

Upwards and onwards:
On the direction of valuation in φ -feature agreement
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o. Preliminaries

- This talk is about agreement
- Working definition:¹

(1) **agreement:** morpho-phonologically overt covariance in φ -features between a verb/TAM-marker and a nominal argument

.....

What do we mean by “direction of valuation”?

- ASSUMPTION: when we see φ -features on a verb or TAM-marker, they are there *derivatively*
 - that doesn’t (necessarily) mean *derivationally*
 - but they are there because of the presence of corresponding φ -features on the nominal, and not vice versa
- The reasoning for this assumption comes in at least two flavors:
 - the more prevalent (and in my mind, less convincing) argument comes from purported semantic asymmetries
 - the semantic content of φ -features pertains to noun phrases, not to verbs/TAM-markers (Chomsky 1995:277–278)
 - I’m not sure this is 100% true at the level of description (cf. pluractionality?)
 - but even if it is, this is not incompatible with a theory where φ -features make their semantic contribution *on the verb* (see, e.g., Bale 2014)
 - a more convincing argument (in my mind) that the semantic content of φ -features resides on the nominal can be made using *omnivorous agreement* (Nevins 2011, Preminger 2014, inter alia)

- e.g. in the Kichean *Agent-Focus* construction:
 - agreement with 1st/2nd person pronoun whether it is a subject/Agent/EA or object/Patient/IA
 - i.e., the verb looks the same whether it’s “FOC I saw him” or “FOC He saw me”

(Dayley 1978, 1985, Mondloch 1981, Norman & Campbell 1978, Smith-Stark 1978)

⇒ If φ -features on a verb/TAM-marker are derivative, we can then pose the following question:

(2) What must the structural configuration of α and β be, for α to acquire (φ -)features derivatively, from β ?

- In particular, we could consider the following (non-exhaustive) list of logical possibilities:

(3) For α to acquire (φ -)features derivatively, from β , is it the case that:

- a. α must c-command β
- or –
- b. β must c-command α
- or –
- c. either of $\{\alpha, \beta\}$ must c-command the other

↔ This is the “direction of valuation” question.

1. Structure of the talk

- §2: Introduce, in more detail, how the models in (3a) and (3b) are supposed to work
- §3: Review some purported arguments in favor of (3b) *when it comes to φ -agreement*, and argue that they don’t work (and that, in at least one case, they may furnish an argument for the opposite conclusion)
- §4: Present further evidence against (3b) *when it comes to φ -agreement*
- §5: Present a putative empirical generalization concerning long-distance agreement (LDA) in φ -features, and discuss its consequences for (3a–c)
- §6: Conclusion, and some speculations on how this might fit within the broader picture of correspondence relations in language

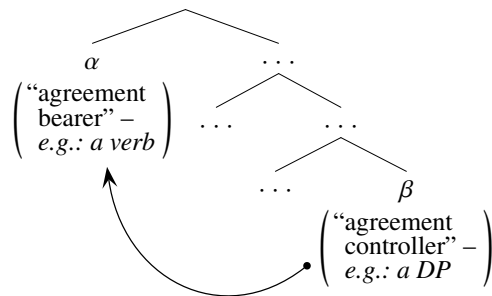
*Thanks to the audience at the UConn Linguistics Colloquium, and to Jonathan Bobaljik, Marcel Den Dikken, Claire Halpert, Terje Lohndal, Jason Merchant, and Susi Wurmbrand, for their comments and suggestions. All errors and omissions are the responsibility of the author(s).

¹“TAM”: Tense/Aspect/Mood; “ φ -features”: {PERSON, NUMBER, GENDER/NOUN-CLASS}.

2. Two (and a half) models of valuation

(4) UPWARD VALUATION

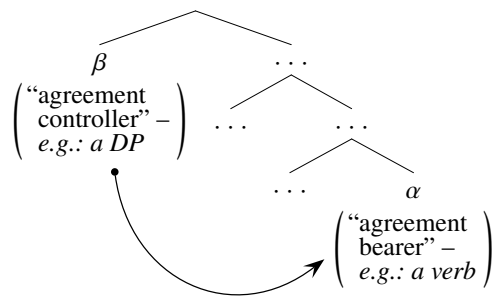
For α to acquire (φ -)features derivatively, from β , it must be the case that α c-commands β . [= (3a)]



(Chomsky 2000, 2001; see also: Den Dikken 1995, Lasnik & Saito 1991, Polinsky & Potsdam 2001, *inter alia*)

(5) DOWNWARD VALUATION

For α to acquire (φ -)features derivatively, from β , it must be the case that β c-commands α . [= (3b)]



(Zeijlstra 2012; see also: Adger 2003, Kayne 1989, Koopman 2006, Merchant 2011; and concerning non- φ -features, see: Wurmbrand 2011, 2012, *inter alia*)

In addition, one could imagine that agreement can obtain in a configuration like (4) *or* like (5) —

- depending on the language (Baker 2008), depending on which configuration obtained first (Carstens 2016), depending on the nature of the feature itself (Abels 2012), or freely (Merchant 2006)

3. On some purported arguments for DOWNWARD VALUATION in φ -agreement

3.1. The irrelevance of maximally local agreement relations

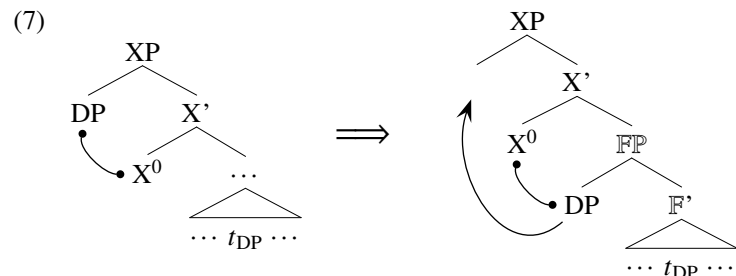
- Baker (2008), Bjorkman (2011) and Bjorkman & Zeijlstra (2014): data like (6a–b) show that a uniform approach to φ -agreement in terms of UPWARD VALUATION is untenable

- (6) a. omo-mulongo mw-a-hik-a mukali. (Kinande; Bantu)
18(LOC)-village.3 18s-T-arrive-FV 1woman
'At the village arrived a woman.'
- b. oko-mesa kw-a-hir-aw-a ehilanga.
17(LOC)-table 17s-T-put-PASV-FV 19peanuts
'On the table were put peanuts.'
- [Baker 2008:158]

- Preminger (2013): maximally-local agreement relations teach us nothing about the direction of valuation in agreement
- First, it is not at all clear that spec-head agreement—which (6a–b) appear to instantiate—is an instance of DOWNWARD VALUATION in the first place
 - under *Bare Phrase Structure* (Chomsky 1994), the head is also the label of the “intermediate projection”
 - ⇒ and so, it can enter into agreement with the spec under *sisterhood*
 - which does not distinguish UPWARD VALUATION from DOWNWARD VALUATION
- this yields structural conditions that amount to *m-command* —
 - though now, these are derived through the assumptions of BPS²

²The label of the entire XP is also the head. If UPWARD VALUATION does not exclude domination relations, the head could enter into agreement the spec from this position, as well (see, for example, Schoorlemmer 2009).

- But even if we reject this view and allow only X^0 to enter into agreement relations, (6a–b) are in no way a problem for UPWARD VALUATION
 - there is a perfectly viable analysis of data like (6a–b) that does not resort to DOWNWARD VALUATION at all



⇒ In cases of maximally-local agreement, the moves required to alternate between one style of analysis and the other are very hard to argue against³

NB: Compare —

- “(6a–b) argues against universal UPWARD VALUATION”
- “the subject position in English argues against the *Predicate-Internal Subject Hypothesis*⁴”

3.2. What we can (and can’t) learn from SV-VS agreement asymmetries

- (8) a. *Trois filles sont arrivées.* (French)
Three girls are arrived.F.pl
‘Three girls arrived.’
- b. *Il est arrivé trois filles.*
It is arrived.M.sg three girls
‘Three girls arrived.’ [Guasti & Rizzi 2002:176]

- (9) a. *ʔal-ʔawlaad-u naam-uu/*naam-a.* (Standard Arabic)
*the-children-NOM slept-3pl/*slept-M.3sg*
‘The children slept.’
- b. *naam-a/*naam-uu l-ʔawlaad-u.*
*slept-M.3sg/*slept-3pl the-children-NOM*
‘The children slept.’ [Aoun et al. 1994:197]

- A common conclusion from such patterns (Kayne 1989, Franck et al. 2006, Bjorkman 2011, among many others):

“If [UPWARD VALUATION] were the basic mechanism of agreement in natural language, and agreement with post-verbal DPs therefore the simplest expression of φ -agreement (agreement in the absence of movement), we would not expect the asymmetry to run in this direction: we would expect instead that [DOWNWARD VALUATION] would exhibit gaps or deficiencies in φ -agreement. The existence of defective agreement in LDA, and only in LDA, thus lends support to a view in which [DOWNWARD VALUATION] is basic and [UPWARD VALUATION] epiphenomenal.” [Bjorkman & Zeijlstra 2014:12]

- ✦ I will argue: this conclusion is at best unwarranted, and might even be at odds with the facts.
- Before proceeding, it is worth taking a moment to consider this: even if the traditional description of these data were correct —
 - ✦ it would constitute an argument for DOWNWARD VALUATION *only if we presuppose that the types of derivations outlined in §3.1 are ruled out*
 - and it is not at all clear what that presupposition is supposed to follow from

³The same is true in the for maximally-local agreement relations that appear, on the surface, to adhere to UPWARD VALUATION (e.g. verb-subject agreement in a language like Irish); they can be brought into compliance with DOWNWARD VALUATION via very local head-movement (see Preminger 2013, Preminger & Polinsky 2015 for details).

⁴Fukui & Speas (1986), Kitagawa (1985, 1986), Koopman & Sportiche (1991), Kuroda (1988) and Sportiche (1988).

3.2.1. An excursus on *partial agreement*

- Baker 2008, 2011: agreement at-a-distance is possible in NUMBER but not in PERSON⁵
- Preminger 2011b: agreement at-a-distance is attested *even in PERSON*; but:
 - there is certainly a “hierarchy of fragility” —
 - whereby PERSON agreement is most likely to be affected by structural distance, followed by NUMBER agreement

(10) Relative Aptitude for Failed Agreement (RAFA) [Preminger 2011b:922]

PERSON at-a-distance \gg NUMBER at-a-distance

(\gg any agreement at close range)

- adding GENDER (not addressed in Preminger 2011b), we get the following picture:

(11) Relative Aptitude for Failed Agreement (RAFA), extended

PERSON at-a-distance \gg NUMBER at-a-distance \gg

GENDER at-a-distance (\gg any agreement at close range)

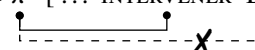
- (10)/(11) constitute a markedness hierarchy par excellence:
 - they constrain not only the crosslinguistic distribution of agreement at-a-distance;
 - but also the possibilities for agreement at-a-distance between a given pair of “agreement controller” and “agreement bearer”
- In Preminger 2011b, I suggest deriving (10)/(11) from the way the relevant φ -probes are arranged along the clausal spine
- The idea is that what is traditionally thought of as a single functional head, with a single “bundle” of φ -features—e.g. T^0 , or v^0 —is actually comprised of separate heads for separate φ -features
 - building on an extensive literature arguing that PERSON and NUMBER probe separately from one another
(Anagnostopoulou 2003, Béjar 2003, Chomsky 2000, Laka 1993, Preminger 2011a, Shlonsky 1989, Sigurðsson 1996, Sigurðsson & Holmberg 2008, Taraldsen 1995, a.o.)

(12) [... [#P #⁰ [π_P π^0 [... DP_T ...]]] ...]

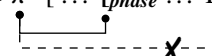
where: #⁰ — the probe relevant to NUMBER features
 π^0 — the probe relevant to PERSON features
 DP_T — putative agreement target

- Suppose there is some syntactic obstruction separating π^0 and DP_T
 - such as an intervening nominal (e.g. a dative), or a phase boundary

(13) a. [... [#P #⁰ [π_P π^0 [... INTERVENER DP_T ...]]] ...]



b. [... [#P #⁰ [π_P π^0 [... [phase ... DP_T ...] ...]]] ...]



- This will prevent π^0 from agreeing with DP_T;

⇒ Now one of two things can happen:

(i) **Nothing.**

The obstruction remains, and similarly prevents agreement between #⁰ and DP_T

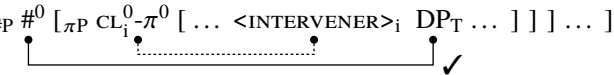
- this is the case in full-fledged *dative intervention*


(ii) **Something.**

Probing by π^0 , even though it could not reach DP_T, had syntactic consequences that effectively removed the obstruction — for example:

- in (13a): clitic-doubling the intervener, which would consequently cease to intervene (following Anagnostopoulou 2003, Béjar & Rezac 2003)
- in (13b): agreeing with the phase head, thereby allowing subsequent probes to look inside the phase in question (following Rackowski & Richards 2005, van Urk & Richards 2015)

⁵This is Baker’s (2008) “SCOPA” (Structural Condition on Person Agreement).

(14) a. [... [#P #⁰ [_{π P} CL_i⁰- π^0 [... <INTERVENER>_i DP_T ...]]] ...]


b. [... [#P #⁰ [_{π P} π^0 [... ~~DP_T~~ ...]]] ...]


In these cases, probing by #⁰ will be successful⁶ in targeting DP_T —
 ⇒ resulting in what we would descriptively call “partial agreement”
 (in NUMBER, but not in PERSON)

- Importantly, the converse pattern—where π^0 can successfully target DP_T but #⁰ cannot—is predicted not to exist:
 - this would require an obstruction being introduced between π^0 and #⁰;
 - but π^0 and #⁰ are consecutive heads in the clausal spine, so this will generally be impossible; the only position for an obstruction that would block #⁰ but not π^0 is in [Spec, π P]:

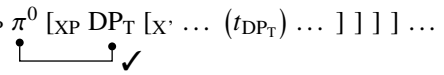
(15) [... [#P #⁰ [_{π P} XP π^0 [... DP_T ...]]] ...]

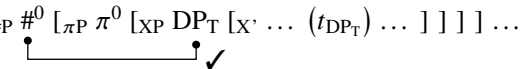
- but π^0 is not thematic; it does not introduce arguments of its own
- ⇒ the obstructing XP got to [Spec, π P] via movement
- movement which could only have been triggered by π^0 , given that there are no intermediate heads between #⁰ and π^0
- ⇒ XP was closer to π^0 than DP_T was (otherwise DP_T would have moved, instead)

(16) [... [#P #⁰ [_{π P} XP π^0 [... t_{XP} ... [... DP_T ...]]]] ...]

⇒ XP would have intervened in probing of DP_T by π^0 , as well⁷
 •• contradiction.

- And, of course, it could be the case that there was no obstruction to begin with—and so probing by both π^0 and #⁰ would go through unimpeded (a.k.a. “successful φ -agreement”)
- On the other hand, (re)merging DP_T in (the specifier of) the immediate complement of π^0 would render an obstruction impossible —
 - since there is no structural space between π^0 and DP_T for the obstruction to reside⁸

(17) a. [... [#P #⁰ [_{π P} π^0 [XP DP_T [X' ... (t<sub>DP_T) ...]]]] ...]
</sub>

b. [... [#P #⁰ [_{π P} π^0 [XP DP_T [X' ... (t<sub>DP_T) ...]]]] ...]
</sub>

This derives:

- The fact that PERSON agreement at-a-distance is more susceptible to disruption than NUMBER agreement at-a-distance
- The fact that both are more susceptible to disruption than agreement at close range (whether in NUMBER OR in PERSON)

.....

Analogously, by positing that Γ^0 —the GENDER probe—is above #P, we can derive the position of GENDER agreement in the *extended* RAFA (11):

(18) [... [_{Γ P} Γ^0 [#P #⁰ [_{π P} π^0 [... DP_T ...]]]] ...]

where: Γ^0 — the probe relevant to GENDER features

⁶The expression “x successfully targets DP_T” is to be understood, in this context, as x successfully reflecting marked φ -features found on DP_T ([participant], [speaker], [plural], and so on). It is, in my mind, an open question whether such a thing as “agreement with a 3rd person singular nominal” even exists, or these are simply descriptive terms we use to identify the morphology that surfaces when probes fail to find a target bearing marked features (see Nevins 2007, Preminger 2014 for discussion).

⁷It is conceivable that one could get around this by appealing to finer derivational timing—i.e., that π^0 would dislocate the intervener *prior* to probing for person features (along the lines of Müller 2009, for example). I assume that if this option is available to π^0 , it is also available to #⁰—and thus, #⁰ would be able to move the intervener out of the way prior to probing for number features. I therefore do not consider this possibility problematic for the line of argumentation pursued here.

⁸This is so even if the XP in [Compl, π] is phasal. That is because DP_T is located in [Spec,XP] (the edge of the putative XP phase), and is therefore accessible to probing by π^0 all the same.

3.2.2. Back to SV-VS agreement asymmetries

What does this partial agreement stuff have to do with SV-VS asymmetries?

- Well, what the SV-VS data show is that a nominal that has moved all the way up to a preverbal position (i.e., in SV) controls full agreement
- This is precisely what the account in §3.2.1 predicts —
 - as shown in (17a–b), any nominal that has moved at least as high as (the specifier of) [Compl, π] will control full agreement
 - in PERSON, NUMBER, and GENDER
- As for VS structures, the account in §3.2.1 predicts one of the following will arise —
 - (i) no agreement
 - (ii) agreement only in GENDER, not in NUMBER or PERSON
 - (iii) agreement only in GENDER and NUMBER, not in PERSON
 - (iv) full agreement
 — depending on which, if any, structural obstructions occur between the φ -probes and the agreement target (see (13–14), above)
- Recall now the data in (19–20), repeated from earlier:

- (19) a. *Trois filles sont arrivées.* (French)
Three girls are arrived.F.pl
 ‘Three girls arrived.’
 b. *Il est arrivé trois filles.*
It is arrived.M.sg three girls
 ‘Three girls arrived.’ [= (8a–b)]
- (20) a. *?al-?awlaad-u naam-uu/*naam-a.* (Standard Arabic)
*the-children-NOM slept-3pl/*slept-M.3sg*
 ‘The children slept.’
 b. *naam-a/*naam-uu l-?awlaad-u.*
*slept-M.3sg/*slept-3pl the-children-NOM*
 ‘The children slept.’ [= (9a–b)]

- at first glance, it looks like both (19b) and (20b) instantiate (i);
- but when it comes to (20b), this is imprecise—Standard Arabic VS clauses actually *do* exhibit agreement, but only in GENDER:

- (21) a. *?akal-na/*?akal-at* (Standard Arabic)
*the-student.F.pl-NOM ate-F.3pl/*ate-F.3sg*
 ‘The students ate.’
 b. *?akal-at/*?akal-na t-?aalibaat-u*
*ate-F.3sg/*ate-F.3pl the-student.F.pl-NOM*
 ‘The students ate.’ [Benmamoun & Lorimor 2006:2]

- i.e., Standard Arabic VS clauses actually instantiate (ii)

• This pattern is predicted to exist, given the account in §3.2.1.

Interim summary:

- The account in §3.2.1 is an UPWARD VALUATION account through and through
 - ⇒ it’s clear that there is no argument to be had *in favor* of DOWNWARD VALUATION based on SV-VS agreement asymmetries
 -
- To capture facts like (21), a DOWNWARD VALUATION account could posit that the GENDER probe is located within the verb phrase (e.g. on v^0)
 - whereas the NUMBER and PERSON probes are located on T^0
 [see, e.g., Bjorkman & Zeijlstra 2014:36]
- Distributing the different φ -probes among T^0 and v^0 in this fashion leaves much to be desired:
 - in languages w/both subject and object agreement, it is simply not the case that subject agreement lacks GENDER and object agreement lacks NUMBER and PERSON

- more generally, it comes out as an accident that GENDER agreement in particular is the one that “survives” in VS —
 - the GENDER probe and the NUMBER & PERSON probes are part of separate “mini-cartographies” (of v^0 and of T^0 , respectively)
 - and so there doesn’t seem to be a reason why it couldn’t be otherwise
- whereas the current account situates this behavior within the broader crosslinguistic context of the extended RAFA (11)
 - i.e., within the context of the general relative “fragilities” of agreement at-a-distance in GENDER, NUMBER, and PERSON

3.2.3. Pronouns in Standard Arabic VS

Further support for this approach to SV-VS agreement asymmetries comes from the behavior of pronouns:

- Unlike non-pronominal subjects, which in VS clauses control GENDER agreement but not NUMBER or PERSON (§3.2.2) —
 - pronominal subjects control full agreement, even in VS clauses:

(22) **naam-uu/*naam-a** *hum.*
slept-3pl/*slept-M.3sg *they*
 ‘They slept.’ [Aoun et al. 1994:205]

- This is a serious problem for DOWNWARD VALUATION approaches:
 - here we have a subject that has not moved to a preverbal position (and thus, does not c-command T^0), but still controls full agreement
- For a DOWNWARD VALUATION account like Bjorkman & Zeijlstra 2014, such data require a series of stipulations:
 - a distinction concerning “inherently” vs. “non-inherently” valued features (i.e., a diacritic distinguishing pre-valued features from derivationally-valued ones)
 - positing a special “overvaluation” operation for features on a probe, whose existence would undo most syntactic accounts of the *Person Case Constraint* (incl. Anagnostopoulou 2003, Béjar & Rezac 2003)

- In contrast, on the account presented here, all that is needed is (23):

(23) OBLIGATORY PRONOUN MOVEMENT

Pronouns, *even those that do not end up as high as the preverbal subject position*, are required to move to a higher position than their non-pronominal counterparts are required to move to.

- Recall, from (17)—repeated below—that a DP that has made it as high as (the specifier of) [Compl, π] will necessarily control full agreement
 - assuming, crucially, an UPWARD VALUATION system

(17) a. [... [_{#P} #⁰ [_{π P} π^0 [_{XP} DP_T [_{X'} ... (_tDP_T) ...]]]] ...]

b. [... [_{#P} #⁰ [_{π P} π^0 [_{XP} DP_T [_{X'} ... (_tDP_T) ...]]]] ...]

- And what about (23)?
 - such a requirement is robustly attested, crosslinguistically
 - Object Shift in Mainland Scandinavian (Holmberg 1986), personal pronouns in Halkomelem (Wiltschko 2006), etc.
- ⇒ Not only is there no argument from SV-VS agreement asymmetries *in favor* of DOWNWARD VALUATION and against UPWARD VALUATION —
- the behavior of pronouns in VS clauses may constitute an argument *against* DOWNWARD VALUATION and in favor of UPWARD VALUATION.

4. Further evidence for UPWARD VALUATION

- Preminger 2013 summarizes arguments by Polinsky (2003, 2015) and Polinsky & Potsdam (2001), and by Etxepare (2006) and Preminger 2009, showing that:
 - long-distance agreement (LDA) in Tsez and in Basque requires UPWARD VALUATION, and cannot be handled by DOWNWARD VALUATION
- This section:
 - reviews the relevant data, and the original argumentation
 - evaluates recent attempts at alternative analyses (Bjorkman & Zeijlstra 2014, 2015)

4.1. The argument from Tsez

- (24) a. eni-r [uži Ø-āy-ru-ŋi] Ø-iy-xo
mother-DAT boy.I.ABS I-arrive-PAST.PRT-NMZ I-know-PRES
‘The mother knows that as for the boy, he arrived.’
- b. eni-r [už-ā magalu b-āc’-ru-ŋi] b-iy-xo
mother-DAT boy-ERG bread.III.ABS III-eat-PAST.PRT-NMZ III-know-PRES
‘The mother knows that as for the bread, the boy ate it.’
[Polinsky & Potsdam 2001:606]

- What this is not:
(see Polinsky & Potsdam, Polinsky *op. cit.* for a more detailed version)

I. ‘prolepsis’

- (25) [SUBJ₁ pro_k [SUBJ₂ OBJ_k V₂] V₁]
— evidence:
- (26) “REFLEXIVE/RECIPROCAL” LDA
irbahin-er-no ^ŋali-r-no [žedā žedu
Ibrahim-DAT-and Ali-DAT-and each other.ABS.I.PL
goŋ’i-x-ānu-si-ŋi] b-ix-yo
invite-PRES-NEG-PRSPRT-NMLZ I.PL-know-PRES
‘[Ibrahim and Ali]_i know that they have not invited each other_i.’
NB: Tsez lacks null reflexives (i.e., in simple transitives, a null object must be interpreted as disjoint from the subject)
- (27) IMPOSSIBILITY OF OVERT PROLEPTIC OBJECT
eni-r Ø/*magalu/*že [užā magalu b-āc’-ru-ŋi
mother-DAT Ø/*bread.III.ABS/*it boy bread.III.ABS III-eat-PAST.PRT-NMZ
] b-ix-yo
III-know-PRES
‘The mother knows the boy ate the bread.’
- (28) LOCALITY OF LDA (CONTRA ANAPHORIC BINDING)
babi-r [eni-r [užā magalu b-āc’-ru-ŋi]
father-DAT mother-DAT boy bread.III.ABS III-eat-PAST.PRT-NMZ
b-iyxosi-ŋi] r/*b-iy-xo
III-know-NMLZ IV/*III-know-PRES
‘The father knows [the mother knows [the boy ate bread]].’

- (29) LACK OF MATRIX BINDING BY LDA TARGETS
a. * eni-r [nesā.nesiz yutkā] [^ŋali Ø-āk’i-ru-ŋi] Ø-iy-si
mother-DAT his.REFL in.house Ali.I.ABS I-go-PSTPRT-NMLZ I-knew
Intended: ‘The mother found out in his₁ house that Ali₁ had already left.’

COMPARE:

- b. babiy-ā [nesā.nesiz yutkā] ^ŋali žek’si
father-ERG his.REFL in.house Ali.I.ABS hit
‘The father hit Ali₁ in his₁ house.’

II. overt raising

— evidence:

- (29) LACK OF MATRIX BINDING BY LDA TARGETS (see above)
- (30) LACK OF MATRIX SCOPE FOR EMBEDDED QUANTIFIERS IN LDA
sis učitelr [šibaw uži Ø-ik’ixosi-ŋi] Ø-iy-xo
one teacher every boy.I.ABS I-go-NMLZ I-know-PRES
‘Some teacher knows that every boy is going.’
✓[\exists teacher > \forall boy]; ✗[\forall boy > \exists teacher]
(cf. actual clausemate quantifiers in Tsez, which allow scope inversion)
- (31) WORD ORDER
eni-r [už-ā magalu b-āc’-ru-ŋi] b-iy-xo
mother-DAT boy-ERG bread.III.ABS III-eat-PAST.PRT-NMZ III-know-PRES
‘The mother knows the boy ate the bread.’ [= (24b)]
- (32) MOVEMENT OF ENTIRE EMBEDDED CLAUSE, INCLUDING LDA TARGET, AS A CONSTITUENT
a. [užā magalu b-āc’-ru-ŋi] eni-r b-iy-xo
boy bread.III.ABS III-eat-PAST.PRT-NMZ mother-DAT III-knows-PRES
‘The mother knows the boy ate the bread.’
- b. eni-r b-iy-xo [užā magalu b-āc’-ru-ŋi
mother-DAT III-knows-PRES boy bread.III.ABS III-eat-PAST.PRT-NMZ
]
‘The mother knows the boy ate the bread.’

III. covert raising

— *evidence:*

- (29) LACK OF MATRIX BINDING BY LDA TARGETS (see above)
- (30) LACK OF MATRIX SCOPE FOR EMBEDDED QUANTIFIERS IN LDA (see above)

↔ **Overall:** LDA in Tsez involves agreement in φ -features between a verb in the superordinate clause and a nominal *properly contained* within an embedded clause

UPWARD VALUATION: ✓

DOWNWARD VALUATION: ✗

4.2. The argument from Basque

- Simple ditransitives in Basque:

- (33) Guraso-e-k ni-ri belarritako ederr-ak
parent(s)-ART_{pl}-ERG me-DAT earring(s) beautiful-ART_{pl}(ABS)
erosi d-i-zki-da-te.
bought 3.ABS-√-pl.ABS-1sg.DAT-3pl.ERG
'(My) parents have bought me beautiful earrings.' [Laka 1996]

- o case morphology distinguishing ABS, ERG, and DAT
- o agreement morphology co-indexing ABS, ERG, and DAT arguments
- o ABS arg. in ditransitives must be 3rd person (*Person Case Constraint*)
- o an emerging consensus: the DAT and ERG agreement morphemes arise via clitic doubling of full arguments (which can be *pro*)
 - Arregi & Nevins (2008, 2012); Preminger 2009

.....

- Etxepare (2006): LDA in “substandard” Basque⁹

- (34) [[**Harri horiek**] altxa-tze-n]probatu d-it-u-zte
stone(s) those_{pl}(ABS) lift-NMZ-LOC attempted 3.ABS-pl.ABS-√-3pl.ERG
'They have attempted to lift those stones.'
(subject is [pro-3pl.ERG]) [Etxepare 2006:333]

⁹“Substandard” because it is frowned upon by prescriptivists, and because it defies traditional inter-dialectal boundaries.

- o evidence that the ABS agreement target (e.g. *harri horiek* “stone(s) those_{pl}” in (34)) is properly contained within the embedded clause:

I. the Person Case Constraint (PCC)

without going into too much detail...:

- o the PCC in Basque cannot be captured as a morphological filter (Albizu 1997, Rezac 2008)
 - 2-place unaccusatives exhibit PCC effects if DAT can bind ABS, but don’t exhibit them if ABS can bind DAT
- o *all* syntactic accounts of the PCC that I am familiar with¹⁰ require UPWARD VALUATION

↔ “reversing” these accounts is far from trivial, since the PCC is fundamentally asymmetric w.r.t. the restrictions it places on the two internal arguments

- the possibilities for an ABS argument are restricted in the presence of a DAT argument, not the other way around

II. word order

- (35) [[Miren-entzat]_{pp} [**harri horiek**] altxa-tze-n] probatu
Miren-BEN stone(s) those_{pl}(ABS) lift-NMZ-LOC attempted
d-it-u-zte
3.ABS-pl.ABS-√-3pl.ERG
'They have attempted to lift those stones for Miren.'
(subject is *pro*<3pl.ERG>) [Preminger 2009:641]

¹⁰See, e.g., Adger & Harbour (2007), Anagnostopoulou (2003, 2005), Arregi & Nevins (2008, 2012), Béjar & Rezac (2003) and Preminger (2009), *inter alia*. Even the *Cyclic Agree* framework of Béjar & Rezac (2009) takes UPWARD VALUATION to be the primary mode of valuation, with apparent DOWNWARD VALUATION being a secondary option that—crucially—extends only as far as the probing label projects. Thus, given Bare Phrase Structure (Chomsky 1994), it is not a true instance of DOWNWARD VALUATION; and in any event, it falls within the family of maximally-local agreement relations discussed in §3.1.

III. *dative intervention* (cf.: (35))

(36) [[Lankide-e-i]_{DAT} [liburu horiek] irakur-tze-n]
 colleague(s)-ART_{pl}-DAT book(s) those_{pl}(ABS) read-NMZ-LOC
 probatu d-Ø/*it-u-(z)te
 attempted 3.ABS-sg/*pl.ABS-√-3pl.ERG
 ‘They have attempted to read those books to the colleagues.’
 (subject is *pro*<3pl.ERG>) [Preminger 2009:640]

- Of these, I think (III) is particularly telling; compare (36) with (37), repeated from earlier (and note the pl.ABS agreement in (37)):

(37) Guraso-e-k ni-ri belarritako ederr-ak
 parent(s)-ART_{pl}-ERG me-DAT earring(s) beautiful-ART_{pl}(ABS)
 erosi d-i-zki-da-te.
 bought 3.ABS-√-pl.ABS-1sg.DAT-3pl.ERG
 ‘(My) parents have bought me beautiful earrings.’ [= (33)]

- The difference between these two examples is that the DAT argument has been clitic-doubled in (37) but not in (36)
 - and clitic doubling of a DP voids intervention by that DP
 - Anagnostopoulou (2003, 2006), Béjar & Rezac (2003), inter alia

⇒ If we thought that it is the very structure associated with projecting a thematic dative, a.k.a. *AppIP*, that blocks agreement in NUMBER in (36) —

- we would (wrongly) predict that agreement in NUMBER with the ABS DP would be out in simple ditransitives, as well
- since *AppIP* is lower than even the lowest φ -probe in the clause (ν^0)

Basque LDA as *covert raising* of the ABS agreement target?

- Suppose that covert movement is required to bring the embedded ABS argument into a position where it can be agreed with by matrix φ -probes
 - ⇒ Basque LDA should result in anti-reconstruction effects (Bobaljik & Wurmbrand 2005); but it does not (Etxepare 2006:339)¹¹

¹¹This issue does not arise if one adopts Bobaljik’s (2002) approach to agreement as “lower-right corner” movement. Note, however, that a system that allows valuation only under *Merge* while permitting “lower-right corner” movement is equivalent to the system being defended here (allowing valuation at-a-distance but only in the UPWARD VALUATION direction).

- Also not clear, on this account: how to get regular datives to intervene for both PERSON and NUMBER, but clitic-doubled ones to intervene only for PERSON (Preminger 2009)

• Overall: LDA in Basque involves agreement in φ -features between a finite verb/auxiliary in the superordinate clause and a nominal *properly contained* within an embedded clause

UPWARD VALUATION: ✓
 DOWNWARD VALUATION: ✗

4.3. Bjorkman & Zeijlstra’s (2014) “hybrid” proposal

4.3.1. The proposal

(38) ACCESSIBILITY CONDITION: β (a goal) is accessible to α (a probe) **iff**:

- (i) β c-commands α (respecting additional locality restrictions)
 - in this case, call the relation between α and β an “*Upwards Agree*” relation
 - or –
- (ii) α and β are members of an *Upwards Agree-chain*
 - where $\langle x_n, \dots, x_1 \rangle$ is an “*Upwards Agree-chain*” **iff** every chain member x_{i+1} stands in an *Upwards Agree* relation with x_i

[Bjorkman & Zeijlstra 2014:13]

- As it stands, (38(ii)) allows UPWARD VALUATION from a goal β to a probe α if α and β are (transitively) related by *Upward Agree* (=DOWNWARD VALUATION) in some feature or other

• This effectively sanctions **any and all UPWARD VALUATION relations**

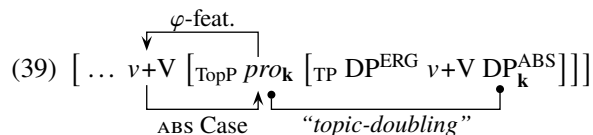
- since, to my knowledge, no one has a working (and restrictive) theory of what is a “possible formal feature” and what isn’t
 - ⇒ we could always posit some feature [F] such that α values [F] on β via *Upward Agree* (=DOWNWARD VALUATION), thereby licensing UPWARD VALUATION in all actual, observed features

⇒ The proposal is interesting only to the degree that appeals to (38(ii)) involve featural relations that are independently plausible.

- Also worth noting:
if Wurmbrand (2014) is correct that all morphosyntactic selection is mediated by DOWNWARD VALUATION in selectional features —
 - then (38(ii)) is satisfied *whenever* α c-commands β
 - since α and β will be connected via a series of (selectional) DOWNWARD VALUATION relations
 - again, with the net result being that all UPWARD VALUATION relations are effectively sanctioned by (38)

4.3.2. Tsez

- Bjorkman & Zeijlstra (2014:28–29):



↔ Problems:

- I. case mismatch is possible under “topic-doubling”, but not under Tsez LDA:

- (40) a. **Every boy_k^{NOM}** likes **his_k^{GEN}** mother.
 b. As for **her_k^{ACC/OBJ}**, I think **she_k^{NOM}** will be just fine.
- (41) a. * Eni-r [užā **kidbe-r** magalu ∅-tāλ-ru-ŋi]
 mother-DAT boy-ERG **girl.II-DAT** bread(ABS) I-give-PAST.PRT-NMZ
 y-iy-xo.
 II-know-pres
Intended: ‘The mother knows that as for the girl, the boy gave bread to her.’
- b. * Eni-r [už-ā **kidbe-s** magalu b-āc’-ru-ŋi
 mother-DAT boy-ERG **girl.II-GEN** bread(ABS) III-eat-PAST.PRT-NMZ
] y-iy-xo.
 II-know-pres
Intended: ‘The mother knows that as for the girl, the boy ate her bread.’
 [Polinsky & Potsdam 2001:606–607]

II. co-indexation is not clause-bounded, Tsez LDA is:

- (42) a. **Every boy_k** thinks [that the tooth fairy will come to visit **him_k**].
 b. As for **this boy_k**, I think [that the tooth fairy will come to visit **him_k**].
- (43) Babir [enir [užā **magalu** bāc’ruŋi] b-iyxosi-ŋi]
 father mother boy **bread.III.ABS** ate III-know-NMLZ
r-/*b-iy-xo.
IV-/*III-know-pres
 ‘The father knows [the mother knows [the boy ate bread]].’
 [Polinsky & Potsdam 2001:618]

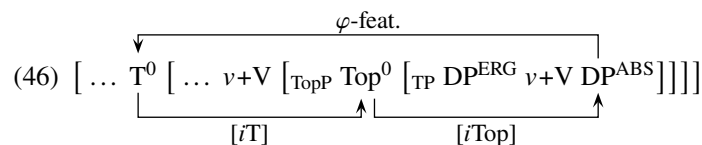
III. co-indexation is not island-sensitive, Tsez LDA is:

- (44) a. **Every painter_k** thinks that [**he_k** and Picasso] are the two greatest ever.
 b. As for **this painter_k**, I’m told that [**he_k** and Picasso] are the two greatest ever.
- (45) Učitele-r **b-/*y-/*∅-iy-x** [**Pat’i-n**
 teacher-DAT **I.PL-/*II-/*I-know-pres** **Fatima.II(ABS)-AND**
ŋali-n hič’č’a ʔaq’luyaw yāŋ-ru-ŋi].
Ali.I(ABS)-AND most clever be.pres-past.prt-nmz
 ‘The teacher knows that Fatima and Ali are the smartest.’

IV. *pro* topic, c-commanding a co-indexed overt lexical noun phrase

- a. Binding Principle C
- there is considerable evidence that Principle C is active in Tsez (Polinsky 2015, Polinsky & Potsdam 2001)
 - ↔ but the proposed structure violates it
- b. information structure
- this pretty much turns the theory of information-structure on its head (cf. Rizzi 1986)
 - relatedly, this would be the only instance of *pro* in Tsez that does not alternate with an overt noun phrase
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- Bjorkman & Zeijlstra (2015):



⇒ Problems:

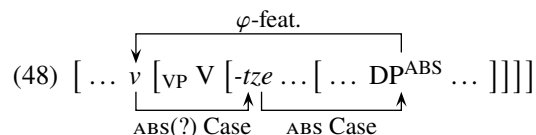
- I. noun class agreement in Tsez isn't on T^0 , it's on v^0
 - and its presence is not related to “[iT]”—it occurs even in infinitives and deverbal nouns (Polinsky 2015)
- II. the embedded clauses in question (those exhibiting LDA) are about as far from “tense-dependent” as an embedded clause can ever be:

(47) $\text{yaq}^s \text{u}^l\text{-}\lambda\text{a}$ $\text{d}\ddot{\text{a}}\text{-r}$ [$\text{b}^s\text{-}\text{e}\ddot{\text{z}}\text{e}$ gulu nesi-qo-r yude
today-TOP 1sg-LAT **III-big horse.III.ABS** he-POSS-LAT tomorrow
 $\text{ne}\lambda\text{-xosi-li}$] b-iy-s
give-PRES.PRT-NMZ **III-know-PAST.EVID**
‘Today I found out that they will give him the big horse tomorrow.’
[*Maria Polinsky, p.c.*]

- if the semantics of these embedded clauses justifies assuming DOWNWARD VALUATION in “[iT]–[uT]”, then so do the semantics of every embedded clause in every other language
 - but, of course, many of those don't show φ -feature LDA
- ⇒ positing DOWNWARD VALUATION in “[iT]–[uT]” specifically for Tsez amounts to precisely the kind of ad hoc move discussed in §4.3.1

4.3.3. Basque

- Bjorkman & Zeijlstra (2014:29–33):



⇒ Problems:

- I. the idea that the embedded ABS argument in (48) receive their case from v^0 (or from any other functional head, for that matter) is dubious

(49) [[Miren-entzat]_{PP} [harri horiek] altxa-tze-n] probatu
Miren-BEN stone(s) those_{pl}(ABS) lift-NMZ-LOC attempted
d-it-u-zte
3.ABS-pl.ABS-√-3pl.ERG
‘They have attempted to lift those stones for Miren.’
(subject is *pro*<3pl.ERG>)

(50) [[Lankide-e-i]_{DAT} [liburu horiek] irakur-tze-n]
colleague(s)-ART_{pl}-DAT book(s) those_{pl}(ABS) read-NMZ-LOC
probatu d-∅/*it-u-(z)te
attempted 3.ABS-sg/*pl.ABS-√-3pl.ERG
‘They have attempted to read those books to the colleagues.’
(subject is *pro*<3pl.ERG>) [= (35–36)]

- as (49–50) illustrate, a DAT co-argument intervenes in agreement relations targeting the embedded ABS;
 - but the ABS DP is still, well, absolutive—even in the structure where LDA doesn't go through
- ⇒ there is no ABS-assigning functional head that is low enough
- even v^0 in the embedded clause (if there is one) would already be higher than both the DAT DP (in [Spec, ApplP]) and the ABS DP
 - probe-goal relations are subject to *minimality*, the indirect object is a case-bearer, and there is no appropriate probe that c-commands the direct object that doesn't also c-command the indirect object
- ⇒ a probe-goal account of ABS assignment in Basque is off track

II. *-tze* is misanalyzed

“... the nominalizer *-tze* is a variant of v^0 , thus able to assign absolutive case, but [...] given its nominal nature it also bears its own uninterpretable Case feature, and so must again probe upwards and establish a relationship with a higher Case-checking head.”

[Bjorkman & Zeijlstra 2014:32]

- this simply cannot be the case:
 - what it means for something to be (a variant of) v^0 is that it is a verbalizer, assigning the category ‘verb’ to its complement
 - see, e.g., Marantz 1997
 - but the constituent headed by *-tze* is very clearly nominal
 - it can combine with the article (e.g. *-tze-a*, in the absolutive singular), as well as various postpositions
 - thus, if the embedded structure in (48) contains a v^0 , it is in addition to (and distinct from) the n^0 that it clearly contains

⇒ the two DOWNWARD VALUATION relations in (48) fail to overlap

- the higher one terminates at n^0 ;
- the lower one originates at (the embedded) v^0

• n^0 and (the embedded) v^0 are not connected via any feature relation that is not ad hoc

(except *selection*; but treating *selection* as DOWNWARD VALUATION undoes the crux of Bjorkman & Zeijlstra’s proposal; see §4.3.1)

⇒ predicting (wrongly) that φ -feature LDA in (48) should be out

III. the idea that the entire *-tze-n* (“-NMZ-LOC”) nominalization receives case from anything in the matrix clause is dubious—for two reasons:

a. *-tze-n* (“-NMZ-LOC”) nominalizations can co-occur with DAT/ERG/ABS arguments in the superordinate clause:

(51) [Liburu-a irakur-tze-n] saiatu **dira** pro-3pl.ABS.
 book-ART_{sg}(ABS) read-NMZ-LOC tried **3pl.ABS.**√
 ‘They tried to read the book.’ [Etxepare 2006:322]

b. if the *-tze-n* (“-NMZ-LOC”) nominalization receives case from the matrix clause, there is no reason why that case would have to be ABS

- indeed, the other *-tze*-based LDA construction discussed by Etxepare and by Preminger —

(where case is assigned to the *-tze* nominalization in the matrix clause)

— comes in both ABS and DAT varieties, morphologically marked as such:

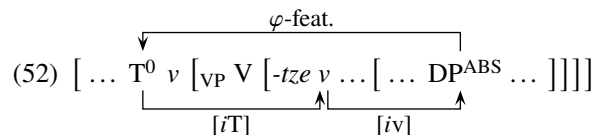
- *-tze-a* (“-NMZ-ART(ABS)”)
- *-tze-a-ri* (“-NMZ-ART-DAT”)

• not so for this construction

- moreover, in this construction, it is always the ABS morpheme(s) on the auxiliary (if any) that show LDA with an embedded DP
 - again, in contrast to the other *-tze*-based LDA construction

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• Bjorkman & Zeijlstra (2015):



“Any additional embedded head would disrupt LDA (e.g. Appl⁰, cf. dative intervention in Basque LDA: Etxepare 2006, Preminger 2009).”

• Problems:

I. we have already seen that Appl⁰/ApplP cannot be what disrupts LDA with embedded ditransitives

- that would predict intervention in (NUMBER) agreement even in simple ditransitives
 - and fails to capture the correlation between clitic doubling and lack of intervention for NUMBER agreement

• in fact, on this view, clitic doubling should make intervention *worse*, instead of alleviating it

- since the clitic is now one more “additional head” on the clausal spine between T⁰/ v^0 and the embedded agreement target

II. what is “[iv]”?

- we have already seen that it cannot be ABS case, since ABS in Basque cannot be assigned by a functional head (see above)
 - and we have already seen that treating *selection* as a DOWNWARD VALUATION relation is a nonstarter for Bjorkman & Zeijlstra
- ⇒ all that remains is that “[iv]” is an ad hoc feature whose only purpose is to make UPWARD VALUATION in φ -features possible in (52)
- this is the closest thing to a falsification of Bjorkman & Zeijlstra’s proposal that could logically exist.

5. A generalization about LDA

Let us adopt the following labels:

- α : a nominal argument
- Pred^0 : the predicate that assigns α its theta-role
- H^0 : a head that agrees with α in φ -features

Then the proposed generalization is the following (square brackets indicate clause boundaries):

(53)

		<i>attested?</i>
a.	H^0 and Pred^0 are clausemates	✓
b.	[... H^0 ... [... Pred^0 ...]] (H^0 in higher clause, Pred^0 in embedded clause)	✓
c.	[... Pred^0 ... [... H^0 ...]] (Pred^0 in higher clause, H^0 in embedded clause)	✗

- What (53b) looks like:
 - LDA in Tsez, Basque
 - in addition to these, it is also attested in at least the following languages:
 - other Nakh-Dagestanian languages (Forker 2013, Khalilova 2009)
 - Innu-Aimûn (Branigan & MacKenzie 2002), Passamaquoddy (Bruening 2001)
 - Latin (Haug 2014, Haug & Nikitina 2012)
 - Romanian and Greek (Alexiadou et al. 2012)

- What (53c) *would* look like:

- (54) a. * Three women said that there seem that it will rain.
 b. * I told three women that there seem that it will rain.

[Baker 2008:75]

- Baker (2008): (54a–b) are ruled out on independent grounds
 - namely, the *Phase Impenetrability Condition* (Chomsky 2000, 2001)

- But this explanation is unsatisfactory:
 - it presupposes that every φ -agreeing head is immediately-contained in a clause that is phasal
 - this is simply not so: agreeing infinitives, as well as A-raising out of finite clauses, demonstrate that this presupposition is false
- NB: The same phenomena also cast doubt on the *feature-inheritance* version of Phase Theory (Chomsky 2008, Richards 2007).

⇒ The crosslinguistic absence of (53c) remains in need of an explanation.

.....

- The absence of (53c) follows under a theory that allows only UPWARD VALUATION:
 - if arguments cannot be merged any lower than their (first) theta position, and DOWNWARD VALUATION in φ -features is impossible —
 - there is simply no way for a head H^0 contained in an embedded clause to agree in φ -features with an argument of a predicate in a higher clause
- However, as soon as we so much as *allow* DOWNWARD VALUATION —
 - (53c) should be possible
- Particular factors may conspire to rule out (53c) in a particular language
 - e.g.:
 - all φ -probes in the language happen to be immediately c-commanded by phase heads; *and/or*
 - some argument always moves to [Spec,HP] for every φ -probe H^0
- But this does not explain why (53c) is systematically absent
 - to cite one example of a scenario that would clearly facilitate (53c), if DOWNWARD VALUATION in φ -features were allowed:
 - suppose the clause containing H^0 in (53c) was a VS unaccusative, contained in an ECM- or raising-sized agreeing infinitive
 - the agreeing infinitive should be able to find, and agree with, a nominal argument in a higher clause
 - even if that nominal is thematically unrelated to the embedded infinitival clause
- unless DOWNWARD VALUATION in φ -features is categorically ruled-out.

6. Conclusion and speculations

In this talk, I have argued that agreement in φ -features adheres to strict UPWARD VALUATION:

- the element that gets its φ -feature values derivatively (the verb or TAM-marker) must c-command the element with which it agrees (the nominal)

First, we reviewed some purported arguments in favor of DOWNWARD VALUATION in φ -features —

- the existence of languages where the agreement controller seems to always surface in a position c-commanding the finite verb (e.g. Bantu):
 - only an argument under the (unlikely) assumption that there is no such thing as *opacity* in syntactic derivations
- asymmetries between partial agreement in VS and full agreement in SV:
 - handled *at least* as well under UPWARD VALUATION
 - also, the UPWARD VALUATION account:
 - explains why it is GENDER in particular that “survives” when VS exhibits partial agreement
 - explains the exceptional behavior of pronouns in terms of obligatory movement out of the verb phrase (a crosslinguistically well-attested property of pronouns)

Next, we examined two empirical domains that are only amenable to an UPWARD VALUATION analysis of φ -agreement:

- LDA in Tsez (Polinsky 2003, 2015, Polinsky & Potsdam 2001)
- LDA in “substandard” Basque (Etxepare 2006, Preminger 2009)

And we critically evaluated recent attempts to reanalyze these patterns in other terms (Bjorkman & Zeijlstra 2014, 2015)

- demonstrating their inadequacy in both empirical domains

Finally, we offered a generalization concerning the structural relation between an agreeing head H^0 and the predicate whose argument H^0 agrees with —

- showing that only a theory that rules out DOWNWARD VALUATION in φ -features altogether derives this generalization

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This talk has purposefully dealt with agreement in φ -features only; where does that leave us, in the broader context of linguistic theory?

- Recent work suggests that DOWNWARD VALUATION is necessary in establishing other kinds of relations
 - such as: negative concord, selection, auxiliary verb morphosyntax, the derivation of syntactically interrogative CPs
 - see, inter alia, Bjorkman (2011), Bobaljik & Wurmbrand (2014), Wurmbrand (2011, 2012, 2014) and Zeijlstra (2012)
- This could be taken as (further) support for the idea that φ -feature agreement is fundamentally different from the operation that establishes other syntactic dependencies
 - e.g. because the former is not part of syntax proper, but of the post-syntactic morphological computation (Bobaljik 2008)
 - in Preminger 2014, however, I provide reason to believe that φ -agreement must be computed within syntax proper; roughly:
 - m-case feeds φ -agreement (Bobaljik 2008)
 - φ -agreement, in turn, feeds the kind of movement that has LF consequences (Preminger 2014)
 - in particular: movement to subject position (which has consequences for scope)
 - ⇒ both m-case and φ -agreement must occur in the part of the grammar that can still directly feed LF (i.e., syntax)
- this suggests that reducing the formation of *all* syntactic (and some semantic) dependencies to a single underlying operation won't work.

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