

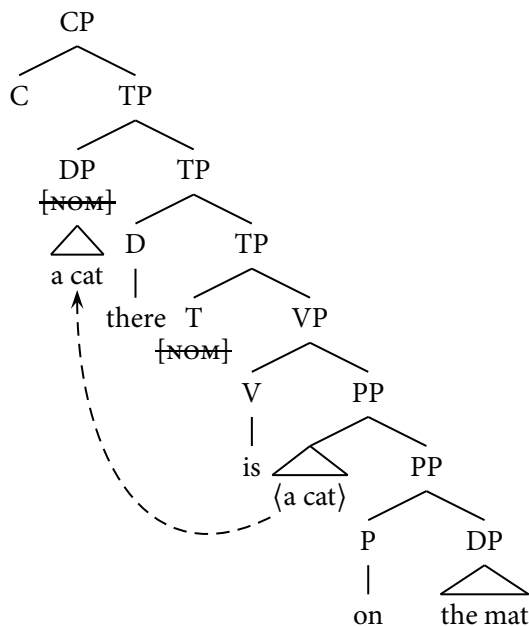
Features, checking, and Agree

1 Checking

- In our discussion of Case, we adopted the view that nominal elements (DPs) enter the derivation already specified for Case.
- Case on these elements is checked against the Case feature on some other head.
- This must happen by LF and so can happen covertly. This move was one of the steps necessary for the elimination of S-structure.
- Covert Case checking may well explain certain phenomena that are harder to understand under GB.
- Existential constructions, for example, might be explained as covert movement of correlate to a position where it can check Case:

This was part of [Assignment 1](#).

(1) Mary thinks that [TP there is a cat on the mat].



I'm reverting back to category labels here since we aren't particularly interested in BPs issues right now. But note that we are still assuming that's what is really underlying this tree.

- Additionally, it may explain the ability to bind into certain verb phrase adjuncts by internal arguments:
- (2) Mary [VP [VP entertained the men_i] [PP during each other_j's vacations.]]

See the [Case configurations and PRO](#) handout.

- But there is a worrying question lurking behind this: Why should Case features need to be licensed if they enter the derivation from the Lexicon?
 - Under the older Case assignment view, DPs needed to receive a Case feature in order to be licensed. Caseless DPs would violate the Case Filter at S-structure.
 - Under the checking approach, DPs have these Case features when they are drawn from the lexicon. We have merely stipulated that Case features are not interpretable at LF.
- Another issue stems from Procrastinate, the economy principle that requires movement to be delayed until after Spell Out if possible.
 - The problem is that Procrastinate does not really give us a handle on why overt movement should be less economical than covert movement.
- Consider the case of object movement in English:
 - Objects move to SpecvP to check accusative Case. This happens *covertly*, after Spell Out.
 - As far as the interfaces are concerned, nothing would go wrong if this happened *overtly*. Case on the object would still be checked before LF.
 - This only violates Procrastinate, whose only job it is to block movement before Spell Out.
 - There is no consideration here about *why* overt movement should be more costly than covert movement. Procrastinate just brute-force says it is.
- This is an issue for the UNIFORMITY CONDITION, the requirement that operations available before Spell Out be the same as those available after Spell Out.
 - Treating overt movement as less economical than covert movement through a principle like Procrastinate tacitly treats them as different operations.
 - We don't want to put the burden of distinguishing them on Spell Out itself, because that's not essentially different from treating it like S-structure.
 - TL;DR: We're basically just stipulating that covert movement is different than overt movement, and we shouldn't do that.
- Finally, the Extension Condition gets violated by covert movement, which can target positions that are not at the root of the tree.
- We've had to stipulate that it only applies to overt operations of Merge:
 - (3) *Extension Condition:*
Overt applications of Merge can only target root syntactic objects.
- This also violates the Uniformity Condition. Merge should not be subject to different conditions after Spell Out.

Procrastinate is just a stipulation. We need to stipulate certain parts of the theory from time to time in order have a place to work from, but this particular one causes problems for other assumptions.

See Hornstein et al. 2005, section 2.4.

You may have noticed that we have been studiously avoiding discussion of the differences between overt and covert movement – because there shouldn't be any!

2 Feature interpretability

- To begin dealing with these issues, let us consider why movement should occur at all and what role features play in this.
 - One possible Minimalist answer: Movement exists because it's required by the interfaces.
 - But what are these requirements? A central idea is that this has to do with lexical features.
- Any lexical item will have several sets of features: Semantic, phonological, and formal (*i.e.*, syntactic) features.
- Phonological features are only legible at PF, and semantic features are legible only at LF. A convergent derivation will ensure that appropriate features are sent to the appropriate interfaces.
- Specifically, formal (*i.e.*, syntactic) features must be eliminated before the derivation reaches the interfaces.

The view that lexical items enter the derivation fully inflected is known as the LEXICALIST HYPOTHESIS. This view implies that lexical items are drawn from the lexicon with all of their phonological features. This is the view adopted by the traditional checking approach we've assumed so far this semester.

2.1 Interpretable and uninterpretable features

- Though we talk about it in terms of agreement between features, not all morphological inflection appears to be interpreted at LF.
- Consider DP-internal concord. In the following examples gender and number are interpreted only once, despite being represented three times.

(4) *Portuguese*: 'the beautiful cat(s)'

a. o gato bonito
the.M cat.M beautiful.M

c. os gatos bonitos
the.M.PL cat.M.PL beautiful.M.PL

b. a gata bonita
the.F cat.F beautiful.F

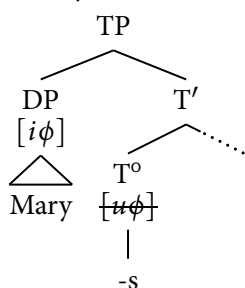
d. as gatas bonitas
the.F.PL cat.F.PL beautiful.F.PL

- While this information gets repeated at PF, it is not repeated at LF.
- So each word has a number and a gender feature, but only one such feature per DP gets interpreted at LF.
 - The feature interpreted at LF is called INTERPRETABLE.
 - The others are said to be UNINTERPRETABLE.
- Uninterpretable features are those that must be eliminated by LF. They are eliminated by being checked against interpretable features, which are not eliminated, or by entering into an appropriate relation with a relevant head.

See Section 3.1 for more on what this last point means.

- Consider how this might be applied to (4):
 - The nouns *gato* ‘cat (M)’ and *gata* ‘cat (F)’ enter the derivation with interpretable gender and number features. These will get interpreted at LF.
 - The adjective and determiner enter with uninterpretable number and gender features. These must be checked against the gender feature of the nouns to be eliminated and, thereby, will not be interpreted at LF.
- Subject–predicate agreement is thought to behave similar. T° bears uninterpretable ϕ -FEATURES – person, number, and/or gender – that must agree with subject in order to be checked:

(5) Mary loves John.



The singular–plural distinction might alternatively be introduced by a separate Num° head, which introduces an interpretable [SC] or [PL] feature.

T° combines with V° by some morphological rule.

An interpretable feature is denoted by a prefixed *i* and an uninterpretable feature is prefixed with a *u*.

2.2 Checking Case

- When we come to something more abstract like Case, which doesn’t seem to have any interpretation, we need to ask where the interpretable features are and where the uninterpretable ones are?
- First we need a quick and dirty way to distinguish uninterpretable features from interpretable ones:
 - If uninterpretable features are eliminated upon being checked, then uninterpretable features may participate in only one checking relation.
 - Interpretable features, on the other hand, should enter into multiple checking relations.
- Indeed, ϕ features on a subject must be interpretable because they enter into several relations.
- Participle agreement in Romance languages supports this view:

(6) [As alunas] parecem ter sido contratadas.
 the.F.PL student.F.PL seem.3PL have been hire.PPL.F.PL
 ‘The (females) students seem to have been hired.’

- The subject *as alunas* ‘the students’ agrees in person and number with the verb *parecem* ‘seem’.
- The subject also agrees with the passive participle *contratadas* ‘hired’ in number and gender.

Consider this while looking at the [French agreement data](#).

The uninterpretable ϕ -features are associated with T° and v° ; see (10) below. In Portuguese, the verbs move to these positions, explaining why the inflection appears on the verb.

- This suggests the interpretable ϕ -features on the subject can check the uninterpretable features of multiple heads.

- So how does Case work then?

- It stands to reason that Case on DPs is uninterpretable, since they can only have their Case feature checked once:

- (7) a. John_i seems [TP t'_i to [_{vP} t_i love Mary]].
 b. *John_i seems that [TP t'_i [_{vP} t_i loves Mary]].

This example also suggests that categorical D feature on a nominal is interpretable, since the same DP can check the EPP more than once.

- Assuming non-finite *to* does not assign Case in (7a), the contrast in (7) can be captured by if *John* has its nominative Case feature checked in the embedded clause in (7b) but cannot also check Case in the matrix clause.

- If Case assigners have a Case feature, then it may also be uninterpretable. Consider this ditransitive:

- (8) Mary gave a book (*to) John.

Case assigners never exhibit a reflex of Case, so they may not actually have a Case feature themselves; see below.

- The preposition is necessary to check Case on *John*.
- Once v^o checks Case on *a book*, it can no longer check Case on John.
- Since v^o only checks Case on DP, this suggests the Case feature on v^o must be uninterpretable.

It stands to reason, then, that double object constructions have v^o s that bear more than one uninterpretable Case feature.

3 Agree

- But how are these features actually checked? We can keep the movement view, but we still have the issues with overt and covert movement discussed above.

It's actually hard to see how the movement view would work cases of concord like (4). Could the noun move into the specifier of an adjoined AP to check its ϕ -features?

- The modern view of checking assumes that lexical items enter the derivation fully specified for their features, but the features are not fully VALUED when they enter the derivation.

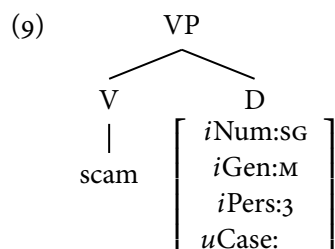
- Only interpretable features are fully specified in the lexicon.
- Uninterpretable features acquire their values during the derivation.

- This valuation is effected by a new operation, AGREE.

See Chomsky 2001, among others.

3.1 Valuation

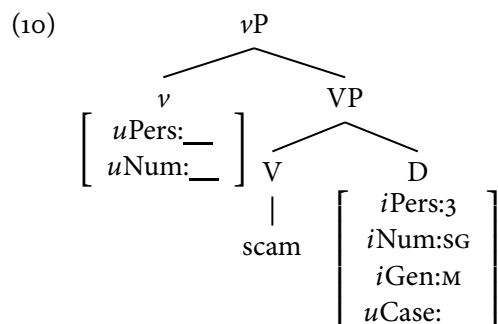
- Let us assume, as mentioned, that uninterpretable features enter the derivation unvalued.
- For instance, a pronoun might enter the derivation with its ϕ -features specified, but with no specification for Case.



This is a non-lexicalist approach, which assumes that inflection and phonological form are not determined until after the syntactic derivation has concluded. See Halle and Marantz 1993 and Embick and Noyer 2001.

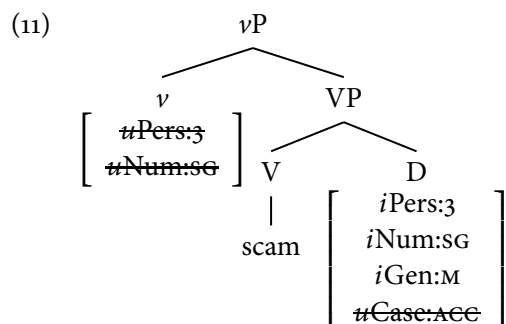
- When v^0 merges, it comes with uninterpretable ϕ -features that must be valued by Agree.

This is of some relevance to the French agreement data.



- v^0 is said to be a PROBE, a head with uninterpretable features.
- The object is a potential GOAL, an element with matching interpretable features.
- A probe will search in its c-command domain to find an appropriate goal.
- Thus, in the example above, v^0 will probe its c-command domain and find the pronoun and thereby value its features.

In keeping with Relativized Minimality, a goal is only accessible if no element with the relevant set of features intervenes.



- A somewhat weird assumption is that, because Case assigners (like v^0) never express Case morphologically, they do not actually bear interpretable Case features.

In other words, Case agreement does not actually happen.

- Valuation of uninterpretable Case features is just a reflex of having entered into an Agree relation with v^o or T^o or P^o .
- The form of the pronoun is determined at PF after Spell Out.

4 Interim summary

- This system has a number of interesting consequences which we will look at below
- A big one, looking at (11), is that movement is unnecessary for feature checking.
- The object can remain *in situ* and have its Case feature checked. There is no need for Covert movement.
- This responds to the concerns raised at the beginning of this lecture:
 - We wanted to know why covert movement apparently behaved differently from overt movement.
 - Perhaps, though, it is possible to eliminate covert movement entirely – and the cover component! – entirely.
 - All movement, then, is trivially treated uniformly because there is no distinction.
- We'll look at some more of the consequences next time, including how this works with expletive constructions and how it gets around the Extension Condition.

4.1 Assumptions so far

- Feature checking is mediated through the operation Agree rather than a spec-head relation.
- Features now come in two varieties:
 1. Interpretable features enter the derivations with values that are interpreted at LF.
 2. Uninterpretable features enter the derivation without values and are uninterpretable at LF.
- To check a feature and make it an LF-legible object, an interpretable feature must receive a value by agreeing with a head that bears an identical feature.
- This leads to an appealing idea: Checking need not involve movement.
 - If movement is not a necessary component of checking, then we do not need covert movement to check features.
 - If there is no covert movement, then we need not worry about how the Extension Condition applies to covert movement.
- This has applications in several domains:

That means we may be able to get rid of it.

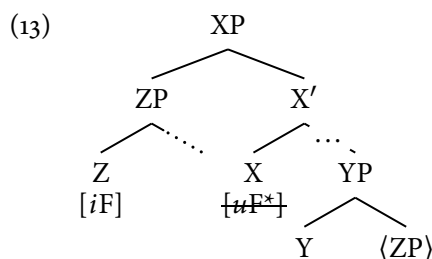
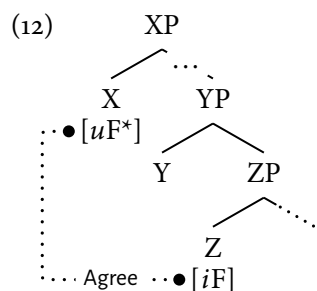
1. Expletive constructions
2. ‘Low’ subject and agreement
3. No covert binding

- Before looking at these Cases, though, let us see what it means for our movement system.

4.2 A brief note on movement in this system

- In our previous system, movement occurred in order to ensure that a feature was checked before Spell Out.
 - A strong feature was a feature that needed to be checked before PF.
 - The mechanism for checking was spec–head agreement.
 - The only way to make sure that checking occurred before PF, therefore, was movement before Spell Out.
- Under the Agree system, movement is still triggered by strong features.
 - Movement requires an Agree relation to be established first.
 - If some head X^0 bearing strong feature $[uF^*]$ agrees with a head Z^0 bearing $[iF]$, ZP will move to SpecXP.

In some recent variations, movement is triggered by a dedicated EPP feature, which just says that a particular head requires movement into its specifier.



- In this way, movement still relies on the checking relation. But there is a crucial difference:
 - Agree is a syntactic operation that occurs before Spell Out.
 - This means that *all* feature checking happens before PF.
 - So a strong feature cannot be a feature that simply needs to be checked by PF, since this is now trivially true of all features.
- One way of thinking about this is that movement is a way of showing at PF that a strong feature has been checked.

I think this is an idea expressed by Pesetsky and Torrego (2001).

4.3 Deletion of features

- Checking a feature eliminates it from the derivation so that it is no longer visible to LF.
- However, it cannot be the case that this deletion-by-checking totally removes the feature from the derivation.
- One issue I mentioned earlier is that deleted uninterpretable features express agreement on heads at PF. Thus it stands to reason these features survive to PF.

(14) as gatas bonitas
 the.F.PL cat.F.PL beautiful.F.PL
 ‘the beautiful cats’

- Another issue is that canceled features appear to count for minimality.
- In the following example, an expletive *it* checks its uninterpretable Case in CP₂ and subsequently moves to CP₃ to check the EPP in the matrix clause.

(15) *_{[CP₃ It seems [_{CP₂ that *t_i* was told Bill [_{CP₁ that Mary scammed him.]]]}}}

- Notice that the Case features on the matrix T^o and on *Bill* go unchecked in this configuration.
 - In principle the matrix T^o could enter into an Agree relations with *Bill*.
 - If Minimality holds over features, however, the deleted uninterpretable Case feature on *it* will block this relation from being established.

And remember that in Minimalism, minimality is relativized to features. This will be important again below.

Expletive *it*, unlike expletive *there*, bears Case features.

5 Agree in action

Let’s look at how Agree explains some of the phenomena that are weird with covert movement.

5.1 Expletives

- The Agree approach has the potential to explain how subject–verb agreement works in expletive constructions.
- Consider the examples below. The verb *seem* agrees with a DP in the non-finite clause, the CORRELATE of the expletive.

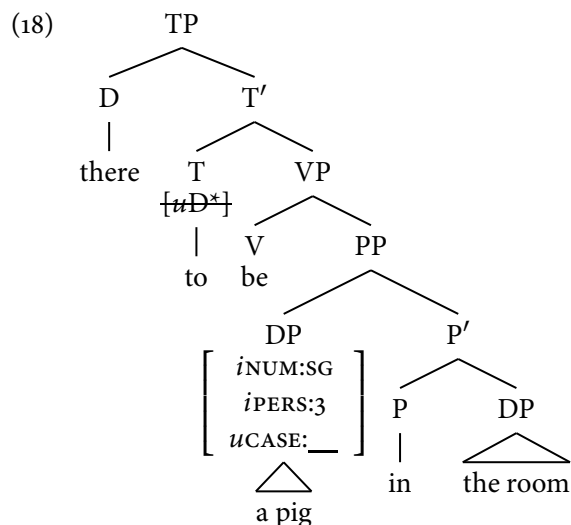
(16) a. There seems to be a pig in the room.
 b. *There seem to be a pig in the room.

(17) a. There seem to be three pigs in the room.
 b. *There seems to be three pigs in the room.

- This suggests that *there* does not itself bear any ϕ -features itself, only an interpretable D feature that can check the EPP features on each T^o.

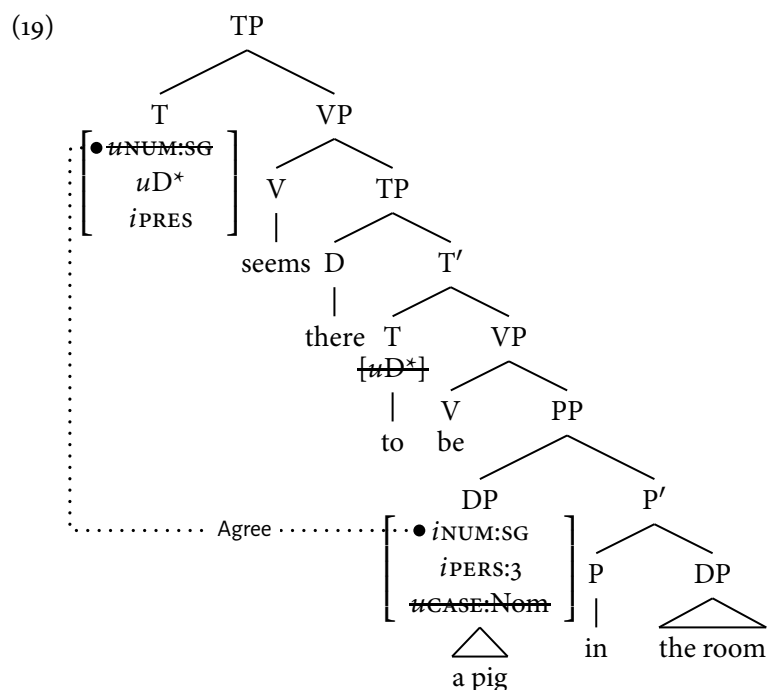
- Let's assume that *to* bears a strong [uD^*] feature that must be checked.
- This strong feature triggers insertion of the expletive *there* in SpecTP.

Let's also assume that there is no v^o to check Case in the non-finite clause.



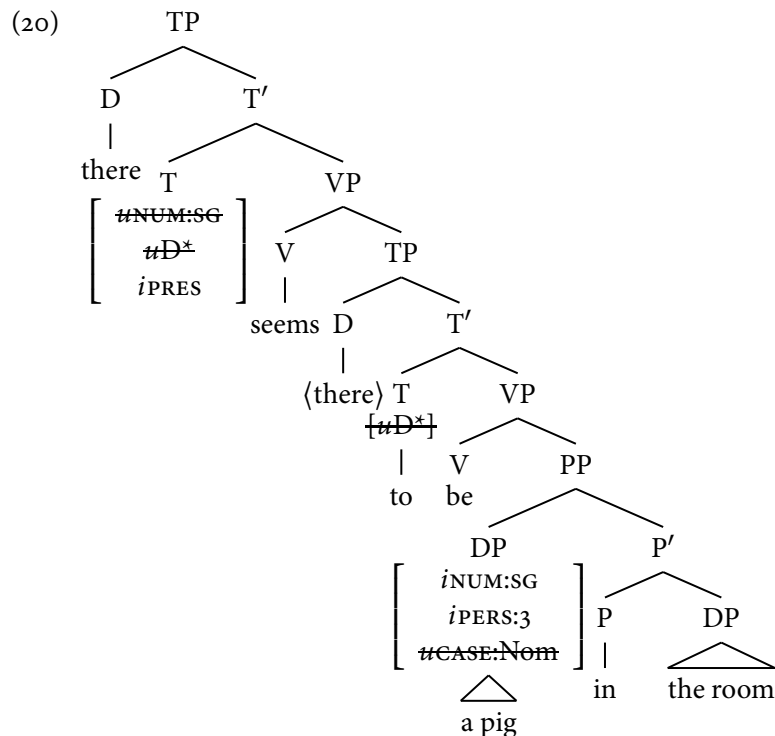
We have to make an assumption here that we merge new material (the expletive) rather than moving previously merged material (the correlate). This is a derivational economy condition, which we will discuss next week.

- Once the expletive satisfies the strong feature on *to*, we build the rest of the structure. The finite T^o in the matrix clause will enter the derivation with uninterpretable ϕ features that must be valued.
- The expletive itself doesn't have any ϕ -features, however.
 - Only the DP in SpecPP does, so T^o agrees with that.
 - T^o values Case on the DP in the process.



- However, the expletive *there* is closer for the purposes of satisfying the strong [uD^*] feature on T^0 .
 - Consequently, *there* moves to the SpecTP of the matrix clause.

Remember, minimality is relativized to features, and moving *a pig* over *there* would be a violation.



- There's no need for covert movement of *a pig* to SpecTP after Spell Out.
- The correlate has its Case checked by Agree without any movement at all.

5.2 Low agreement

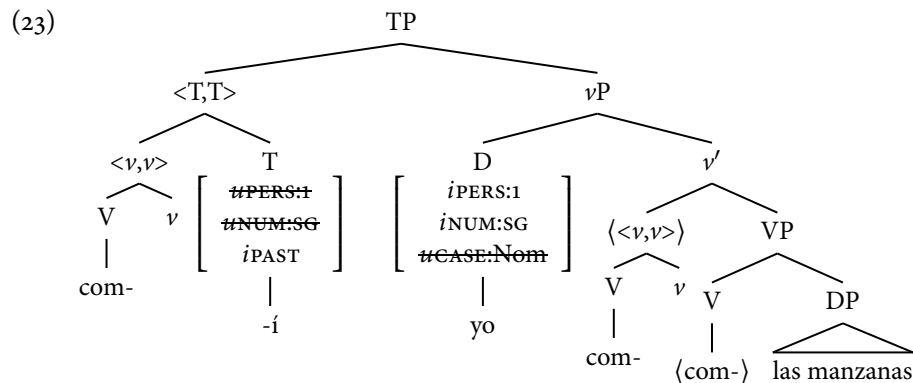
- Another thing this handles well is the fact that verbs still Agree with subjects regardless of whether they have moved overtly to SpecTP.
- Recall that some languages allow subjects to remain low in the structure. Spanish is such a language:

See the handout on the Theta domains [☞](#).

(21) Yo comí las manzanas.
 1SG.NOM eat.PST.1SG the apples
 'I ate the apples.'

(22) Comí yo las manzanas.
 eat.PST.1SG 1SG.NOM the apples
 'I ate the apples.'

- The verb agrees with *Yo* regardless of whether the subject appears in SpecTP.
- This can be explained if we assume that T^0 in Spanish always bears uninterpretable ϕ -features, but alternates in whether it bears an EPP feature.



It is standardly assumed that verbs move to T° in Spanish (Depiante and Vicente 2012).

- This may often explain certain agreement asymmetries that occur in some languages where agreement occurs only when the subject has moved to SpecTP.

(24) *Brazilian Portuguese (dialectal):*

- a. Alguns problemas apareceram
some.3PL problems.3PL appear.PST.3PL
- b. Apareceu alguns problemas
appear.PST.SG some.3PL problems.3PL
'Some problems appeared.'

This example was discussed on the handout about Word order variation and traces under the LCA.

- On this view, T° in (24a) bears strong ϕ -features, and in (24b), it simply lacks ϕ features altogether.

In this case, a default 3rd person singular agreement suffix appears.

5.3 No covert movement effects

- There are several places where, if covert movement to check features exists, we expect to see its effects.
- In Brazilian Portuguese, *wh*-movement creates the same sort of ambiguous binding configurations we have seen in English:

(25) Que fotografia de [si mesmo]_{i/k} o João_k disse que o Pedro_i viu?
what picture of self own the João said that the Pedro saw
'What picture of himself did João say that Pedro saw?'

- However, Brazilian Portuguese allows for the *wh*-phrase to remain *in situ*.
- When this occurs, it is not possible for *João* to bind *si mesmo* 'himself':

(26) O João_k disse que o Pedro_i viu que fotografia de [si mesmo]_{i/*k}?
the João said that the Pedro saw what picture of self own
'What picture of himself did João say that Pedro saw?'

- If we assume that *wh*-phrases move covertly to check a *wh*-feature on C°, the interpretation of (26) should be no different than the interpretation of (25).

- Covert movement should produce copies in the specifiers of both the matrix and embedded CPs.
 - *João* should therefore be able to bind the copy of *si mesmo* in the specifier of the embedded CP.
 - But this reading is not available in (26).
- If the *wh*-phrase remains *in situ* for the entire derivation, however, we would never expect *João* to bind the anaphor, since it is never in the correct binding domain.

6 Consequences

6.1 The Extension Condition

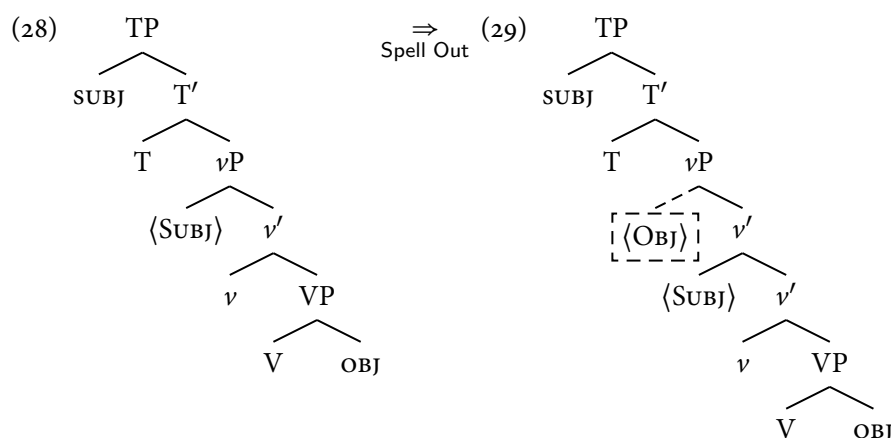
- If we eliminate covert movement from our system, we can simplify the Extension Condition:

(27) *The Extension Condition:*

Applications of Merge can only target root syntactic objects.

- Since covert movement no longer exists, and since movement is just Copy + Merge, the Extension Condition can be stated to apply to all applications of Merge.
- Previously, assuming covert movement, we were forced to say that material could move into middle parts of the tree, in apparent violation of the extension condition.
 - For instance, covert object required the introduction of an additional Spec ν P to accommodate this movement, even after ν P had merged with T⁰.

That is, there is no covert movement.



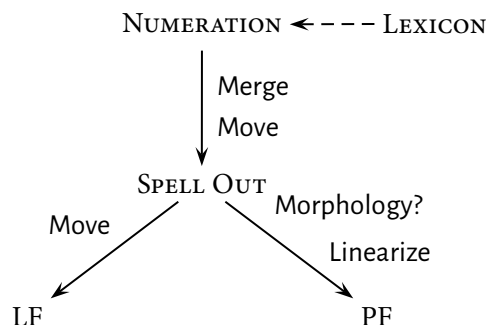
- Under Agree, things that we previously conceptualized as covert movement for checking are now replaced with valuation by Agree.
- This means that we no longer need to posit covert movement, and so there is no covert movement to violate the Extension Condition.

- Additionally, there is no need for economy conditions like Procrastinate. Movement will happen as soon as a corresponding strong feature enters the derivation.

7 The model

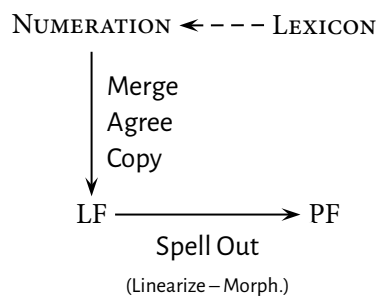
- Long ago, I introduced the idea of the Minimalist Y-model of the grammar.

(30) *A Minimalist Grammar:*



- If the Agree revision is on the right track, we no longer need the split to LF and PF.
- Now that there is no covert movement, the output the narrow syntax (the result of Merge, Agree, and Copy) can be sent to LF directly, since there is no need for covert movement.
- That material can then be sent to PF to be pronounced.
- This suggests a different version of the grammar than we have assumed so far:

(31) *A revised Minimalist Grammar:*



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