

The syntax & semantics behind Agree & Move

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1. Introduction: triggers for movement

- In older versions of minimalism, movement was taken to be driven by uninterpretable features. An uninterpretable feature on a head could trigger movement of an matching interpretable feature in its specifier.
 - This way two ununderstood problems (the existence of semantically vacuous material and the triggering of movement) could be reduced to one ununderstood problem (the existence of uninterpretable features).
- (1) We_[iφ: 1PL] seem_[uφ: 1PL] t_i to have arrived t_i

- Movement and agreement, this way, are ultimately semantically driven: only when the syntactic base structures deviate from what is (semantically) required at LF are additional syntactic operations triggered.
- Under current minimalism (already since Chomsky 2001) movement is not driven by uninterpretable features, but by an independent movement-triggering feature [EPP] that may apply in addition to Agree.

(2) Chomsky 2001: α can agree with β iff:

- α carries at least one unvalued and uninterpretable feature and β carries a matching interpretable and valued feature.
- α c-commands β .
- β is the closest goal to α .
- β bears an unvalued uninterpretable feature, which can be checked against α .

- (3) a. Agree \Rightarrow
- | | | |
|-------------------|--------------|------|
| $[\alpha_{[EPP]}$ | $[\beta$ | $]]$ |
| $[\bar{u}F]$ | $[iF]$ | |
| $[iK]$ | $[\bar{u}K]$ | |
- b. [EPP] \Rightarrow
- | | | | |
|--------------|-------------------|--------------|-------|
| $[\beta$ | $[\alpha_{[EPP]}$ | $[\beta$ | $]]]$ |
| $[iF]$ | $[\bar{u}F]$ | $[iF]$ | |
| $[\bar{u}K]$ | $[iK]$ | $[\bar{u}K]$ | |

- The current minimalist tradition differs from previous versions, where movement was indeed taken to be triggered by agreement-triggering features (uninterpretable features). The reason for this change, among others, lied in the fact that not every instance of agreement triggered an additional instance of movement.
- In particular, the existence of so-called Long-Distance Agreement (LDA) called for a disentanglement between agreement and movement:

Expletive constructions:

- (4) a. There seems to have arrived a student
 b. There seem to have arrived some students

- Various scholars (Moro 1997, Koopman 2005, Kayne 2006 and Leu 2008) have argued that *there* actually originates in the associate subject and then moves out of it. If that were correct, the expletive can be said to be part of the associate subject.

(5) There_{[iφ]i} seems_[uφ] t_i to have arrived [a student t_i]_[iφ]

- But associated subjects never take scope from the real subject position:

(6) There may be a glass on the table $\diamond > \exists ; * \exists > \diamond$

- Hence, neither semantically, not phonologically the associated subject ever appeared in a position higher than T. Consequently, the associated subject arguable cannot be said to have moved.

Quirky subject constructions:

- (7) a. Jóni líkuðu Tessir sokkar Icelandic
 Jon.DAT like.PL these socks.NOM (Bobaljik 2008)
 ‘Jon likes these socks’
 b. Mér virdast hestarnir vera seinir
 Me seem.PL the.horses be slow
 ‘It seems to me hat the horses are slow’

- Koopman (2005) argues that quirky subject constructions in Icelandic can be understood in terms of spec-head agreement once it is assumed that dative-nominative verbs have an additional structural TP-vP layer:

(8) [TP Me Expl T [_{vP} [TP [The horses]_i T [_{vP} seem [TP t_i to be slow]]]]]]

- But such an analysis can only be maintained by assuming additional layers of functional structure that appear hard to be motivated.

Complementizer agreement:

- (9) a. Ik denk de-s doow en ich Marie ôs kenn-e treffe Limburg Dutch
 I think that.2SG you and I Mary meets.2SG (Van Koppen: 2005)
 ‘I think that you and I can meet’
 b. Omda-n André en Valerè tun juste underen computer kapot was West Fl.
 Because.PL André and Valerè then just their computer broken was.SG
 Because André and Valerè’s computer broke down just then

- But if Agree does not necessarily result in movement, then what does in those cases where the application of Agree does result in movement?
- Apparently, in those cases, an additional feature must be responsible for the triggering of movement: [EPP] (which can either be thought of as a subfeature of an Agreeing feature, or a feature present on the functional head itself).

- Movement is no longer a semantic reflex, but rather a purely formal property (cf. Biberauer et al. 2018).

2. Problems for [EPP]-triggering movement

- Despite the strength of the argumentation above, a number of empirical and conceptual arguments speak against the adoption for [EPP]-features as triggers for movement. The most important ones are listed below.
 - (i) The [EPP]-feature does not explain the necessity of movement; it is rather a descriptive tool to encode a movement necessity. The original motivation behind the necessity of movement has disappeared.
- One might argue that movement no longer needs to be motivated given the idea that unrestricted Merge allows application of Remerge as well. However, Remerge does not apply arbitrarily and thus must either be triggered or constrained (e.g. it only applies to repair derivations that would otherwise lead to ungrammatical sentences).
 - (ii) LDA is not the only / standard agreement-configuration. If LDA reflected the core configuration where Agree applies, it is hard to understand why a substantial amount of applications of Agree require the presence of [EPP]-features in addition. Why spec,head-agreement if you don't need it?
 - (iii) LDA is quite sometimes defective. Various instances of LDA exhibit agreement with only a subset of ϕ -features that is active under Spec-Head Agreement (SHA), i.e. after movement (cf. Baker 2008 among many others).
 - (iv) ϕ -Agree is often (though, again, not always) dependent on structural case. Whereas the standard account takes case to be dependent on ϕ -agreement, Bobaljik (2008) has shown that rather the reverse applies: ϕ -agreement is dependent on case assignment (see also Baker 2008). If that is indeed correct, the configurations in (3) cannot be the basic configurations of Agree, and therefore render the arguments on the default status of LDA incorrect.
 - (v) In several cases where ϕ -Agree is independent from case, LDA is excluded. Baker (2008) points out that in many Niger-Congo languages ϕ -Agree is independent from case (possibly due to the absence of structural case in those languages), but that in such languages Agree always works in an upward fashion (i.e. the goal c-commands the probe in surface position).
- (10) a. Abakali mo-ba-seny-ire olukwi (lw'-omo-mbasa) Kinande
women.2 AFF-2S/T-chop-EXT wood.11 LK11-LOC.18-axe.9
'The woman chopped wood (with an axe).'
- b. Oko-mesa kw-a-hir-aw-a ehilanga.
LOC.17-table 17S-T-put-PASS-FV peanuts.19
'On the table were put peanuts.'

- c. Olukwi si-lu-li-seny-a bakali (omo-mbasa)
wood.11 NEG-11S-PRES-chop-FV women.2 LOC.18-axe.9
'WOMEN do not chop wood (with an axe).'
- (vi) Many other instances of Agree, often more 'semantically loaden' also apply in an upward fashion (e.g. Negative Concord, Sequence of Tense, Case-Agree). Either these constitute separate instances of Agree, or also militate against the basic configurations in (3) on which the [EPP]-proposal has been based.
- (vii) [EPP] is a purely formal feature (i.e. it lacks any phonological or semantic counterparts). It is hard to understand, especially in minimalist reason why features that lack any relation with the interfaces (LF, PF) should be motivated in the first place. The idea that uninterpretable features (with match with interpretable counterparts) would be responsible for movement is much more in line with the minimalist basic assumptions.
- To conclude: both the postulation of [EPP] (as a rescue mechanism) and the Agree-mechanism that formed the basis for the postulation of this [EPP] feature face serious problems.
 - Agenda: to come up with a proposal for agreement and movement that (i) lacks any [EPP] features; (ii) can handle the sometimes attested featural deficiency of LDA and the fact that many other cases of agreement involve SHA; (iii) can unify the variety attested among different types of syntactic agree(ment); (iv) can explain the dependency of ϕ -agreement on structural case and (v) can be motivated by showing that all triggers of grammatical operations exist by virtue of mismatches between surface forms and LF (i.e. between PF and LF).

3. Revised Upward Agree (Bjorkman & Zeijlstra 2019)

- Zeijlstra (2012): Agree takes place between a probe, carrying an uninterpretable feature and a goal, carrying a matching interpretable feature, in such a way that the goal c-commands the probe:
- (11) Upward Agree: α can Agree with β iff:
- a. α carries at least one uninterpretable feature and β carries a matching interpretable feature;
 - b. β c-commands α ;
 - c. β is the closest goal to α
- Similar conclusions have been reached by Wurmbrand (2012a,b).
 - The argument in favor of Upward Agree goes as follows:

- (12) a. Some cases of syntactic agreement must be taken to be instances of Upward Agree;
 b. Other cases of Agree, typically taken to be instances of Downward Agree can/must be taken to be instances of Upward Agree too:
 i. Cases of SHA
 ii. Cases of LDA

3.1 Typical cases of Upward Agree

- Cases of Upward Agree are instances where a semantic dependency is encapsulated in the syntax, e.g. Negative Concord and Sequence of Tense, or cases of Multiple Agree in general.

Negative Concord:

- (13) a. Dnes *nikdo* *(*ne*)volá Czech
 Today n-body NEG.calls
 ‘Today nobody is calling’
 b. Milan *nevidi nikoho*
 Milan NEG.sees n-body
 ‘Milan doesn’t see anybody’
 c. Dnes *nikdo* *(*ne*)volá *nikomu*
 Today n-body NEG.calls n-body
 ‘Today nobody is calling anybody’

- (14) [Dnes $Op_{-[iNEG]}$ [TP $nikdo_{[+NEG]}$ $nevolá_{[+NEG]}$ $nikoho_{[+NEG]}$]]]

Sequence of Tense:

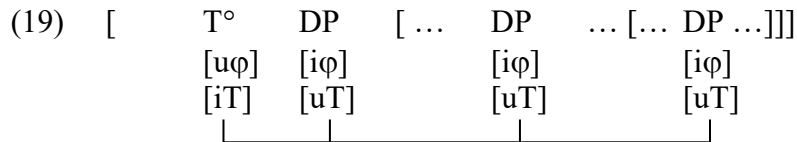
- (15) a. John said Mary was ill
 b. Jan zei dat Marie ziek was Dutch
 John said that Mary ill was
 ‘John said Mary was ill’

- (16) Wolfgang played tennis on every Sunday
 = ‘For every Sunday in the past there is a time t at which Wolfgang plays tennis’
 ≠ ‘There is a past time on every Sunday at which Wolfgang plays tennis’
 ≠ ‘For every Sunday, there is time t before it is such that Wolfgang plays tennis at that time’

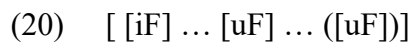
- (17) [John $T_{[iPAST]}$ [said $_{[uPAST]}$ [Mary was $_{[uPAST]}$ ill]]]

Multiple Agree:

- (18) John-**ga** [yosouijouni nihonjin-**ga** eigo-**ga** hidoku] kanji-ta. Japanese
 John.NOM than.expected the.Japanese.NOM English.NOM bad.INF thought
 ‘It seemed to John that the Japanese are worse at speaking English than he had expected.’



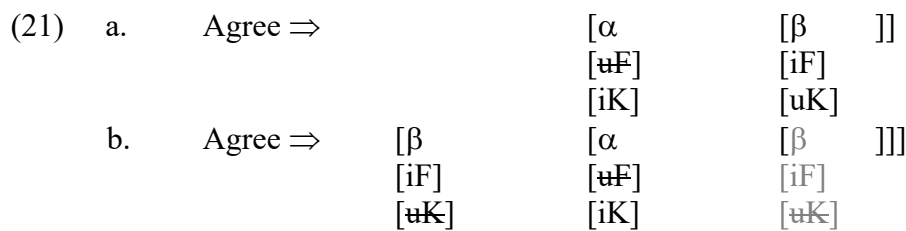
- All such cases favor a version of Agree, where Agree is licit under the following configuration:



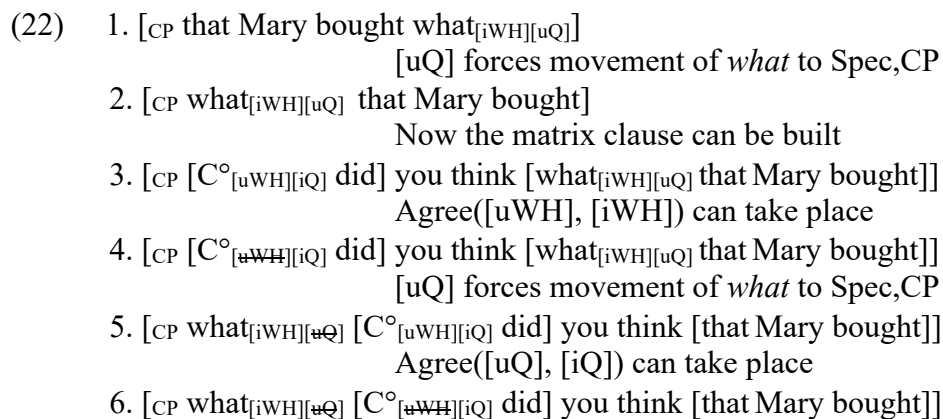
- Note, that standard versions of Agree (e.g. Chomsky 1995, 2001, Pesetsky & Torrego 2007) do not allow for Agree under such a configuration.

3.2 Spec-head agreement

- Bošković (2007): [EPP] is problematic and can be reduced once Agree is taken to be strictly unidirectional. This means that every instance of so-called ‘bidirectional Agree’ should be reduced to two instances of unidirectional Agree without alluding to [EPP].



- Bošković (2007): An element carrying a feature [uF] may move to a higher position, if otherwise [uF] remains unchecked. This applies especially to cases of successive cyclic movement.



- Bošković’s proposal is however problematic for cases of LDA. LDA, for him, must be uni-directional agreement that cannot be ‘licensed/accorded’ by reverse agreement. Hence, case agreement, and even more specifically, the dependence of φ-agreement on case-agreement, remains unaccounted for.

- (27) a. Agree \Rightarrow $\begin{matrix} [\alpha & [\beta &] \\ [\cancel{uF}] & [iF] \\ [iK] & [uK] \end{matrix}$
- b. Agree \Rightarrow $\begin{matrix} [\beta & [\alpha & [\beta &]]] \\ [iF] & [\cancel{uF}] & [iF] \\ [\cancel{uK}] & [iK] & [\cancel{uK}] \end{matrix}$

Question: what exactly triggers movement of β in (27)b?

Problem: if the probe can only look upward it can never see that it needs the lower goal to move up in the first place.

Three possible answers:

- (i) Downward Probing (as suggested in Zeijlstra 2012): a probe may look down for a potential goal and then make the goal raise to have Agree established. This, however, comes along with a particular locality condition: when should the probe no longer wait for a higher goal in order to search down? Moreover, it significantly weakens the Upward Agree approach in general by allowing both downward and upward probing
 - (ii) The goal raises only if otherwise the sentence will crash (analogous to intermediate steps in successive cyclic movement). However, this may only allow the goal to move to a phase edge. Whereas this works for *Wh* movement, it cannot account for subject movement to Spec,TP.
 - (iii) An accessibility condition: a probe can only look up for potential goal, unless it stands already in a different Agree relation with a lower goal. This would make the lower goal accessible for an upward searching probe.
- Bjorkman & Zeijlstra (2019): (iii) must be adopted rather than (i) or (ii).
 - The reason for this is that the decision as to whether the lower goal should be raised to the specifier position of the probing head should be made immediately after merger of the this probing head. This rules out (ii).
 - Solution (i) can be ruled out on more principle grounds, as there is no reason why the probe would be able to unrestrictedly look into its c-command domain.
 - By contrast (iii) can be principally motivated, since it makes the goal accessible to the probe by means of Upward Agree.
- (28) Accessibility condition: α is accessible to β iff:
- a. β c-commands α (respecting additional locality restrictions) *or*
 - b. if α and β are members of an Upwards Agree-chain
 where $\langle x_n, \dots, x_1 \rangle$ is an UA-chain iff every chain member x_{i+1} stands in an Upward Agree relation with x_i .

- Once a goal is already accessible to a probe, the probing head can see it and attract it to its specifier position.
- (29) *Earliness Principle*: if some syntactic operation is necessary (i.e. not applying it would render the sentence ungrammatical), and can apply at some derivational stage, it must apply at this derivational stage.
- Empirically, (28) can be motivated as well, since opposite to Zeijlstra (2012), it rules out instance of Spec-head agreement without any additional agreement going on.

(30) *Agree \Rightarrow $\begin{bmatrix} [\beta & &] \\ [iF] & [\alpha &] \\ & [uF] & [\beta &] \end{bmatrix}$

- The proposal now naturally accounts for plain cases of SHA:

(31) a. $\begin{bmatrix} [T & [DP &] \\ [u\phi] & [i\phi] \\ [iT] & [uT] \end{bmatrix}$

b. $\begin{bmatrix} [DP & [T & [DP &]]] \\ [i\phi] & [u\phi] & [i\phi] \\ [uT] & [iT] & [uT] \end{bmatrix}$

- Consequence: for the lower goal Agree with the higher probe, the goal must already stand in an Agree relation with this probe. In this example, this is nominative case agreement.
- Note that it looks like the original activation condition (Chomsky 2001) sneaks in through the backdoor. In a way this is true, but with two crucial differences: first, it is no longer required that every goal is activated for agreement by means of an uninterpretable feature (only lower goals are); second, the activation condition is now outside the plain accessibility domain of the probe, and receives independent motivation.

3.4 *Long-Distance Agreement*

- At first sight, it looks like the revised version of Upward Agree allows for the following two Agree schemata in (32) and (33), ruling out configurations as in (34):

(32) Agree \Rightarrow $\begin{bmatrix} [\beta & &] \\ [iF] & [\alpha &] \\ [uK] & [iK] & [\beta &] \end{bmatrix}$

(33) Agree \Rightarrow $\begin{bmatrix} [\gamma & &] \\ [iF] & [\alpha &] \\ & [uF] & [\beta &] \\ & [iK] & [uK] \end{bmatrix}$

$$(34) \quad *Agree \Rightarrow \begin{array}{ccc} [\beta & [\alpha & [\beta \\ [iF] & [uF] & [iF] \end{array}]]]$$

- But a competition question arises in situations, such as (35), when the numeration also makes available a goal γ carrying $[iF]$: should γ or β be merged? Both would be accessible to the probe and both can check off $[uF]$ on α .

$$(35) \quad Agree \Rightarrow \begin{array}{ccc} _ & [\alpha & [\beta \\ & [uF] & [iF] \\ & [iK] & [uK] \end{array}]]]$$

- *Merge-over-Move*: In cases of competition External Merge is preferred over Internal Merge. Such a mechanism can either be thought of as a constraint in terms of computational efficiency (External Merge is cheaper) or a way to encode that no element in the numeration is left out.
- But if γ will win from β in these cases, a new question arises when γ checks off only *some* uninterpretable features on the probe. For instance, if γ carries interpretable person features only, and α has uninterpretable person and number features (with β carrying both interpretable person and number features). What will then be the next step: (36)a or b?

$$(36) \quad \begin{array}{l} \text{a.} \quad Agree \Rightarrow \begin{array}{ccc} [\gamma & [\alpha & [\beta \\ [i\phi; \pi] & [u\phi; \pi, \nu] & [i\phi; \pi, \nu] \\ & [iK] & [uK] \end{array}]]] \\ \text{b.} \quad Agree \Rightarrow \begin{array}{ccc} [\gamma & [\alpha & [\beta \\ [i\phi; \pi, \nu] & [u\phi; \pi, \nu] & [i\phi; \pi, \nu] \\ [uK] & [iK] & [uK] \end{array}]]] \end{array}$$

- The Merge-over-Move constraint would still require that γ be merged in these cases, even though β has a more fully specified $[i\phi]$ feature. The reason is that the *checking* requirement of the ϕ -feature is still fulfilled: Agree can take place, since the interpretable ϕ -feature on γ matches with the uninterpretable ϕ -features on α , given the definition in (11) that states that an uninterpretable feature Agrees with a c-commanding goal that contains a matching interpretable feature. So both in (36)a and b, all uninterpretable features are checked.
- However, at the same time (36)a would be ungrammatical, as the uninterpretable ϕ -feature must still be valued for number.
- Pesetsky & Torrego (2007) propose that valuation and checking should be distinguished (see also Arregi and Nevins (2012), who distinguish two operations: Agree-Link (in the syntax) and Agree-Copy (in the post-syntactic morphology).
- The requirement that every $[uF]$ be c-commanded by a corresponding $[iF]$ is then a *checking* requirement, whereas *valuation* would be a mechanism responsible for assigning unvalued features a value on the basis of some other matching feature that is already valued.

(41) There_[iφ: 3] seems_{[uφ:3; SING][iT]} to have arrived [a student]_{[iφ: 3; SING][uT]}

4.2 *Quirky subject constructions:*

- Mutatis mutandis, the same applies to Icelandic quirky subject constructions. Here it is not an expletive, but rather a dative experiencer that occupies the potential landing site of the nominative DP.
- Additional assumption: datives carry only interpretable 3rd person features (after Rezac 2008 and many others), i.e. the dative carries [iφ: 3];

(42) a. Jóni líkuðu Tessir sokkar Icelandic
 Jon.DAT like.3PL these socks.NOM (Bobaljik 2008)
 ‘Jon likes these socks’
 b. Mér virdast hestarnir vera seinir
 Me seem.3.PL the.horses be slow
 ‘It seems to me hat the horses are slow’

(43) a. [Jóni_[iφ: 3] líkuðu_{[iT][uφ: 3.PL]} Tessir sokkar_{[uT][iφ: 3.PL]}]
 b. [Mér_[iφ: 3] virdast_{[iT][uφ:3.PL]} hestarnir_{[uT][iφ: 3.PL]} vera seinir]

- The similarities between expletive constructions and Icelandic quirky subject constructions are striking. For instance, the dative can only exhibit 3rd person agreement with it and the nominative only agrees in number:

(44) a. Honum batnaði Icelandic
 Him.DAT recovered.3SG (Boecks 2008)
 ‘He recovered’
 b. Okkur batnaði/*bötnuðum
 Us.DAT recovered3.SG/recovered.1PL
 ‘We recovered’

- So, Icelandic quirky subject constructions show a lower subject whose uninterpretable case feature Upward Agrees with the interpretable case feature of the verb, a finite verb whose uninterpretable φ-features get valued for number by the interpretable number features of the subject and where the canonical landing site of the subject is occupied by a dative, which checks with the finite verb’s [uφ]-feature and values it for person.

4.3 *Agreement with embedded absolutive topics in Tsez*

- In Tsez, embedded absolutive object topics agree with matrix T° (cf. Polinsky and Potsdam 2001).

(45) Enir [užā magalu b-āc’ruli] b-iyxo
 mother [boy bread.ABS(III) III-ate] III-know
 ‘The mother knows [that (as for the bread) the boy ate it’

- If the embedded absolutive is not a topic, agreement between this argument and the matrix verb is absent, and the latter agrees with the entire embedded clause (class IV):
- (46) Enir [uʒā magalu b-ācʹruli] r-iyxo
 mother [boy bread.ABS(III) III-ate] IV-know
 ‘The mother knows that the boy ate the bread’
- Polinsky and Potsdam (2001) convincingly argue that the agreement pattern in (45) cannot be established outside the embedded clause, i.e. by movement of the embedded agreement target into a Spec-Head configuration with matrix T° . They demonstrate that the embedded topic cannot raise into the matrix clause, and also that it is not possible for agreement to be triggered by a covert pronoun in the matrix clause that corefers with the embedded topic. From this they argue that the matrix verb agrees with some element that is structurally lower at every stage of the derivation – in other words, that LDA in Tsez requires downward agreement.
 - In order to account for the fact that LDA in Tsez is restricted to embedded absolutive *topics*, Polinsky and Potsdam assume that these topical arguments covertly raise into a position in the left-periphery of the embedded clause (Spec,TopP).
 - Linking ϕ -agreement to covert movement, however, crucially hinges on the view that covert A-bar movement takes place in narrow syntax, with the lower copy being phonologically realized, since otherwise syntactic agreement could not feed the post-syntactic morphological component: if ϕ -agreement is delayed to LF (necessary if it results from LF-movement), then its effects should be inaccessible on the PF branch of the derivation.
 - The question thus arises of whether there is some other way to account for the restriction of long-distance agreement with embedded absolutive topics in Tsez in terms of Upward Agree, ideally without any specific requirements on the way covert movement is modelled.
 - Interestingly, the embedded topic construction must be licensed by LDA; otherwise it is ungrammatical.
- (47) *_{[TopP [TP uʒā magalu b-ācʹruli]]}
 pro.ABS.III boy bread.ABS(III)
 ‘As for the bread, the boy ate it’
- This suggests, however, that the embedded Top° must be marked for being embedded itself, i.e. for being in the complement of a finite verb. In Upward Agree terms, this is established by assigning Top° either a [uv] or a [uT] feature (depending on what exactly the source for absolutive agreement and case is).
- (48) [_{VP} Enir [_{TopP} [_{iTOP} [_{uv}] uʒā magalu [_{iφ} [_{uTOP}]] b-ācʹruli]] r-iyxo [_v] [_{uφ}]]
 mother [boy bread.ABS(III) III-ate] IV-know
 ‘The mother knows that the boy ate the bread’

- But, if Top° agrees with the topic, and v°/T° agrees with Top° , Accessibility renders the embedded topic visible to v/T . Since only absolutive DPs are inherently valued (ergatives never control agreement), only absolutive DPs can realize LDA.
- Note that under this perspective covert movement does not necessarily have to be the result of lower spell-out.

5. Structure building vs. structure enrichment

- Bjorkman & Zeijlstra's proposal can explain all instances of syntactic movement in terms of sole [uF] and [iF] features without alluding to any kind of [EPP]-feature.
- In addition, it explains the problems related to the view that Agree operates along the lines of (3): it explains the typological rarity, the often attested deficiency and case-dependency of φ -agreement, and unifies cases of LDA with other observed instances of (φ -)agreement.
- Finally, it presents a view on triggers for movement that can only exist by virtue of the kind of form-meaning mismatches that natural language exhibits. As for the latter, a consequence would be that in Merge-systems without any semantic component, movement is predicted not to exist.
- At the same time, it makes very strong predictions (maybe too strong) concerning the relation between checking and valuation.
- This is especially the case for case-based agreement. It is nowadays no longer clear that what underlies (morphological) case must be syntactic feature checking.
- If that is the case, a weaker connection between checking and valuation must be proposed (see also Preminger 2014).
- McFadden et al. (2021): the relevant distinction is between structure building and structure enrichment. What checking does is establish (Move / Agree) relations between uninterpretable and interpretable features. As long as every uninterpretable feature is checked (i.e. c-commanded by a matching interpretable one), a sentence is fine with respect to narrow syntax.
- It is only pre-established structures where different nodes 'can talk to each other', i.e., value each other. Valuation is an instance of structure enrichment.
- Valuation does not trigger movement. It is at best parasitic on it.
- Current goal: unify feature checking with selection (Zeijlstra 2020): being part of a selection chain satisfies the checking requirement for valuation, valuation can apply in a freer way than suggested in Bjorkman & Zeijlstra.