

# On the typology of verb-stranding ellipsis: focus, identity, and movement

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## 0 Introduction

In any theory that countenances the idea of interacting grammatical modules, how should we characterize and/or limit the flow of information between those modules?

Within the generative tradition, this question is by now quite old (Zwicky and Pullum, 1986), but continues to persist in various contemporary forms. Different ways in:

- syntactic or morphosyntactic “choices” conditioned by phonological optimization<sup>1</sup>
- constraints on optimal prosodic/phonological representations influencing morpho-syntactic operations<sup>2</sup>
- arguments for strict separation between (morpho)syntax and (morpho)phonology<sup>3</sup>

Articulated theories of the interface between (morpho)syntax and (morpho)phonology cannot get away from this question, and must make commitments about it, either explicitly or implicitly.

This talk comes at this question indirectly, by trying to fit together a few interacting sets of commitments:

1. the status of head movement in the architecture of the grammar<sup>4</sup>
2. the ellipsis identity relation:<sup>5</sup>
  - the timing of its application in ellipsis licensing;
  - the kinds of representations it calls on (e.g. syntax, LF, semantics)
3. the point at which the phonological demands of focus come to matter in a derivation

We already understand a lot about the commitments that will be required in relation to (2) and (3), from examinations of phrasal movement out of ellipsis sites. For example, WH-phrases extracted from ellipsis sites need not lexically match an antecedent.

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<sup>1</sup>Recent examples include Shih 2017; Shih and Zuraw 2017

<sup>2</sup>e.g., Clemens 2019; Richards 2016, 2017; Bennett et al. 2019

<sup>3</sup>Bye and Svenonius 2012, among many others

<sup>4</sup>Chomsky 2000; Boeckx and Stjepanović 2001; Harley 2004; Schoorlemmer and Temmerman 2012; McCloskey 2017; Matushansky 2006; Georgi and Müller 2010; Roberts 2010; Harizanov and Griбанова 2019; Arregi and Pietraszko 2021; Platzack 2013; Svenonius 2016, among so many others

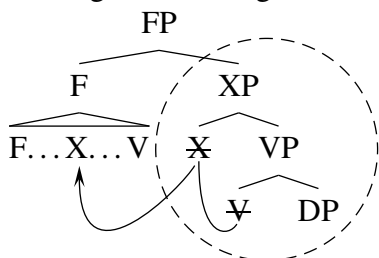
<sup>5</sup>Hardt 1993; Sag 1976; Fiengo and May 1994; Rooth 1992; Merchant 2001; Heim 1997; Chung 2006, 2013; Merchant 2013; Rudin 2019; Chung et al. 1995, among so many others

- (1) Phrasal movement out of an ellipsis site (Schuyler, 2001; Merchant, 2001, 2008):  
I know **which boy** they praised  $x$ , but not **which girl** ~~they praised  $x$~~ .

→ WH-extraction leaves behind variables, which do not count as distinct for the purposes of ellipsis licensing conditions (Rooth, 1992; Heim, 1997; Merchant, 2001). We will revisit this formulation of things in §4.

An analogous question can be asked about head movement out of ellipsis domains (e.g. (2)), although the answer has been more difficult to establish.

- (2) Paradigms involving verb-stranding ellipsis (VSE):



- (3) Russian VSE (TP ellipsis, Gribanova 2017b)

- a. Evgenija otpravila posylku v Moskvu?  
Evgenija send.PST.SG.F package.ACC to Moscow.ACC  
'Did Eugenia send the package to Moscow?'
- b. Ne otpravila. / Otpravila.  
NEG send.PST.SG.F / send.PST.SG.F  
'She didn't. / She did.'

- (4) Irish VSE (TP ellipsis, McCloskey 2011, 2017)

- a. Ar chuir tú isteach ar an phost?  
INTERR-[PAST] put-[PAST] you in on the job  
'Did you apply for the job?'
- b. Chuir. / Níor chuir.  
put-[PAST] / NEG-[PAST] put-[PAST]  
'I did. / I didn't.'

- (5) Uzbek VSE ( $\sim vP$  ellipsis, Gribanova 2020)

- a. Farhod to'siq-ni qizil-ga bo'ya-d-i-mi?  
Farhod fence-ACC red-DAT paint-PST-3-Q  
'Did Farhod paint the fence red?'
- b. Ha, bo'ya-d-i.  
yes paint-3-PST  
'Yes, [he] painted [the fence red].'

Questions:

- Does head movement have the same properties as phrasal movement w.r.t. the identity conditions imposed on the material extracted out of the ellipsis site? (My answer: not always.)
- To the extent that head movement interacts differently with ellipsis sites than phrasal movement, is it at least uniform in its behavior crosslinguistically? (My answer: nope.)
- What mechanisms interact to give rise to the crosslinguistic variation in VSE?

Preview of the main arguments:

- §1 elaborates different ways of understanding the existing landscape of VSE across languages, focusing especially on matching requirements on the verb in VSE.
- §2 presents arguments from Uzbek VSE, in favor of a particular perspective on the source of variation in verb matching (Griбанова, 2020).
- §3 sketches a potential analytical approach to crosslinguistic variation in VSE, which follows directly from the independently supported idea that a certain class of head movements is post-syntactic in nature, while others are syntactic in nature (Harizanov and Griбанова, 2019).
- §4 considers the consequences of this kind of analysis for the derivational timing of head movement, ellipsis licensing, and focus expression, engaging closely with discussions in Merchant 2018.

## 1 A history of the Verbal Identity Condition in VSE

### 1.1 The puzzle: phrasal vs. head extraction out of ellipsis domains

Certain case studies of VSE – in Irish (McCloskey, 2011, 2012, 2017) and Hebrew (Goldberg 2005b,a, c.f. Doron 1999) — argued that head movement in e.g. (2), by contrast with phrasal movement (1), requires identity to an antecedent of all the elements in the stranded verb that originated inside the ellipsis site.

(6) The Verbal Identity Condition (VIC):

In a configuration in which there is head movement out of an ellipsis site, the licensing condition on ellipsis requires identity between parts of the morphosyntactic complex that originate inside the ellipsis site and the corresponding antecedent parts *no matter what*.

The VIC has (prematurely) been taken to be a defining feature of VSE across languages (Schoorlemmer and Temmerman, 2012; van Craenenbroeck and Merchant, 2013; Lipták, 2015). If this were correct, then VSE could provide an important argument in favor of a postsyntactic view of head movement.<sup>6</sup>

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<sup>6</sup>There is an alternative explanation for why the VIC holds, which I do not pursue here: the verb in such languages could be undergoing obligatory reconstruction (Goldberg, 2005b), whereas in phrasal movement, the reconstruction may not be obligatory. Putting aside for the moment the observation that this putative variation in reconstruction behavior should, in principle, be derived from some deeper property, such a solution raises another difficulty as well. As Fox (2000) observes, mismatch of phrases extracted out of VP ellipsis sites is possible even in cases where reconstruction into the ellipsis site is required for the correct scopal interpretation to obtain.

- i. An American runner seems to Bill to have won a gold medal, and a Russian athlete does, too.

The idea is that the subject in the second conjunct should reconstruct into its base position (inside the ellipsis site) in order for the most likely scopal interpretation to obtain; but the mismatch between *an American runner* and *a Russian athlete* is still licensed. Since reconstruction into an ellipsis site is not enough to ban mismatches in phrasal movement, positing obligatory reconstruction in head movement is not sufficient to derive the required matching effects in e.g. Irish; something special will still need to be said about head movement. Thanks to Danny Fox and David Pesetsky for discussion on this point.

Logic (to be revised):

- If head movement is postsyntactic, (Schoorlemmer and Temmerman, 2012; McCloskey, 2017)
  - in VSE there will be the appearance of extraction and stranding **but**
  - in (2), the relevant heads will remain inside the ellipsis site when the identity relation is calculated.
- This gives us the contrast between phrasal extraction generally (1) and head extraction (2) out of ellipsis sites (in languages like Irish).

Commitments about the architectural status of head movement → predictions about how the identity condition applies (or doesn't) to heads moved out of ellipsis sites.

- If head movement is uniformly syntactic,<sup>7</sup> mismatch of extracted heads (as compared to antecedent counterparts) will be permitted, as with phrasal movement;
- If head movement is uniformly postsyntactic,<sup>8</sup> mismatch of extracted heads should never be permitted (strictly conforming to the VIC);
- If 'head movement' is really two separate operations — one syntactic, one postsyntactic, each with their own properties (Harizanov and Griбанова, 2019) — then whether matching is required should co-vary with the type of head movement that's involved in a given language and configuration.

## 1.2 On the theoretical import of the VIC: two perspectives

### WHERE WE STAND TODAY:

The strength of the VIC varies across languages (poorly understood):

- Irish, Scottish Gaelic, Lithuanian, Uzbek: for the parts of the verbal complex originating inside the ellipsis site, no mismatches between stranded and antecedent instances, ever (unlike (1)) (McCloskey 2011, 2012, 2017; Thoms 2016, 2018; Portelance 2020; Griбанова 2020).
- Russian, Hungarian, European Portuguese, Swahili, Greek: for the parts of the verbal complex originating inside the ellipsis site, mismatch between the stranded and antecedent instances is possible under contrast (like (1)) (Griбанова, 2013, 2017b; Lipták, 2013; Santos, 2009; Ngonyani, 1996; Merchant, 2018).
- The status of Hebrew has changed: Goldberg (2005b,a) put it in the VIC-obeying group, but Landau (2018, 2020a) demonstrated that verbal identity need not hold at all.

<sup>7</sup>(Travis, 1984; Matushansky, 2006; Roberts, 2010, *i.a.*)

<sup>8</sup>(Chomsky, 2000; Hale and Keyser, 2002; Harley, 2004; Platzack, 2013; Svenonius, 2016, *i.a.*)

- (7) Mismatch of verb roots is impossible in Irish VSE (McCloskey, 2012)<sup>9</sup>
- a. \*Níor cheannaigh mé teach ariamh, ach dhíol.  
NEG-PAST buy I house ever but sold  
'I never bought this house, but sold it.'
  - b. \*Cé gur mhol an bainisteoir na himreoirí inné, cháin inniu.  
although C-[PAST] praise the manager the players yesterday criticized today.  
'Although the manager praised the players yesterday, he criticized them today.'
- (8) Mismatch of verb roots is possible in Russian VSE, when the verbs contrast (Griбанова, 2017b)
- a. Našël li Paša knigu v biblioteke, i žurnal v stolovoj?  
find.PST.SG.M Q Paša book.ACC in library.PREP and magazine.ACC in cafeteria.PREP  
'Did Pasha find a book in the library, and a magazine in the cafeteria?'
  - b. Net, ne našël, a poterjal.  
No, NEG find.PST.SG.M but lose.PST.SG.M  
'No, he didn't find (...), he lost (...).'

Until recently, the best evidence that we had in favor of the VIC came from two languages — Irish and Scottish Gaelic — from the same language family. It was important, at that point, to establish whether:

- VIC effects can be found in a broad and diverse array of languages;
- those effects can all be uniformly explained by appealing to independent and language-specific facts about the way in which verbs can(not) express the pitch accent associated with focus.

**Perspective 1:** The VIC is not about head movement and ellipsis.<sup>10</sup>

- It doesn't hold in the general case, and poses no interesting theoretical questions for the status of head movement or its interaction with ellipsis.
- If this is correct, head movement is just like phrasal movement.
- The appearance of obligatory verb-matching matching in VSE (even under contrast) in e.g. Irish and Scottish Gaelic can/should be explained away by other means (Merchant, 2018; Thoms, 2018).

**Perspective 2:** The VIC is a systematic property of certain languages (but not others), and is attributable to something about the way that head movement interacts with ellipsis.

- We need more empirical evidence w.r.t. the VIC in VSE, of just the right type, from non-Celtic (preferably non-Indo-European) languages — Portelance 2020 and Griбанова 2020 were a step in this direction.

<sup>9</sup>Only parts originating inside the ellipsis site must match: not finiteness, mood, force, etc. See McCloskey 2012 for more thorough discussion.

<sup>10</sup>This assertion sometimes comes hand in hand with the argument that certain constructions are not VSE at all, but rather instances of argument ellipsis (AE), in which individual arguments of the verb are separately elided (Landau, 2018, 2020b,a). But the two questions are in principle separable: while cases of true AE are predicted never to obey the VIC, it is possible for us to ask the question of whether genuine VSE constructions do ever obey the VIC. I am concerned today primarily with those constructions which demonstrably involve genuine VSE.

- If we can establish that there is a diverse group of languages which obey the VIC in VSE constructions, then we have an interesting theoretical puzzle on our hands:
  - Russian, Hungarian, etc. treat head movement as if it were equivalent to phrasal movement (e.g. syntactic) w.r.t. the calculation of the identity relation in ellipsis.
  - Irish, Scottish Gaelic, Lithuanian, Uzbek, and maybe other languages treat head movement as if it is not a syntactic operation.

§2 is a demonstration of the kind of reasoning that is needed to support Perspective 2:

- summarizes the arguments in Griбанова 2020 in favor of the position that Uzbek has genuine VSE, and it obeys the VIC in genuine VSE.<sup>11</sup>
- shows that, crucially, this behavior cannot be explained by appealing to language-specific factors relating to the expression of focus on Uzbek verbs — that is, that the line of analysis pursued by Perspective 1 won't be enough.

## 2 Arguments in support of Perspective 2 from Uzbek VSE (Griбанова, 2020)

### 2.1 Preliminaries & Assumptions

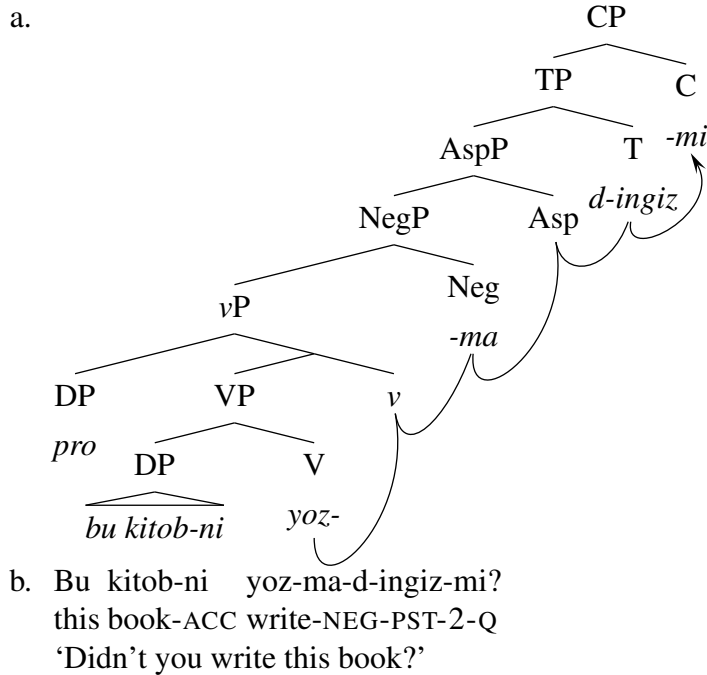
- Uzbek: under-studied; Turkic; spoken in Central Asia.
- ~25-30 million speakers total; ~21 million in Uzbekistan.
- Head-final (SOV, post-positions), agglutinative (suffixing).
- Neighbored by several other Turkic-speaking nations; regional variation inside Uzbekistan corresponds to which border is closest.

As with other head-final languages (Japanese, Korean, Turkish), the Uzbek verbal complex bears agglutinating verbal and clausal suffixal morphology that stacks in a mirror-principle-obeying fashion.

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<sup>11</sup>See recent work by Portelance (2019, 2020) for an argument along the same lines from Lithuanian, which I will not have adequate space to discuss here.

(9) Uzbek finite verb formation: head movement (Gribanova, 2020)<sup>12</sup>



- Grammatical subjects are generally pro-dropped. Overt subjects start low (in vP) and may raise high or may stay in situ → differential subject marking (Gribanova, 2017a).
- Heads are linearized to the right (reflecting Uzbek’s robust head-finality);
- *v* is responsible for predication and introduces verbal complements.
- Because of head-finality, I have no good evidence about where in the clausal spine the verbal complex is actually realized.

Context from Gribanova 2020, not defended/discussed here:

- approach to fieldwork, dialectal/idiolectal variation, and data archiving;<sup>13</sup>
- arguments that verbal predication results from something like head movement in the first place;
- discussion re: the size of the ellipsis site in Uzbek VSE (~ vP)

## 2.2 Uzbek argument ellipsis vs. verb-stranding ellipsis

Uzbek has a construction that looks like it could be the result of one of three potential derivations: VSE, AE, and radical argument drop.

<sup>12</sup>Abbreviations: ABL ablative case, ACC accusative case, C complementizer, CAUS causative, COP copula, DAT dative case, EMPH emphatic particle, EVID evidential, FUT future, GEN genitive case, HAB habitual, LOC locative case, NEG negation, NMLZ nominalizer, NOM nominative case, PL plural, POSS possessive, PRS present, PRF perfect, PROG progressive, PST past, PTCP participle, Q polar question, SG singular, VN verbal noun.

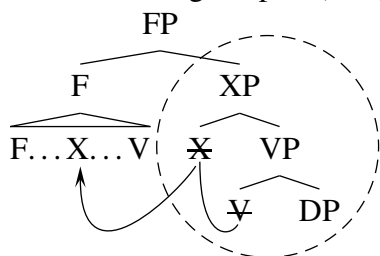
<sup>13</sup>See also Gribanova To appear.

- (10) a. Kitob-ni o'qi-d-ingiz-mi?  
book-ACC read-PST-2-Q  
'Did [you] read the book?'  
b. Ha, o'qi-d-im. / Yo'q, o'qi-ma-d-im.  
yes read-PST-1SG / no read-NEG-PST-1SG  
'Yes, [I] read [the book].' / 'No, [I] didn't read [the book].'
- (11) Men Farhod sabzi-ni xomligicha ye-ma-d-i deb o'yla-d-im, lekin siz ye-d-i  
1SG Farhod carrot-ACC raw eat-NEG-PST-3 C think-PST-1SG but 2SG eat-PST-3  
deb ayt-d-ingiz.  
C say-PST-2  
'I thought that Farhod didn't eat the carrot raw, but you said that [he] ate [the carrot raw].'

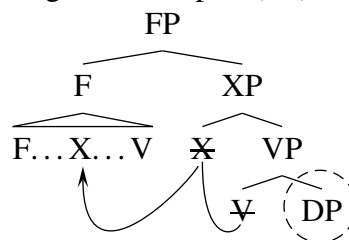
For evidence that pro-drop alone will not capture the data, see Gribanova 2020.

Remaining possibilities:

- (12) Verb-Stranding Ellipsis (VSE):



- (13) Argument Ellipsis (AE)



Claim: there exists a set of syntactic elements to which AE may not apply.

- (14) Predicates are immune to AE.<sup>14</sup>

If (14) is accurate, and VSE is operative in Uzbek, then:

- constituents in predicative positions should not be able to undergo ellipsis on their own (borne out in (15–17))...
- but those same constituents should be able to undergo ellipsis if all other ~VP-internal material is elided as part of VSE (borne out in (18–19)).

- (15) AE cannot apply to predicates of copular clauses<sup>15</sup>

- a. Ora-lar-ing-da biror kishi xafa e-d-i-mi? Ha, \*(xafa) e-d-i.  
among-PL-2-LOC any person sad E-PST-3-Q yes sad E-PST-3  
'Among you was anyone sad? Yes, [someone] was sad.'
- b. U yosh e-d-i, va siz ham \*(yosh) e-d-ingiz.  
3SG young E-PST-3 and 2SG also young E-PST-2  
'He was young, and you also were young.'
- c. U talaba e-d-i, va siz ham \*(talaba) e-d-ingiz.  
3SG student E-PST-3 and 2SG also student E-PST-2  
'He was a student, and you also were a student.'

<sup>14</sup>There is an interesting and productive harmony between this assertion and the more general observation defended in Landau 2021 on the basis of Hebrew data, which is that AE can target only elements of type <e>.

<sup>15</sup>Copular clauses do not permit any larger ellipsis either — if they did, omitted non-verbal predicates in examples like (15) would be grammatical. For a discussion of why this is not permitted, see Gribanova 2020.



- (16) AE cannot apply to object depictives or resultatives (as evidenced by interpretation)
- Farhod Zamira-ni xafalaligida ko'r-d-i va Hasan Nigora-ni ko'r-d-i.  
Farhod Zamira-ACC sad see-PST-3 and Hasan Nigora-ACC see-PST-3  
'Farhod saw Zamira sad and Hasan saw Nigora ( $\neq$  sad).'
  - Farhod to'siq-ni qizil-ga bo'ya-d-i. Zamira esa, eshik-ni bo'ya-d-i.  
Farhod fence-ACC red-DAT paint-PST-3 Zamira EMPH door-ACC paint-PST-3  
'Farhod painted the fence red. Zamira, on the other hand, painted the door ( $\neq$  red).'
- (17) AE cannot apply to predicative adjectival complements of verbs
- Hasan men-ga hursand ko'rin-d-i. Zamira Farhod-ga \*(hursand) ko'rin-d-i.  
Hasan 1SG-DAT happy seem-PST-3 Zamira Farhod-DAT happy seem-PST-3  
'Hasan seemed happy to me. Zamira seemed happy to Farhod.'
  - Hasan tez tayyor bo'l-d-i, lekin Zamira asta-sekin \*(tayyor) bo'l-d-i.  
Hasan quickly ready become-PST-3 but Zamira slowly ready become-PST-3  
Hasan became ready quickly, but Zamira became ready slowly.'

By contrast, when other arguments are omitted along with the predicative constituent, the result is completely grammatical.

- (18) VSE elides secondary predicates
- Men Farhod sabzi-ni xomligicha ye-ma-d-i deb o'yla-d-im, lekin siz  
1SG Farhod carrot-ACC raw eat-NEG-PST-3 C think-PST-1SG but 2SG  
ye-d-i deb ayt-d-ingiz.  
eat-PST-3 C say-PST-2  
'I thought that Farhod didn't eat the carrot raw, but you said [he] ate [the carrot raw].'
  - Farhod Zamira-ni xafaligida ko'r-d-i-mi? Ha, ko'r-d-i.  
Farhod Zamira-ACC sad see-PST-3-Q yes see-PST-3  
'Did Farhod see Zamira sad? Yes, [he] saw [her sad].'
  - Farhod to'siq-ni qizil-ga bo'ya-d-i-mi? Ha, bo'ya-d-i.  
Farhod fence-ACC red-DAT paint-PST-3-Q yes paint-3-PST  
'Did Farhod paint the fence red? Yes, [he] painted [the fence red].'
- (19) VSE elides predicative adjectival complements of verbs<sup>16</sup>
- Farhod men-ga hursand ko'rin-d-i. Zamira-ga esa, ko'rin-ma-d-i.  
Farhod 1SG-DAT happy seem-PST-3 Zamira-DAT EMPH seem-NEG-PST-3  
'Farhod seemed happy to me. And to Zamira, [he] didn't seem [happy].'
  - Hasan tez tayyor bo'l-d-i-mi? Ha, bo'l-d-i.  
Hasan quickly ready become-PST-3-Q yes become-PST-3  
'Did Hasan become ready quickly? Yes, [he] became [ready quickly].'

I conclude from this that VSE is operative in the grammar of Uzbek, as well as AE. The set of environments in which these operations apply overlap partially, but not completely.

### 2.3 The Verbal Identity Condition in Uzbek & its consequences

The existence of both AE and VSE operations in Uzbek is supported by the patterns we observe w.r.t. identity conditions on the elements extracted out of the ellipsis site (in VSE, but not in AE).

<sup>16</sup>Some of the examples here have a left-peripheral constituent followed by *esa*, an emphatic contrastive particle. Such constituents are by hypothesis moved to a very high position, which means that they will always survive any ellipsis operation, even one that targets a quite large constituent (VSE).

If **Perspective 2** is correct, and the VIC arises as the result of the interaction between head movement and ellipsis, then...

- In AE, there should be **no** identity conditions imposed on the verb — the ellipsis is only of individual arguments and therefore no parts of the verb are relevant to any ellipsis licensing or identity requirements.
- In VSE, there **may** be an identity condition imposed on the verb. If the head-moved parts are considered (for whatever reason) to be inside the ellipsis site at the time of ellipsis licensing, the identity condition will require those parts to be identical to the corresponding parts in the antecedent.

### 2.3.1 The VIC holds in Uzbek VSE, but not in AE

Identity of verb roots to an antecedent verb root is required in environments that require a VSE analysis — e.g. ellipsis of predicates,<sup>17</sup> but not in environments where AE can apply.

(20) VIC in full force for predicative AP complements:<sup>18</sup>

a. Men tarvuz shirin chiq-a-di deb o'yla-d-im. Lekin u faqat shirin  
1SG watermelon sweet exit-PRS-3 C think-PRS-1SG but 3SG only sweet  
**ko'rin-gan** e-kan.  
seem-PTCP E-EVID  
'I thought the watermelon would be sweet but it only **appeared** sweet.'

b. \*Men tarvuz shirin chiq-a-di deb o'yla-d-im. Lekin (u) (faqat) **ko'rin-gan**  
1SG watermelon sweet exit-PRS-3 C think-PRS-1SG but 3SG only seem-PTCP  
e-kan.  
E-EVID  
*intended*: 'I thought the watermelon would be sweet but it only **appeared** sweet.'

(21) VIC in full force for predicative AP complements:<sup>19</sup>

a. Farhod kasal e-d-i. Bugun esa, u sog'lom ko'rin-yap-ti.  
Farhod sick E-PST-3. today EMPH 3SG healthy look-PROG-3  
'Farhod was sick. Today, though, he looks healthy.'

b. U sog'lom ko'rin-ma-yap-ti, lekin (ovoz-i-dan) \*(sog'lom) **eshitil-yap-ti**.  
3SG healthy look-NEG-PROG-3 but voice-3SG.POSS-ABL healthy sounds-PROG-3  
'He doesn't look healthy, but from his voice, [he] **sounds** healthy.'

<sup>17</sup>Another environment where the VIC is enforced in Uzbek VSE is polar questions — see Griбанова 2020 for discussion.

<sup>18</sup>*Ko'rinmoq* 'to seem' is morphologically a passive, which may give the reader the impression that the unacceptability of (20) could be attributable to a voice mismatch with the active verb *chiqmoq* 'to exit'. To the extent *ko'rinmoq* is a passive, its active counterpart would be *ko'rmoq* 'to see'. However, *ko'rinmoq* does not seem to be a passivized version of the active *ko'rmoq*: the former does not permit the expression of a by-phrase agent, normally possible in true Uzbek passives, and the argument structure of the two verbs is clearly different in a way that does not follow a standard active-passive pattern. Furthermore, the verbs in (21) are also morphologically passive, and the mismatch is still not acceptable.

<sup>19</sup>A few speakers commented that *sog'lom eshitilmoq* has an artificial feel to it, but all speakers agreed that the formulation in (a) is grammatical, while the one in (b) is not.

- (22) VIC is violable in other environments  
(note absence of object depictive interpretation in ellipsis site)

Men Farhod sabzi-ni xomligicha ye-d-i deb o'yla-d-im, lekin siz **g'aji-d-i**  
 I Farhod carrot-ACC raw eat-PST-3 c think-PST-1SG but 2SG chew-PST-3  
 deb ayt-d-ingiz.  
 C say-PST-2

'I thought that Farhod ate the carrot raw, but you said he **chewed** [it].'

Since by hypothesis Uzbek has both an AE and a VSE operation, it follows that ...

- the predicative AP examples *must* involve VSE, since only a VSE analysis will force matching.
- If VSE in Uzbek forces verb matching, then (22) *cannot* be an instance of VSE. It is compatible only with AE.

### 2.3.2 Uzbek verbs can host narrow focus

There exists a convincing line of argumentation that explains the unacceptability of verbal mismatch in Scottish Gaelic (Thoms, 2018) and Irish (Merchant, 2018) VSE as arising from the verb root's inability to host the pitch accent associated with narrow focus in such configurations and languages. The veracity of this fact is elaborated in detail for Irish in Bennett et al. 2019.

This may in fact be the locus of explanation for Scottish Gaelic and Irish, but it cannot serve as an adequate explanation for the VIC requirement in Uzbek.

- Uzbek VSE with mismatched verbs: unelided counterparts are acceptable in identical discourse environments, and in AE.
- The relevance of (22): it involves AE, as indicated by the interpretation of the elided constituent *absent* the object depictive. As an instance of AE, we expect this configuration to permit verbal mismatch, and it does. But prosodically, the string is extremely similar to instances of VSE, in which mismatch is forbidden.
- Narrow focus on verbs, expressed prosodically and lexically, is generally accepted, but not in VSE.

- (23) Focus-sensitive operators *faqat(gina)* and *xolos* associate with verbs

- a. Siz bu marafon-da yug'ur-di-ngiz-mi?  
 2SG this marathon-LOC run-PST-2SG-Q  
 'Did you run in the marathon?'
- b. Yo'q, men faqatgina **jur-d-im** xolos.  
 no 1SG only walk-PST-1SG only  
 'No, I only **walked**.'

As expected, while the use of *xolos* in association with a focused verb is acceptable in general (23,24a), its use in VSE configurations where the VIC is violated does nothing to ameliorate the result (24b).

- (24) a. Farhod bu spektakl' juda qiziqarli bo'l-d-i deb o'yla-d-i. Hasan-ga  
 Farhod this performance very interesting become-PST-3 C think-PST-3 Hasan-DAT  
 bu spektakl' qiziqarli **tuyil-d-i** xolos.  
 this performance interesting appear-PST-3 only  
 'Farhod thought that this performance became very interesting. To Hasan, it only **ap-  
 peared** interesting.
- b. \*Farhod bu spektakl' juda qiziqarli bo'l-d-i deb o'yla-d-i. Hasan-ga  
 Farhod this performance very interesting become-PST-3 C think-PST-3 Hasan-DAT  
**tuyil-d-i** xolos.  
 appear-PST-3 only

Summing up:

- the VIC is a genuine property of VSE constructions beyond one language or language family.
- the VIC is not uniformly attributable to language-specific factors. This calls for a more general explanation of the range of effects we find.

### 3 Types of head movement and potential consequences for VSE

#### EXPLANANDA:

The strength of the VIC varies across languages:

- Group 1: narrow focus on the verb licenses mismatches<sup>a</sup>
- Group 2: strict matching appears to be systematically required, whatever the discourse structure of the expression.<sup>b</sup>

<sup>a</sup>As in Russian (Gribanova, 2017b), Hungarian (Lipták, 2013), European Portuguese (Santos, 2009), and Greek (Merchant, 2018), among others.

<sup>b</sup>As in Irish (McCloskey, 2011, 2012, 2017), Scottish Gaelic (Thoms, 2016, 2018), Uzbek (Gribanova, 2020), Lithuanian (Portelance, 2020).

This is, on the surface, a strange and discomfoting result. It becomes much less discomfoting, however, once we see that this effect is predicted by a particular (independently motivated) approach to head movement.

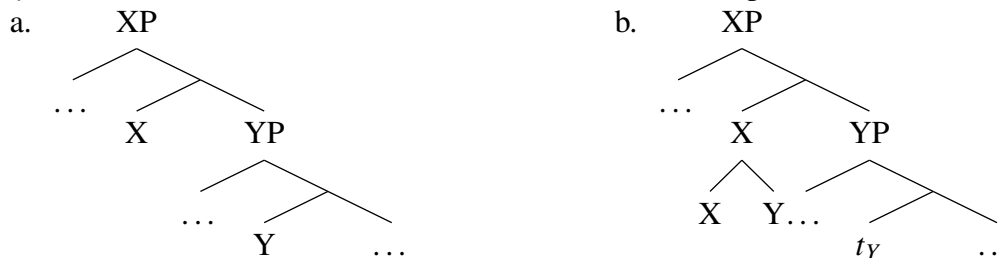
#### PROPOSAL:

- The phenomena we attribute to 'head movement' fall into two groups (Harizanov and Gribanova, 2019):
  1. Postsyntactic amalgamation of heads (= morphologically motivated)
  2. Syntactic movement of heads (= word order permutations)
- The type of head movement involved determines whether mismatch in VSE is possible under contrast or not possible at all:
  - Postsyntactic amalgamation → strict VIC;
  - Genuine syntactic head movement → variable binding → mismatches permitted under certain discourse conditions.

### 3.1 Motivating a bifurcation in head movement types (Harizanov and Gribanova, 2019)

Starting point: head movement as head-to-head adjunction applying in the syntax:

(25) *Syntactic head movement* (where Y is the head of X's complement)



This version of the operation has been used to model phenomena related to both

- (i) word order (verb-initiality, V2, etc.), and
- (ii) word formation (affixation, compounding, etc.).

The result: great strides in descriptive adequacy + a single operation for both (i) & (ii).

However, pursuit of greater explanatory adequacy (esp., within the Minimalist Program) has brought to the fore certain theoretical issues with (25):

- a) the landing site in (25) does not c-command the site of origin (unlike XP-movement)
- b) most cases of (25) do not have discernible semantic effects (unlike XP-movement)
- c) (25) violates the Extension Condition (unlike XP-movement)
- d) (25) cannot skip a head (HMC) (unlike XP-movement)

→ Numerous attempts to reduce at least some instances of (25) to other mechanisms.

Our contention:

- phenomena (i) and (ii) are characterized by diverse properties;
  - we derive (i) and (ii) by distinct (independently needed) mechanisms:
    1. purely syntactic **head movement** (Internal Merge in syntax)
    2. morphological **amalgamation** (Morphological Merger in postsyntax)
- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Syntactic head movement           <ul style="list-style-type: none"> <li>– does not form words</li> <li>– can “skip” heads</li> <li>– can have interpretive effects</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Postsyntactic amalgamation           <ul style="list-style-type: none"> <li>– forms words</li> <li>– obeys the HMC</li> <li>– does not have interpretive effects</li> </ul> </li> </ul> |
|---|--|

#### Syntactic head movement:

The head X is never pronounced lower than its base position (movement is always upward; i.e. there is no lowering that does not result in affixation).

- English subject-aux inversion
- Germanic V2
- Bulgarian participle fronting (Harizanov, 2019)
- Shupamem verb fronting (Szabolcsi, 2011)
- Hebrew bare infinitive fronting (Landau 2006)
- Breton long head movement (Borsley and Kathol 2000)
- Russian Neg-to-Pol (Griбанова, 2017b)

### Postsyntactic amalgamation:

**Type A:** X is pronounced higher than its base position

- French V-to-T
- English Aux-to-T
- Russian V-to-Asp (Griбанова, 2013)

**Type B:** X is pronounced lower than its base position

- Irish C-to-T (Ostrove, 2015)
- English, Danish, Faroese T-to-V
- Russian T-to-Asp (Griбанова, 2013)

Initial evidence seems to suggest that the Uzbek finite verb complex is a good candidate for postsyntactic amalgamation, as judged by the following set of qualities:

- it yields no known discourse or semantic (or scope) effect;
- it results in growth of the morphological complex;
- it obeys the HMC.

### 3.2 Approximate implementation

**Syntactic head movement** = Internal Merge in the syntax (Harizanov, 2019, 2020).

- In *BPS*, the distinction between  $X^0$  and XP is reduced to contextual relations.
- Without additional stipulations, Merge applies equally to  $X^0$  and XP.

**Amalgamation** = postsyntactic *Lowering* (Embick and Noyer, 2001) and postsyntactic *Raising*.

(26) Postsyntactic head *Lowering* (where Y is the head of X's complement):

$$[_{XP} \dots X [_{YP} \dots Y [_{ZP} \dots ] ] ] \rightarrow [_{XP} \dots [_{YP} \dots [_{Y} Y X ] [_{ZP} \dots ] ] ]$$

- *Lowering* accounts for amalgamation of type B: word formation where one of the amalgamated heads is pronounced lower than its base position.
- *Raising*, the upward counterpart of *Lowering*:
  - takes as input the output of syntax;
  - forms a complex head by adjoining a head to the next head up.

(27) Postsyntactic head *Raising* (where Y is the head of X's complement):

$$[_{XP} \dots X [_{YP} \dots Y [_{ZP} \dots ] ] ] \rightarrow [_{XP} \dots [_{X} Y X ] [_{YP} \dots [_{ZP} \dots ] ] ]$$

- *Raising* accounts for amalgamation of type A: word formation where one of the amalgamated heads is pronounced higher than its base position.
- *Raising* and *Lowering* work together to form complex heads (which map to morphophonological words) out of separate syntactic heads.
- Assumptions about the post-syntactic operations *Raising* and *Lowering*:
  1. Heads are considered for amalgamation cyclically, from the bottom up (in line with what we already think to be true of other post-syntactic processes, such as Vocabulary Insertion).
  2. A head can be endowed with the binary morphological feature [M]:<sup>20</sup>
    - [M: +]: apply *Raising*
    - [M: –]: apply *Lowering*
    - absence of the [M] feature: do nothing
    - if the configuration is such that *Raising* or *Lowering* cannot be applied, the derivation crashes.
- Beneficial consequences:
  1. captures the observation that the resulting complex may in principle be pronounced at any point along the extended projection, apparently parametrized by language;<sup>21</sup>
  2. the bottom-up, cyclic derivation ensures that the default result of amalgamation will conform to the Mirror Generalization;<sup>22</sup>
  3. the HMC is embedded in the definition of *Raising* and *Lowering* (following standard assumptions about *Lowering*; e.g. Embick and Noyer 2001).

### 3.3 Connecting head movement to ellipsis: a sketch

Amalgamation (*Lowering* and/or *Raising*) is postsyntactic:

- nothing moves in the narrow syntax → the parts of the verbal complex that originate inside the ellipsis site are still inside the ellipsis site at the time that ellipsis licensing conditions apply →
- matching should always be required.

Genuinely syntactic head movement (behaves analogously to phrasal movement):

- will leave a variable inside the ellipsis site → this variable will not count as distinct from other variables in the antecedent with distinct assignments →

<sup>20</sup>This is essentially a morphological selection feature; though implementations differ, similar ideas can be found in Roberts 2010; Rizzi and Roberts 1989; Svenonius 2016.

<sup>21</sup>The distribution of the values of the [M] feature is a matter of lexical specification and is language-specific. It follows from this that only specifications that lead to convergence would be actually attested.

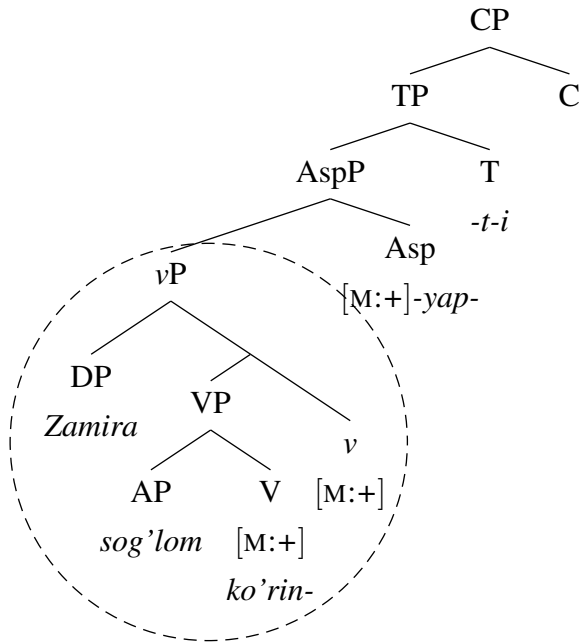
<sup>22</sup>A top-down application traversal of the tree would predict occurrences of anti-scopal affix order — exactly the opposite of the prevailing tendency crosslinguistically.

- the material that is extracted from the ellipsis site need not match its antecedent under the correct discourse conditions.

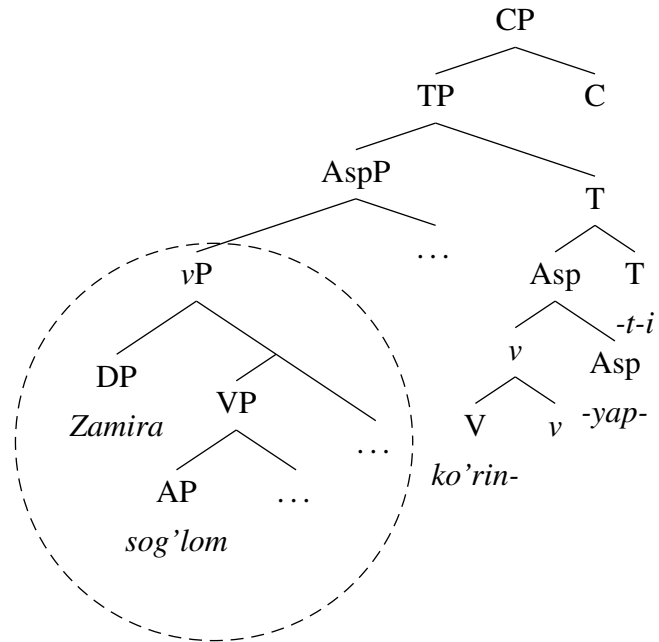
There is independent motivation to analyze Uzbek as involving purely amalgamation, whereas a language like Russian involves both amalgamation and, crucially, movement steps that are genuinely syntactic (Griбанова, 2017b).

### 3.4 Postsyntactic amalgamation in Uzbek

(28) Verbal predication & VSE, syntax:



(29) Verbal predication & VSE, postsyntax:<sup>23</sup>



- The ellipsis identity relation is established by looking at a representation of the elided constituent in its environment, and comparing that to the representation of the antecedent.
- What kind of representation? Syntactic structure, or an LF that is read off of syntactic structure, or truth conditional content.
- In the Y-model, in none of these options will information about the postsyntactic derivation be available at the time that the identity relation is established.
- Therefore mismatches of extracted material in Uzbek VSE are unacceptable for the same reason that things that never leave the ellipsis site (by any means) must be identical to an antecedent.
- In some vaguely functional sense, these elements are scheduled for non-pronunciation and will be unrecoverable unless they're redundant.

## 4 Types of movement, reconstruction, and the identity relation

- The key advantage of leveraging the proposed syntactic/postsyntactic divide in head movement is that it allows us to assert for e.g. Uzbek VSE that the relevant material is still inside the ellipsis domain when the identity relation is checked.

<sup>23</sup>As mentioned earlier, there is no particularly strong evidence bearing on the question of where in the clausal spine the verbal complex is pronounced. I make the simplifying stipulation that it's T.



- Unfortunately, simply being inside the ellipsis site, at least at LF, is not enough to ensure that lexical identity is enforced!
  - The logic of the previous section presupposes that the identity relation recognizes contrastively focused material inside an ellipsis site as non-identical with an antecedent, and is offended by this.
  - But that is not true, in general, of phrasal movement (Merchant, 2018, pp. 245–259), if what you’re comparing are LF representations.
  - Mismatched phrases can be moved out of elided constituents and reconstructed: indefinites scoping under modals, intensional verbs, negation, adverbs of quantification.
- (30) a. An American runner seems to Bill to have won a gold medal, and a Russian athlete does, too. (Fox, 2000, p. 31)
- b.     seems to Bill to have [an American runner<sub>F</sub>] won a gold medal, and     does ~~seem to Bill to have [a Russian athlete<sub>F</sub>] won a gold medal~~, too.
- (31) a. A kore wasn’t often stationed in such a temple; a kouros wasn’t, either. (Merchant, 2018, p. 257)
- b.     wasn’t [often stationed [a kore<sub>F</sub>] in such a temple];     wasn’t [~~often stationed [a kouros<sub>F</sub>] in such a temple~~], either.

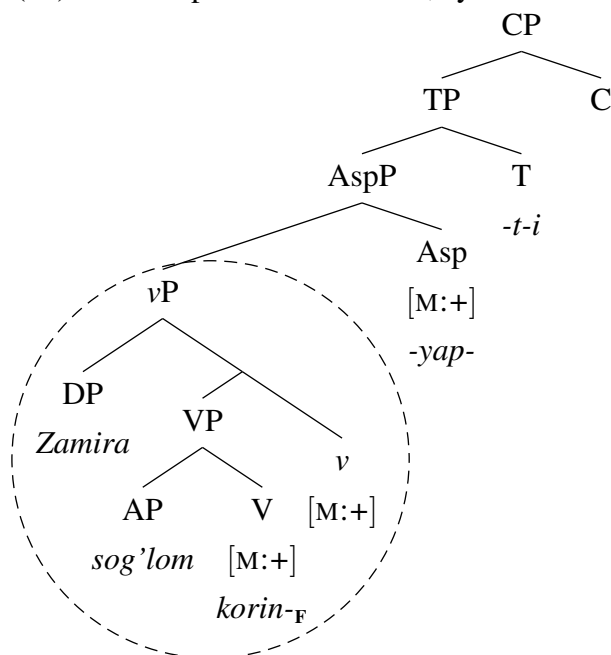
F-marking inside an ellipsis site:

- is problematic for proposals like Heim’s (1997), insofar as Heim’s proposal considers LFs for the purposes of ellipsis identity, and requires identical lexical content in the LF representations of the elided material and its antecedent.
- (re-)motivates Merchant’s (2001) system, in which what’s relevant for ellipsis identity is semantic equivalence modulo F-marking.
- is apparently totally fine, so long as the phonological reflex of F-marking can be realized (e.g. on a copy of the moved element that remains outside the ellipsis site). Recall from §3.3.2: this requirement plays an explanatory role in Merchant’s (2018) discussion of the VIC in Irish, where verbs in VSO configurations cannot bear the pitch accent associated with focus for independent reasons (Bennett et al., 2019).

Taking this reasoning on as part of our common ground, let’s return to the VIC in Uzbek VSE: what goes wrong if the verbs are mismatched?

- (32) VIC in full force for predicative AP complements:
- a. Farhod kasal e-d-i. Bugun esa, u sog’lom ko’rin-yap-ti.  
Farhod sick E-PST-3. today EMPH 3SG healthy look-PROG-3  
‘Farhod was sick. Today, though, he looks healthy.’
- b. U sog’lom ko’rin-ma-yap-ti, lekin (ovoz-i-dan) \*(sog’lom) **eshitil-yap-ti**.  
3SG healthy look-NEG-PROG-3 but voice-3SG.POSS-ABL healthy sounds-PROG-3  
‘He doesn’t look healthy, but from his voice, [he] **sounds** healthy.’

(33) Verbal predication & VSE, syntax:



- The structure in (33), or its LF/semantic representation, is checked for identity of the vP with an antecedent.
- If we're aiming to generate mismatch, the verb root should be F-marked.
- This is fine; we have re-established that ellipsis identity is calculated modulo focus.
- The F-mark will carry with it a phonological demand to be pronounced.
- It gets its wish as soon as the verb undergoes postsyntactic movement.
- so... nothing goes wrong, and mismatch should be licensed, counter to fact.

The logic of Merchant's 2018 discussion leads to the conclusion that postsyntactic movement out of ellipsis sites should also permit mismatches of extracted material, if it's focused. By itself, then, this fails to account for VIC effects in the languages where those are found.

For the approach outlined in §3 to actually work, then, more needs to be said about the relative derivational timing of:

- the checking of the ellipsis identity relation,
- postsyntactic head movement, and
- the checking of the requirement that focused things can be properly phonologically expressed.

The Uzbek facts are therefore consistent with a view in which:

- The representation that is relevant for the identity relation is a syntactic one (perhaps most recently, Rudin 2019)
- F-marked things must have moved out of the ellipsis site *in the syntax*.
- The syntactic representation that contains an F-marked element, be it a phrase or a head, will then feed a semantic and phonological representations in which both the semantic and phonological consequences of focus will play out.
- This checking algorithm shouldn't be able to 'look ahead' to see whether the phonological needs of F-marking are going to be satisfied.
- This reasoning is in more or less direct conflict with the carefully developed analysis of VSE and subject pronoun incorporation in Irish by Bennett et al. (2019), who use a global OT approach to capture effects that seem to demand a freer flow of information between modules than is permitted in the current proposal.

## 5 Conclusion

- There is crosslinguistic variation with respect to whether the VIC is obeyed in the VSE configurations of the world's languages.
- But there is solid evidence that there are languages of both types, and crucially there are languages of the VIC-obeying type.
- For such languages, a quite general explanation is needed: even if language-specific explanations can be articulated for e.g. Irish and Scottish Gaelic, this will not be sufficient to model the VIC effect across different languages.
- A solution that leverages Harizanov and Gribanova's (2019) bifurcation of head movement into a syntactic and a postsyntactic type may work, **iff**
  - it can be married with a derivationally very articulated theory of ellipsis licensing,
  - in which what matters for the licensing of mismatches is whether *syntactic* movement has occurred out of the ellipsis site.

Predictions for other kinds of postsyntactic movement and interaction with ellipsis:

- British English 'full reconstruction' with team DPs as postsyntactic movement (Sauerland and Elbourne, 2002);
- Scandinavian object shift, where it can be convincingly shown to be postsyntactic.

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