts the DP that's closest. Thus, a head will always attract the phrase with the matching features that is highest in the tree.
- Let's remember the analysis of existential constructions that we had a few weeks ago:

- (15) Spellout: There is [PP a man<sub>[NOM]</sub> here]  
 LF: There+a man<sub>[NOM]</sub> is [PP ~~a man~~ here]

- We want to say that the nominative case of the DP is assigned from T long-distance, and at this point, the only mechanism we have to use for this is movement.
- However, if this is the LF representation, then we expect that expletive subjects should scope over negation. They don't, however!

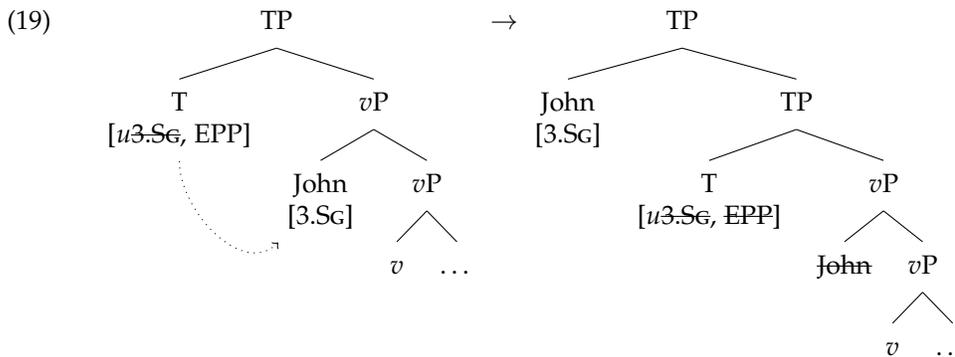
- (16) There is not a man here
- a.  $\neg\exists x[\text{man}(x)\&\text{here}(x)]$   
 b.  $*\exists x[\text{man}(x)\&\neg\text{here}(x)]$

- Similarly, we find that positive polarity items are awkward in the existential subject position, and NPIs are licensed. It really doesn't look like the subject is covertly moving. How is its Case getting checked, then?

- (17) a. ?\*There is not some man here  
 b. There isn't a red cent here.

- To explain these, Chomsky (2000) proposes to replace Attract with Agree. Agree is a new operation in which a head probes its c-command domain for a phrase that has features it's looking to check. Upon finding it, it may then check its features. AFTER checking features, movement is optional, depending on whether the feature has a "generalized EPP feature"

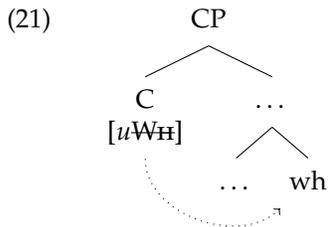
- (18) John ate the sandwich  
 Merge(the, sandwich) = [the the sandwich]  
 Merge(ate, the) = [ate ate [the the sandwich]]  
 Merge(v, ate) = [v v [ate ate [the the sandwich]]]  
 Merge(John, v) = [v John<sub>[3.SG]</sub> [v v [ate ate [the the sandwich]]]]  
 Merge(T, v) = [<sub>T</sub> T<sub>[u3.SG, EPP]</sub> [v John<sub>[3.SG]</sub> [v v [ate ate [the the sandwich]]]]]  
 Agree(T, John) = [<sub>T</sub> T<sub>[u3.SG, EPP]</sub> [v John<sub>[3.SG]</sub> [v v [ate ate [the the sandwich]]]]]  
 Merge(John, T) = [<sub>T</sub> John [<sub>T</sub> T<sub>[u3.SG, EPP]</sub> [v John<sub>[3.SG]</sub> [v v [ate ate [the the sandwich]]]]]]



- With this theory, we can say that the subject of an existential construction is checking its Case through Agree long-distance. This also explain why the verb agrees with it, even though there's no apparent movement, either at LF or in the overt syntax. Notice that we still have an EPP as a generalization that subjects are required – we just don't have an EPP feature that drives movement after relating T and the subject DP

- (20) \*is a man here

- With the addition of Agree, the only thing movement does is check redundant EPP features that force movement! All feature checking is done through Agree. Furthermore, we don't need to posit covert movement to handle *wh-in-situ* cases either – the difference between overt and covert movement is the distribution of EPP features



- Have we abolished covert movement entirely? I'm not so sure.
- First, let's consider **Burzio's generalization** (Burzio 1986). There are no verb that assign accusative case without assigning the agent theta role and vice versa, i.e., we have no verbs that have agents but lack accusative case:

(22) a. \*It arrived John.

- If so, then that means *v* assigns both Accusative Case and the Agent theta role
- One possibility is that *v* Agrees with the object DP and assigns Accusative Case *in-situ*, i.e., there's no higher copy of the object in Spec,*v*P, here demonstrated with ECM:

(23) The lawyers [<sub>vP</sub> *v*<sub>[uA $\epsilon\epsilon$ ]] proved [<sub>TP</sub> the defendants<sub>[A $\epsilon\epsilon$ ]] to be guilty]</sub></sub>

- However, there is evidence that there is an unpronounced copy in Spec,*v*P:

(24) The lawyers [<sub>vP</sub> ~~the defendant~~ *v* proved [<sub>TP</sub> the defendant to be guilty] during each other's trials]

- The ECM subject is able to bind out of the embedded TP into a matrix VP adjunct. However, it does not c-command it in its position (Postal 1974, Lasnik & Saito 1999)
- Objects can QR over other quantifiers, which suggests that there is a copy in the main clause, given that QR is clause-bound:

(25) The lawyers proved each defendant to be guilty during some trial  
 $\forall \prec \exists$   
 $\exists \prec \forall$

- Similarly, the object can license NPIs and induces oddities with PPIs, again, suggesting a higher copy at LF:

(26) a. ?The lawyers proved no defendant to be guilty during some trial  
 b. The lawyers proved no defendant to be guilty during any trial

- The issue of overt and covert movement still seems to be alive, alas. There are differences between the two.

- What kinds of things block Agree? We know that A'-movers can't leap over other A'-movers (27), A-movers can't move other A-movers (28), and heads can't leap over other heads (29): (**Relativized Minimality**, Rizzi 1990)

- (27) a. Who saw what?  
 b. \*What did who see?  
 c. \*Who did you wonder when Mary saw?
- (28) a. John seems ~~John~~ to be likely ~~John~~ to ~~John~~ like Mary  
 b. \*Mary seems John is likely ~~John~~ to ~~John~~ like ~~Mary~~  
 c. \*Mary seems it is likely to like John
- (29) a. Did you eat?  
 b. \*Eat did you?

- In an Agree framework, we will say that the probe conditions its search based on what features it's trying to check – so, movement for Case should move the closest thing with a Case feature, etc.
- This raises an interesting question regarding A'-movement. What is a *wh*-feature, for instance? If we understand the relation as C searching for a scope-bearing operator, we can explain **intervention effects**, a phenomenon in which logical operators block wide-scope of other operators (including *wh*-operators):

- (30) a. \*C Koi-bhī kis-se laṛna nahī cāhtā hai?  
 Nobody who-OBL fight NEG want PRES  
 intended: 'Who does nobody want to fight?' (Hindi, Malhotra 2009)
- b. \*C John-hī kyā khāegā?  
 John-only what eat.FUT  
 intended: 'What did only John eat?' (Hindi, Malhotra 2009)

- We will turn to issues of successive cyclicity and islands when we discuss Phase Theory and how it interacts with Agree next time

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