

RESEARCH

Predicate formation and verb-stranding ellipsis in
Uzbek

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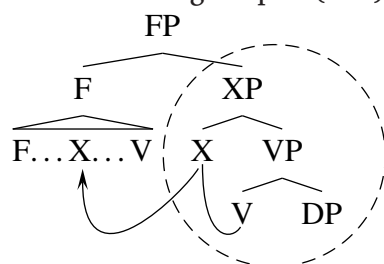
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This paper investigates the interaction between head movement of the verb and ellipsis of vP (verb-stranding ellipsis, vSE) in Uzbek – an understudied Turkic language of Central Asia. I argue that Uzbek verbal predicates are formed by head movement, while non-verbal predicates are formed by a species of Local Dislocation (Embick & Noyer 2001; Embick 2003). Uzbek has two distinct ellipsis strategies that yield similar strings: argument ellipsis (AE) and vSE. vSE occurs only with (head-moved) verbs, and can elide non-verbal predicates, while AE cannot. Uzbek vSE imposes a strict identity requirement on the heads extracted from the ellipsis site (the Verbal Identity Condition (Goldberg 2005b)). Both the genuine existence of this condition, and its source, have recently come under scrutiny; this paper presents Uzbek evidence in support of the claim that the Verbal Identity Condition is genuinely present in a subset of typologically diverse languages with vSE (see Gribanova 2018b). Variable crosslinguistic behavior with respect to the Verbal Identity Condition is predicted by an independently supported view of head movement (Harizanov & Gribanova 2019) in which certain types of head movement are syntactic – yielding the potential for mismatches of extracted material, by analogy with phrasal movement (Merchant 2001) – while others are postsyntactic (yielding the Uzbek-type vSE pattern). The Uzbek investigation therefore provides crucial evidence in favor of a particular view of the crosslinguistic landscape of vSE, and moves us a step closer to explaining why head movement out of ellipsis domains varies systematically in its behavior across languages.

Keywords: ellipsis; argument; predicate; verb-stranding; head movement; Uzbek

1 Introduction

Syntactic configurations involving the interaction of VP-sized (or larger) constituent ellipsis with head movement out of the ellipsis site (1) merit attention for the opportunity they present to investigate critical questions about the workings and architectural status of both head movement and ellipsis.

(1) Verb-Stranding Ellipsis (vSE):¹

¹ Such configurations are variably called *responsive ellipsis* (McCloskey 2011; 2012; 2017), *verb-stranding ellipsis*, or *verb-stranding verb-phrase ellipsis*, among others; I use the term VERB-STRANDING ELLIPSIS (vSE) here.

The landing site of the head movement (the identity of F) may vary according to the language, as may the size of the ellipsis site (the identity of XP) — marked by the circle in (1). The result of such a combination of operations is typically realized as an overt verb whose internal — and sometimes external — arguments, along with any modifying material internal to the elided constituent, are elided.²

- (2) *Russian* VSE (Gribanova 2017:1080)
- 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.'
- (3) *Irish* VSE (McCloskey 2017:100)
- a. A-r sciob an cat an t-eireaball den luch?
Q.PAST cut.PAST the cat the tail off-the mouse
'Did the cat cut the tail off the mouse?'
- b. Sciob. / Ní-or sciob.
cut.PAST / NEG-PAST cut.PAST
'It did. / It didn't.'

As with constituent ellipsis more generally, in a configuration like (1), the elided component will be subject to some kind of requirement — the formulation of which remains controversial — that it be identical to a linguistic antecedent.³ On many prominent accounts, the identity relation that is necessary to license ellipsis applies to the output of a syntactic derivation. One of the well established facts about phrasal movement out of ellipsis sites is that lexical identity of the extracted constituent to its antecedent is not necessary:

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

Such patterns follow from the understanding that WH-extraction leaves behind variables, which do not count as distinct for the purposes of most ellipsis licensing conditions (Rooth 1992; Heim 1997; Merchant 2001).

In the case of head movement out of an ellipsis site, expectations about identity requirements on the extracted elements depend on commitments about the architectural status of head movement. Are the components of the stranded verb that originate inside the ellipsis site (e.g. X and V in (1), but not F) required to be lexically identical to their antecedent counterparts? If head movement is uniformly syntactic and copies of heads are treated identically to copies of phrases — as maintained either implicitly or explicitly by

² Languages for which VSE has been claimed to exist include Russian (Gribanova 2013b; c; 2017), Irish (McCloskey 2011; 2012; 2017), European Portuguese (Santos 2009), Greek (Merchant 2018), Persian (Rasekhi 2018), Brazilian Portuguese (Cyrino & Matos 2002), Japanese (Otani & Whitman 1991), Hebrew (Goldberg 2005a; b), Swahili (Ngonyani 1996), Lithuanian (Portelance 2020), Hungarian (Lipták 2013), Finnish (Holmberg 2016), and Scottish Gaelic (Thoms 2016; 2018), among others. In some cases, the relevant configurations have been given more convincing alternative analyses involving argument ellipsis (AE); see Landau (2018; 2020b) for a recent overview. I have more to say about crosslinguistic differences among languages and constructions in later sections.

³ For recent discussions, see Rooth (1992); Chung et al. (1995); Heim (1997); Merchant (2001); Takahashi & Fox (2005); Chung (2006; 2013); Merchant (2018); *inter alia*.

proposals like that of Travis (1984); Baker (1985); Matushansky (2006); Roberts (2010), among others — we expect mismatches to be possible under contrast crosslinguistically, by analogy with phrasal movement (4). This would take the form of a mismatch of e.g. the root of a stranded verb in VSE, when compared to antecedent verbs. If head movement is uniformly a postsyntactic operation — as maintained by proposals like that of Chomsky (2000); Brody (2000); Hale & Keyser (2002); Harley (2004; 2013); Platzack (2013); Hall (2015); Svenonius (2016), among others — then the prediction is that the identity relation in ellipsis licensing, if applied to the output of syntax, will apply to elements of the head-moved verb *as if it had not moved* — that is, that absolute morphosyntactic identity will be required of the verb root to its antecedent, crosslinguistically (Schoorlemmer & Temmerman 2012).

Finally, there remains the possibility that the range of effects modeled by head movement (qua syntactic head adjunction) — long head movement, roll-up head movement, incorporation, among others — can be factored into two groups and correspondingly accounted for by distinct mechanisms. This is precisely the approach that is argued for by Harizanov & Gribanova (2019) (henceforth H&G), who argue for this distinction on the grounds that it resolves well known theoretical challenges faced by head movement with the advent of the Minimalist Program (see Matushansky 2006; Roberts 2010 for discussion) and makes sense of the diverse empirical properties we observe of the various phenomena that have been traditionally modeled by head movement. On this proposal, one type of head movement is modeled by genuine movement of a head in the syntax, and has syntactic properties: it is governed by the same locality as phrasal movement, potentially violating the head movement constraint (Travis 1984); it may potentially give rise to interpretive effects; it obeys the Extension Condition, resulting in the effect of upward movement; and it does not result in complex morphosyntactic structures, but rather gives rise to word order permutations. An altogether different group has properties that violate standard assumptions about what a syntactic computation can do (Chomsky 2000), and is therefore modeled by a postsyntactic operation (*Amalgamation*) that either *Raises* or *Lowers* (Embick & Noyer 2001) a head into a head adjunction structure. Amalgamation obeys the head movement constraint; it never gives rise to interpretive effects; it builds morphosyntactic complexes, which can correspond to words; and the resulting morphological complex may be pronounced in a variety of positions along the part of the extended projection.

The predictions made by the H&G approach for the identity requirements imposed on elements like V and X in (1) are, for better or worse, more fine grained than they are in accounts that take head movement to be a unified phenomenon. As explored in Gribanova (2018b), if H&G's proposal is on the right track, we expect that the (independently motivated) syntactic status of a given range of head movements in some language should yield the possibility of mismatches between the extracted elements and their antecedents, analogous to what we find with phrasal movement in (4). By contrast, if a given range of head movements is postsyntactic, we expect an absolute matching requirement imposed upon the elements that appear extracted (since in the syntax, those elements remain *in situ*). In broad strokes, H&G's proposal leads us to expect crosslinguistic variation with respect to identity requirements imposed on X and V in (1): the (independently motivated) architectural status of a given instance of head movement will determine whether mismatches are permitted.⁴

⁴ The predictions of these views are correct insofar as syntactic movement treats copies of heads in the same way that it treats copies of phrases. As Saab (2019) has shown, it is possible to fashion a theory of movement in which both phrasal and head movement are syntactic, but their copies are treated differently. Specifically, on such a view, there is syntactic movement of phrases to specifier positions, syntactic movement of heads to specifier positions (a bifurcation most recently argued for on independent grounds

Clear as the predictions made by these various perspectives may be, it has been difficult to establish a steady picture of the empirical landscape of matching requirements in VSE crosslinguistically. The initial studies of VSE in Hebrew (Doron 1990; Goldberg 2005a; b) and Irish (McCloskey 2012; 2017) made the case that verbal mismatches, even under contrast, were not possible in VSE; an Irish example is provided in (5).

- (5) **Irish* (McCloskey 2012)
 Níor cheannaigh mé teach ariamh, ach dhíol.
 NEG-PAST buy I house ever but sold
 ‘I never bought this house, but sold it.’

With the expectation that this observation should hold crosslinguistically, the effect was enshrined as the Verbal Identity Condition (VIC). Proposals were put forth about the uniformly postsyntactic status of the head movement involved (Schoorlemmer & Temmerman 2012), as this would provide a way of explaining the contrasting behavior of VSE with phrasal movement out of ellipsis sites (4). Since these initial investigations, Hebrew has been successfully reanalyzed by Landau (2018) as involving not VSE, but rather ellipsis of individual arguments of the verb (Argument Ellipsis, AE) and the verbal identity effect in Hebrew has also been demonstrated not to hold. Russian (Gribanova 2013c; 2017), European Portuguese (Santos 2009), Greek (Merchant 2018), Persian (Rasekhi 2018), and Hungarian (Lipták 2013), among other languages, have also been shown to permit mismatches of the extracted verb in VSE under contrast; a Russian example is below.

- (6) Violations of the VIC with contrasting verbs in *Russian* (Gribanova 2017):
- 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 (...).’

Depending on one’s perspective, this apparent crosslinguistic diversity in the behavior of head movement out of ellipsis sites — represented here by the contrast between Irish and Russian — may seem either like an indirect indication that head movement is far more complicated than we once thought, or like an inconvenient observation that ought to be explained away.

The latter position is expressed by Landau (2018: 2), who calls the VIC a “theoretical nuisance”: if the VIC is accurate, it follows that head movement (a) must differ in a principled way from phrasal movement, and (b) head movement, is, strikingly, not even different from phrasal movement in a crosslinguistically consistent way within VSE configurations — that is, it becomes impossible to assert that head movement is monolithic in its behavior.

in Harizanov 2020), and finally syntactic movement of heads to head-adjunction structures. The latter will treat the lower copy of a head differently, such that the identity relation in ellipsis licensing pays attention to its content. Such a view will make predictions similar to the view outlined in Harizanov & Gribanova (2019), despite the differences in architectural commitments. See also Arregi & Pietraszko (2020) for a different approach, which will likely have similar consequences. A proper comparison of these proposals would be very worthwhile, but remains outside the scope of the present paper.

It is possible to avoid this conclusion if the behavior of either the Russian-type languages or the Irish-type languages in VSE can be explained in some other way entirely. A way forward along this analytical path presents itself when we consider that the most well established examples in the VIC-obeying language group are Irish and Scottish Gaelic (Thoms 2016; 2018), and these are members of the same language family. Merchant (2018) and Thoms (2018) pursue versions of this path, exploring explanations for the VIC pattern that are specific to Irish (Merchant 2018) or found in both Irish and Scottish Gaelic (Thoms 2018). The idea explored in those works is that in these languages, the VSO configuration that is the prerequisite for VSE is incompatible with the pitch accent that would be needed to put narrow focus on the finite verb. This incompatibility yields a situation in which narrow contrastive focus on verbs in VSE is not permitted, for reasons that are unrelated to the architectural status of head movement.

If the VIC is independently explicable as a characteristic of Goedelic languages, and it cannot convincingly be demonstrated to hold in any other language, then the possibility arises that the VIC effect has nothing whatsoever to do with head movement, and further, that in the general case (Russian, Hungarian, etc.), head movement out of ellipsis sites behaves just like phrasal movement with respect to the identity relation in ellipsis licensing. In order for VSE configurations to provide us with information about the status of head movement, then, we must first answer a pressing typological question about the crosslinguistic behavior of verb matching requirements in VSE configurations: is there a genuine class of languages — in the best case scenario, typologically diverse — that behaves like Irish and Scottish Gaelic? If such languages exist, we would need to show, further, that the VIC-obeying behavior we find in these languages is not due to independently attested constraints on the placement of focal pitch accent on verbs. My claim in this paper is that Uzbek — an understudied Turkic language of Central Asia — has genuine VSE in Uzbek strictly obeys the VIC, and this is not explainable by appealing to language-specific constraints on the placement of focal pitch accent. The broader claim that there exists a class of such languages is also supported by recent work on Lithuanian (Portelance 2020), where the same logic is pursued. If we strengthen the position that such a group of languages genuinely exists, then we also strengthen the case for proposals like that of H&G, in which there is both a syntactic and postsyntactic type of head movement, with correspondingly distinct properties when it comes to the interaction with ellipsis licensing.⁵

In this paper, I use novel data from Uzbek to argue that there is genuine crosslinguistic variation with respect to whether VSE configurations respect an absolute lexical matching requirement on the material head-moved out of an ellipsis domain. The picture of VSE constructions that emerges from close analysis of Uzbek is one in which the inconvenient situation is actually the correct one: head movement out of ellipsis sites in VSE configurations differs crosslinguistically in the identity conditions that are imposed on the material stranded outside the ellipsis site. There is genuinely a group of languages — including (minimally) Irish, Scottish Gaelic, Lithuanian, and now Uzbek — in which head movement out of an elided constituent obeys the VIC, and in doing so behaves differently from phrasal movement when it comes to the identity relation in ellipsis licensing (the conclusion in (a)). With this much in place, we can observe that head movement in the VIC-obeying group of languages must be distinct from both phrasal movement generally and from head movement in languages like Russian, where we find violations of the VIC

⁵ As I discuss at the end of §3, the evidence concerning Uzbek head movement is consistent with it being of the postsyntactic variety — a conclusion which leaves open the door to an explanation for the VIC of the type explored by Gribanova (2018b).

(the conclusion in (b)). This empirical picture finds an explanation in the independently supported idea that a certain class of head movements is postsyntactic in nature, while others are syntactic in nature (Harizanov & Gribanova 2019) — a connection that I leave largely for future exploration.

A combination of factors makes Uzbek a particularly productive language in which to address these questions. One reason it has been difficult to establish both (a) and (b) in the past is that investigation of strings like (2) and (3) across languages introduces empirical quandaries that can be difficult to resolve. The first quandary is that there are other operations that can yield VSE-like surface strings in certain languages. These operations include at least the availability of argument drop and the availability of AE, which elides individual arguments of the verb. Indeed, the literature on VSE-like configurations in East Asian languages seems to have converged on an analysis that favors AE over a genuine VSE analysis (Saito 1985; Kim 1999; Hoji 1998; Oku 1998), and Landau (2018) has recently presented a convincing reanalysis of Hebrew as a language that uses exclusively AE, and not VSE. For every language in which a VSE-like surface string is attested, it remains the job of the analyst to differentiate between a genuine VSE and an AE analysis of that string, if AE is demonstrably available (as it is for Uzbek). A second quandary is that for a VSE analysis to hold in a given language, one should be able to find independent evidence of head movement taking place in that language. As pointed out by Han et al. (2007), among others, this is an especially difficult thing to accomplish in head-final languages like Uzbek, since the result of such a head movement operation would be string vacuous, and there are other independently required operations that could yield a very similar surface result (Harley 2013). As I demonstrate in this paper, understanding the predicate formation strategies of Uzbek yields crucial advances in our ability to tell apart AE constructions from strings that come from genuine VSE.

After introducing some of the relevant details of Uzbek (§2), I demonstrate that Uzbek uses differing strategies for verbal vs. non-verbal predicate formation: the former are composed by head movement, while the latter may be expressed as a word-like string by application of Local Dislocation, a postsyntactic operation distinct from head movement (§3). This bifurcation predicts that verbs may participate in VSE constructions in Uzbek, and I demonstrate that this prediction is borne out in §4, differentiating along the way between environments that bias toward an AE analysis vs. environments in which only VSE can apply. Using these initial pieces of the analysis as leverage, I show in §5 that environments in which only VSE can apply are also the environments in which verbal identity is enforced very strictly: narrow (contrastive) focus on the verb does not facilitate mismatches between the stranded and antecedent verbs in Uzbek VSE, although verbal mismatches are readily attested elsewhere, including in surface-similar strings generated by AE; this strengthens the argument that the VIC is really obeyed in a range of typologically unrelated languages. §6 concludes by drawing the discussion back to the consequences of the Uzbek findings for H&G's proposal and the architectural status of head movement more generally.

2 Uzbek: Preliminaries

Uzbek is an understudied Turkic language spoken in Central Asia, primarily in Uzbekistan (25–30 million speakers, by current estimates). Like other Turkic languages, it is agglutinating (suffixing) in its morphology, SXOV, and consistently head-final. Uzbekistan is a doubly land-locked country, and is bordered on several sides by other Turkic-speaking nations; there is consequently a significant amount of regional syntactic and morphosyntactic

variation, which will become relevant in §3. It is important to note that speakers consulted in this study are not monolingual speakers of Uzbek; this is consistent with the more general trend for the region, which until the early 1990s was under Soviet rule.

The empirical basis for this paper comes from grammaticality judgments collected through fieldwork with native Uzbek speakers in Uzbekistan, Russia, and various locales in the US. A majority of the argumentation presented here draws on two datasets, which are archived online, anonymized, and publicly accessible at the Stanford Digital Repository. The first of these is the basis for the discussion in §3 and Appendix A, and contains judgments from 11 speakers from different regions of Uzbekistan about the possible morphological forms taken by Uzbek verbal and non-verbal predicates.⁶ Parts of this pattern have been documented in Kononov (1960), but the data presented here are both more recent and in some ways more complete. The second dataset⁷ focuses on Uzbek VSE, AE, and the VIC, and forms the basis for the discussion in §4–§5 and Appendix B. It contains judgments from five native Uzbek speakers, though not all speakers may have provided a judgment for every example.⁸ For all the examples discussed in this paper, judgments across speakers were consistent except where otherwise noted. Further discussion about the approach taken here to data collection and archiving, as well as motivations for various choices made along the way, can be found in Gribanova (To appear).

3 Uzbek predicate formation

While the main thrust of this paper centers on the properties of Uzbek VSE, it is also the case that a VSE account of Uzbek strings analogous to (2,3) is predicated on the claim that the verb is being head-moved to some position outside of an ellipsis domain. This section is dedicated to providing a series of arguments in favor of head movement of the verb, in contrast to the absence of head movement in non-verbal predication. This contrast will become crucial in following sections, as it gives us a direct way to probe the difference between genuine instances of VSE in Uzbek and instances of AE, which may appear similar on the surface.

3.1 (Non-)verbal predication: Initial observations

For the purposes of our discussion, I take a “verbal” predicate to be one in which there is a verbal root that bears finite morphology. As with other Turkic languages, the verbal root can be affixed with finite (present or past tense) morphology (7) or non-finite morphology. In the latter case, the affixation of non-finite morphology results in a participial form that has mixed verbal and non-verbal properties (8). I take “non-verbal” predicates to be those that participate in copular constructions; these can be nominal, adjectival, or postpositional (9).

- (7) Verbal predicates
 a. Yoz-a-siz
 write-PRS-2
 ‘You write.’

⁶ <http://purl.stanford.edu/bq499mh5981>.

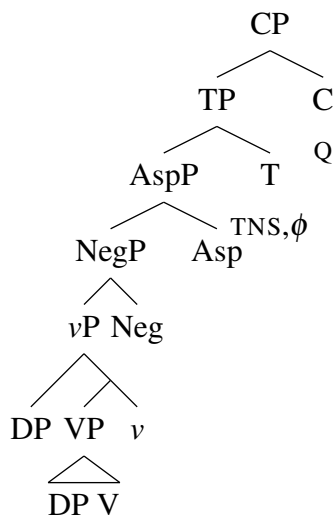
⁷ <https://purl.stanford.edu/zy925pp8644>.

⁸ For this piece of the investigation, I consulted with a total of seven native Uzbek speakers. Unfortunately, two of those native speakers provided judgments that were not internally consistent — in other words, they disagreed with their own judgments when asked about the same examples on different days, sometimes weeks or months apart. The five remaining speakers, whose judgments are the ones included in the archived dataset, were also periodically asked about the same examples on separate occasions, and those five provided internally consistent judgments.

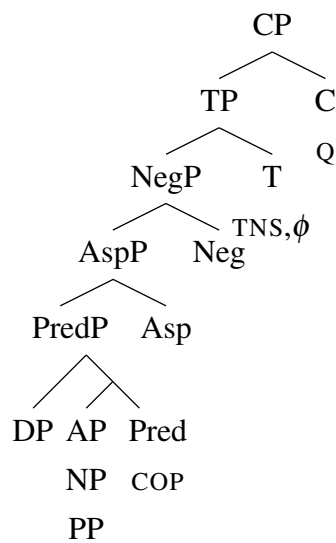
- b. Yoz-d-ingiz
write-PST-2
'You wrote.'
- (8) Participial forms
- a. Yoz-gan-man.
write-PTCP-1SG
'I have written.'
 - b. Yoz-gan-d-im.
write-PTCP-PST-1SG
'I had written.'
- (9) Non-verbal predicates
- a. Qiziq-siz.
interesting-2
'You are interesting.'
 - b. Qiziq e-d-ingiz.
interesting E-PST-2
'You were interesting.'
 - c. Talaba-man.
student-1SG
'I am a student.'
 - d. Talaba e-d-im.
student E-PST-1SG
'I was a student.'
 - e. Farhod bilan-man.
Farhod with-1SG
'I am with Farhod.'
 - f. Farhod bilan e-d-im.
Farhod with E-PST-1SG
'I was with Farhod.'

The structures I assume for each predication type for the purposes of the initial discussion are provided below.

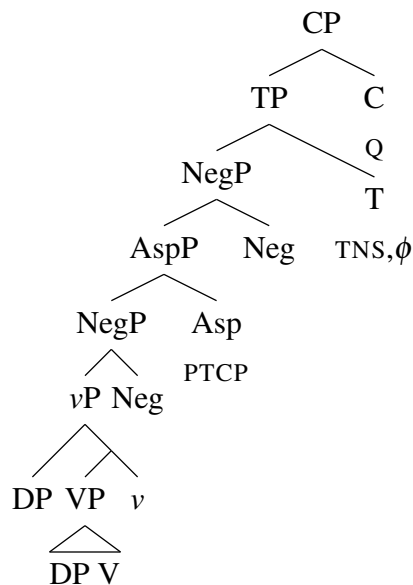
(10) Verbal predication



(11) Copular clauses



(12) Participial forms



I take v to be responsible for verbal predication and for introducing agents in verbal predication; Pred is responsible for introducing copular predication. T realizes both tense and agreement features, although it is possible also to construe agreement as the realization of a dissociated morpheme (Embick & Halle 2005). The position of the subject is underspecified here; I take it that movement to [Spec, TP] may happen under certain conditions but is not obligatory. Evidence for this commitment is difficult to come by in matrix finite clauses, but see Gribanova 2018a for arguments that subjects may raise or stay *in situ* in nonfinite clauses. Finally, the position of negation differs across forms — a claim for which we see evidence in both this section and §3.3. The negation that appears with verbal forms is closest to the root and is therefore syntactically low, whereas there is evidence that the non-verbal negative form is realized higher in the clause. This evidence comes from participial forms, in which either kind of negation may be realized, with corresponding differences in its relative position inside the word.

In their simplex forms, these strings look similar on the surface and appear to be word-like units. Under the assumption, which I adopt here, that the various affixes we find in

these examples are realized syntactically as separate heads, there is some question as to the method of composition that results in their pronunciation as word-like strings. I argue that (7), (8), and (9) result from radically different word formation strategies: (7) involves head movement,⁹ (9) involves a species of merger under adjacency (Bobaljik 1994; Embick & Noyer 2001; Harley 2013), — which for present purposes I model as Local Dislocation (Embick & Noyer 2001; Embick 2003) — and (8) involves a combination of both operations. This is very much in line with the analysis of Turkish (non-)verbal predicate formation in Kornfilt (1996) and Kelepir (2001).

Leaving the participial forms aside until §3.3, we can observe initial differences in the way that Uzbek treats verbal and non-verbal forms. One obvious difference is that verbal and non-verbal predicates use slightly different agreement paradigms in the non-past tense (Straughn 2011). The PRONOMINAL agreement paradigm is used for non-past non-verbal predicates, and exhibits no tense marker or third-person marking. The CONVERBIAL paradigm is used for non-past verbs; here, we find an overt non-past marker *-a/-y-* and overt 3SG/PL marking.

(13) PRONOMINAL agreement paradigm

	SG	PL
1	talaba-man ‘I am a student’	talaba-miz ‘We are students’
2 (fr)	talaba-siz ‘You’re a student’	talaba-siz(-lar) ‘You are students’
2 (infr)	talaba-san ‘You’re a student’	talaba-siz(-lar) ‘You are students’
3	talaba-∅ ‘He/she is a student’	talaba-∅(-lar) ‘They are students’

(14) CONVERBIAL agreement paradigm

	SG	PL
1	qil-a-man ‘I do’	qil-a-miz ‘We do’
2 (fr)	qil-a-siz ‘You do’	qil-a-siz(-lar) ‘You do’
2 (infr)	qil-a-san ‘You do’	qil-a-siz(-lar) ‘You do’
3	qil-a- di ‘(S)he does’	qil-a- di (-lar) ‘They do’

A second difference between the two types of predicates is they take different forms of sentential negation: *-ma-* is the form for verbal predicates, and *-mas-* the form for non-verbal predicates.

(15) Verbal predicates

- a. Yoz-**ma**-y-man.
write-NEG-PRS-1SG
‘I don’t write.’
- b. Yoz-**ma**-d-im.
write-NEG-PST-1SG
‘I didn’t write.’
- c. *Yoz-**ma(s)** e-d-im.
write-NEG E-PST-1SG

⁹ As I discuss in §3.5, and as will become relevant in §6, the type of head movement in this case is likely to be postsyntactic in nature.

- (16) Non-verbal predicates
- a. Talaba-**mas**-man.
student-NEG-1SG
'I'm not a student.'
 - b. *Talaba-**mas**-d-im.
student-NEG-PST-1SG
 - c. Talaba-**mas** e-d-im.
student-NEG E-PST-1SG
'I was not a student.'

It should be immediately apparent that there is something special going on in the non-verbal predicates with respect to the interaction between negation and the realization of the complex as synthetic vs. analytic. This difference is not just an orthographic one, but is prosodically real: the second word in (16c) is pronounced with a salient glottal stop as its initial sound, and this would only be the case at the beginning of a new prosodic word. The following section describes this pattern in further detail.

3.2 *E-support, prosodification, and inversion*

A major difference between verbal and non-verbal forms is that only the latter may ever receive a periphrastic realization. Verbs are always prosodified as a word, with the relevant morphosyntactic feature bundles realized as affixes (17,18).

- (17) Verbal predicates, past
- a. Yoz-ma-d-ingiz.
write-NEG-PST-2
'You didn't write.'
 - b. *Yoz e-ma(s) e-d-ingiz.
write E-NEG E-PST-2
 - c. *Yoz-ma(s) e-d-ingiz.
write-NEG E-PST-2
 - d. *Yoz e-ma(s)-d-ingiz.
write E-NEG-PST-2
- (18) Verbal predicates, non-past
- a. Yoz-ma-y-siz
write-NEG-PRS-2
'You don't write.'
 - b. *Yoz e-ma(s) e-siz.
write E-NEG E-2
 - c. *Yoz-ma(s) e-siz.
write-NEG E-2
 - d. *Yoz e-ma(s)-siz.
write E-NEG-2

Non-verbal predicates have more options available to them in the general case (19,20).

- (19) Non-verbal predicates, past
- a. *Talaba-mas-d-ingiz.
student-NEG-PST-2

- b. Talaba e-mas e-d-ingiz.
student E-NEG E-PST-2
'You weren't a student.'
 - c. Talaba-mas e-d-ingiz.
student-NEG E-PST-2
'You weren't a student.'
 - d. ?Talaba e-mas-d-ingiz.
student E-NEG-PST-2
'You weren't a student.'
- (20) Non-verbal predicates, non-past
- a. Talaba-mas-siz.
student-NEG-2
'You are not a student.'
 - b. *Talaba e-mas e-siz.
student E-NEG E-2
 - c. *Talaba-mas e-siz.
student-NEG E-2
 - d. Talaba e-mas-siz.
student E-NEG-2
'You aren't a student.'

The synthetic realization of verbal forms is an absolute requirement, with no dialectal variation whatsoever. By contrast, whether a non-verbal complex is realized periphrastically, and what periphrastic form it may take, is subject to regional dialectal variation, as documented in the collected data.¹⁰ For example, (19a) seems dispreferred all around, but it was not uniformly unacceptable for every speaker. Tashkent speakers disprefer (19b), whereas other speakers seem to allow it more freely. Finally, there is number and person sensitivity in (19d), with third person preferred to first and second, and singular preferred over plural. The presence of dialectal variation in the case of non-verbal predication, and its absence in the case of verbal predicates, point to different mechanisms underlying the word formation in each case.

In the non-verbal predicates in (19b,c) and (20d), the affixes that are separated from the main verb stem — tense and non-verbal negation — are hosted by a vowel that appears to be serving as a phonological support mechanism, akin to English *do*-support; for this reason, I call this phenomenon E-SUPPORT. It is tempting to think of this vowel as an instantiation of a defective copula, as Kornfilt (1996) does for analogous Turkish examples. Such an explanation would be supported by the diachronic evidence across Turkic (Sjoberg 1963). However, a broader look at the synchronic Uzbek pattern tells a different story: E-SUPPORT is broadly distributed and in certain cases can be found multiple times in one expression, as in (19b), where E-SUPPORT hosts both negation and the tense/agreement suffixes. Two evidential morphemes — (*e-*)*miš* and (*e-*)*kan* — also appear with E-SUPPORT in these paradigms. For this reason, I take E-SUPPORT to be an instantiation of a semantically vacuous phonological support mechanism, not associated directly with copular predication.

A final factor that points to a distinction between verbal and non-verbal predicates is the behavior of the polar question particle, *-mi*.¹¹ In verbal forms, this particle appears

¹⁰ This dataset is archived at <http://purl.stanford.edu/bq499mh5981>.

¹¹ The distribution of the *-mi* affix in Uzbek differs from what is found in Turkish, where *-mi* may appear attached to other constituents in the clause, with a focusing effect (Özyıldız 2015). In Uzbek, *-mi* does not have such a use (Donovan & Nematova 2019), so my treatment here focuses exclusively on its use as a high-scoping sentential operator.

last in the suffix string (21). In (partly) synthetic non-verbal forms, the particle may appear inverted with tense and ϕ -agreement suffixes, either optionally (22) or sometimes obligatorily (23). There is no detectable scope or other semantic difference between inverted and un-inverted forms.¹²

(21) Verbal predicates: obligatorily final position

- a. Yoz-ma-y(-***mi**)-siz-**mi**?
write-NEG-PRS(-*Q)-2-Q
'Aren't you writing?'
- b. Yoz-ma(-***mi**)-d-ingiz-**mi**?
write-NEG(-*Q)-PST-2-Q
'Weren't you writing?'

(22) Non-verbal predicates: inversion is optional¹³

- a. Qiziq-**mi**-siz?
interesting-Q-2
'Are you interesting?'
- b. Qiziq-siz-**mi**?
interesting-2-Q
'Are you interesting?'
- c. Qiziq-mas-**mi**-siz?
interesting-NEG-Q-2
'Aren't you interesting?'
- d. Qiziq-mas-siz-**mi**?
interesting-NEG-2-Q
'Aren't you interesting?'
- e. Qiziq e-mas-**mi**-siz?
interesting E-NEG-Q-2
'Aren't you interesting?'
- f. Qiziq e-mas-siz-**mi**?
interesting E-NEG-2-Q
'Aren't you interesting?'

(23) Non-verbal predicates: inversion obligatory

- a. Qiziq-mas-**mi**-d-ingiz(-***mi**)?
interesting-NEG-Q-PST-2(-*Q)
'Weren't you interesting?'
- b. Talaba-mas-**mi**-d-ik(-***mi**)?
student-NEG-Q-PST-1PL(-*Q)
'Weren't we students?'

¹² For further discussion of the conditioning factors involved in the (non-)obligatoriness of *-mi* inversion, see §3.4.2.

¹³ For non-past non-verbal predication, inversion is systematically optional *except* with first person forms, which generally permit only the final position for *-mi* (though there is a bit of variation).

- (i) Qiziq(-***mi**)-miz-**mi**?
interesting(-*Q)-1PL-Q
'Aren't we interesting?'
- (ii) Qiziq(-***mi**)-man-**mi**?
interesting(-*Q)-1SG-Q
'Aren't I interesting?'

- c. Qiziq e-mas-**mi**-d-ingiz(-***mi**)?
interesting E-NEG-Q-PST-2(-*Q)
'Weren't you interesting?'
- d. Talaba e-mas-**mi**-d-ik(-***mi**)?
student E-NEG-Q-PST-1PL(-*Q)
'Weren't we students?'

Generalizing across the data presented in this section, one can make the observation that verb roots — nouns, adjectives, and postpositions — unify obligatorily with the affixes that they host. There is no separability between the verb root and following suffixes, and neither analytic forms nor inversion with the polar question particle are permitted.

3.3 Participial forms

Participial forms demonstrate mixed behavior with respect to the patterns described in previous sections. Participles are formed using one of a few aspectual suffixes from the *-gan-* family (24).

- (24) a. Kitob-ni yoz-gan-d-ingiz.
book-ACC write-PTCP-PST-2
'You had written the book.'
- b. Kitob-ni o'qi-gan-d-im.
book-ACC read-PTCP-PST-1SG
'I had read the book.'

Suffixes from the *-gan-* series are used to form participles and appear in nominalizations, nonfinite clauses, and relative clauses (Gribanova 2013a; 2018a). I take *-gan-* (in this use) to be a marker of perfect aspect, which also marks the boundary between verbal and non-verbal morphology. Participial predicates have a verbal root at their core and behave like verbs closer to the root (e.g. to the left of *-gan*), but affixes further away from the root (e.g. to the right of *-gan*) pattern like the non-verbal forms.

Starting from the verbal root to *-gan*, the behavior exhibited by participles is verb-like. The verb root, negation, and *-gan* are never separable. The form of negation is *-ma-*, and it always appears adjacent to the verb root, as with full verbs.

- (25) a. Kitob-ni yoz-ma-gan-d-ingiz.
book-ACC write-NEG-PTCP-PST-2
'You hadn't written the book.'
- b. Kitob-ni o'qi-ma-gan-d-im.
book-ACC read-NEG-PTCP-PST-1SG
'I hadn't read the book.'

Once *-gan-* is added to the morphological complex, however, the 'outer' shell of the predicate exhibits all the hallmarks of non-verbal predication. Forms may be realized synthetically or analytically, via E-SUPPORT, conditioned by the same kind of dialectal (dis-)preferences that we find with verbal forms (26); inversion of *-mi* is available but systematically optional (27).

- (26) a. Kitob-ni yoz-ma-gan e-d-ingiz.
book-ACC write-NEG-PTCP E-PST-2
'You hadn't written the book.'

- b. Kitob-ni o'qi-ma-gan e-d-im.
book-ACC read-NEG-PTCP E-PST-1SG
'I hadn't read the book.'
- (27) a. Kitob-ni yoz-ma-gan-d-ingiz-mi?
book-ACC write-NEG-PTCP-PST-2-Q
'Hadn't you written the book?'
- b. Kitob-ni yoz-ma-gan-mi-d-ingiz?
book-ACC write-NEG-PTCP-Q-PST-2
'Hadn't you written the book?'
- c. Kitob-ni o'qi-ma-gan-d-im-mi?
book-ACC read-NEG-PTCP-PST-1SG-Q
'Hadn't I read the book?'
- d. Kitob-ni o'qi-ma-gan-mi-d-im?
book-ACC read-NEG-PTCP-Q-PST-1SG
'Hadn't I read the book?'

As pointed out by Donovan & Nematova (2019), participial forms may make use not only of the verbal negation *-ma-*, as in (25), but they may also make use of the non-verbal negation, *-mas*. When the latter option is used, the negation marker appears not root-adjacent — as would be the case in the verbal pattern — but rather just after *-gan-* (28a,b). These verbal and non-verbal negation markers cannot co-occur, either in the synthetic or analytic forms (28c,d).

- (28) a. Kitob-ni yoz-gan-mas-d-ingiz.
book-ACC write-PTCP-NEG-PST-2
'You hadn't written the book.'
- b. Kitob-ni yoz-gan e-mas-d-ingiz.
book-ACC write-PTCP E-NEG-PST-2
'You hadn't written the book.'
- c. *Kitob-ni yoz-ma-gan-mas-d-ingiz.
book-ACC write-NEG-PTCP-NEG-PST-2
- d. *Kitob-ni yoz-ma-gan e-mas-d-ingiz.
book-ACC write-NEG-PTCP E-NEG-PST-2

I take this to be an indication that verbal negation is hosted lower in the clausal spine than non-verbal negation, as reflected in the structures presented earlier (10–12). These patterns come up again in §3.4.2, where it is suggested that the mixed behavior of the participial forms arises due to the interaction between head movement and Local Dislocation — each of which is independently required to capture the behavior of verbal and non-verbal predicates, respectively.

3.4 Head movement vs. local dislocation

§3 made an initial case for a difference in the mechanisms behind the composition of verbal vs. non-verbal predicates, on the basis of the five differences listed below:

- i. distinct affixation schemas
- ii. distinct forms and positions for sentential negation
- iii. availability of analytic as well as synthetic realization (= use of E-SUPPORT)
- iv. dialectal variation in the morphosyntactic options for non-verbal, but not the verbal paradigms

- v. availability of inversion of tense/ ϕ suffixes with the polar question particle *-mi*.

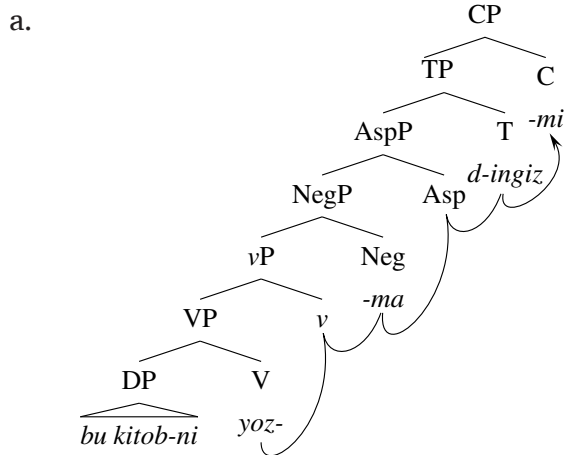
In this section, I make the case that these differences can be successfully modeled by positing a distinction in the word-formation mechanisms that are involved in the composition of verbal vs. non-verbal forms.

3.4.1 Head movement & the composition of verbs

A common theme across several of the observations above is that the morphosyntactic composition of verbal forms has a completely categorical feel to it: it is obligatory, it is uniform across dialects and speakers, and it has a completely fixed affixal template associated with it. Within the literature that shares the assumption that individual morphemes are expressions of individual syntactic heads, the structural operation that unifies these individual heads into a word-like unit, and is most consistent with the properties just elaborated, is head movement. The assumption that head movement is generally obligatory is supported by studies on the bimodal distribution of verb movement in Korean (Han et al. 2007; 2016). These studies demonstrate that, due to the scarcity of evidence for or against head movement in the input of this head-final language, the Korean-speaking population is split into two groups, one in which verb movement applies, and one in which it fails to. Korean speakers choose one grammar and remain internally consistent to it, rather than applying head movement arbitrarily or optionally (Han et al. 2016). Even in an empirical landscape wherein it is at least logically possible for optional head movement to arise within the grammar of an individual speaker, such a situation does not arise; rather, speakers either systematically apply or systematically do not apply head movement. Returning to Uzbek, the obligatoriness of the head movement operation may also be leveraged to explain the lack of variation across speakers in which verbal form they prefer: there is only one option, and it is the one in which the parts of the verbal complex have undergone head movement.

It is possible to understand the absence of *-mi* inversion in verbal environments with the addition of a few assumptions about Uzbek clause structure. I take the clausal spine in verbal predication to resemble something like (29), with head movement unifying all of the heads in the clausal spine, from V through to C.¹⁴

(29) Uzbek finite verb formation



¹⁴ The question of which heads unify via head movement (in one of its many implementations), and the question of the site of pronunciation of the complex along the clausal spine, are in principle separate. I leave the latter question for further research; there are many well-documented cases in which the result of head movement is not pronounced in the highest possible position; see Brody (2000); Abels (2003); Harley (2013); Harizanov & Gribanova (2019) for discussion. Although it is not crucial to what comes later in the paper, for the purposes of concreteness I assume here that — following Brody (2000), H&G, Svenonius (2016), among others — the position where the head-moved complex is linearized along the extended projection is consistent, and that this is encoded via the lexical specifications of functional heads.

- b. Bu kitob-ni yoz-ma-d-ingiz-mi?
 this book-ACC write-NEG-PST-2-Q
 ‘Didn’t you write this book?’

The result of head movement is a complex of the kind in (30), with *-mi* on the very outside.

(30) [[[[[V v] Neg] Asp] T] C]

What prevents the exponent of C from inverting with the exponent of T in such a configuration? As the next section makes clear, the polar question particle is an enclitic and must have a prosodic host. It can obtain such a host in a variety of ways, one of which is to be part of a complex of heads joined by head movement. Once this has been accomplished, as in (29) and (30), no other operation is required to take place in order to satisfy affix-specific requirements.

3.4.2 Local dislocation & the composition of non-verbal forms

We have already seen that the behavior of non-verbal predicates is different from that of verbal predicates along several dimensions. First, non-verbal predicates may be realized either analytically — with the help of E-SUPPORT — or synthetically. Second, non-verbal predicates permit inversion of the polar question particle with tense and agreement suffixes; crucially, this inversion is in complementary distribution with E-SUPPORT, so that *-e-* and *-mi* are never adjacent.

(31) Inversion and E-SUPPORT in non-verbal past tense predicates

- a. Qiziq e-mas-mi-d-ingiz?
 interesting E-NEG-Q-PST-2
 ‘Weren’t you interesting?’
- b. Qiziq e-mas(*-e)-mi(*-e)-d-ingiz?
 interesting E-NEG(*-E)-Q(*-E)-PST-2
 ‘Weren’t you interesting?’
- c. Qiziq e-mas e-d-ingiz-mi?
 interesting E-NEG E-PST-2-Q
 ‘Weren’t you interesting?’
- d. *Qiziq e-mas e-mi-d-ingiz?
 interesting E-NEG E-Q-PST-2
- e. *Qiziq e-mas mi-e-d-ingiz?
 interesting E-NEG Q-E-PST-2

(32) Inversion and E-SUPPORT in participial predicates

- a. Yoz-ma-gan-mi-d-ingiz?
 write-NEG-PTCP-Q-PST-2
 ‘Haven’t you written?’
- b. Yoz-ma-gan(*-e)-mi(*-e)-d-ingiz?
 write-NEG-PTCP(*-E)-Q(*-E)-PST-2
 ‘Haven’t you written?’
- c. Yoz-ma-gan e-d-ingiz-mi?
 write-NEG-PTCP E-PST-2-Q
 ‘Haven’t you written?’
- d. *Yoz-ma-gan e-mi-d-ingiz?
 write-NEG-PTCP E-Q-PST-2

- e. *Yoz-ma-gan mi-e-d-ingiz?
write-NEG-PTCP Q-E-PST-2

The formation of non-verbal predicates involves dialectal variation with respect to preferences for analytic vs. synthetic realization in a way that the verbal predicates never permit. These preferences seem to be partly grounded in the person and number features of the agreement suffixes.

A final wrinkle to these patterns is that the application of inversion or E-SUPPORT in non-verbal predicates is in the general case optional (22) — subject to some dialect-specific preferences — except in the environment of finite past tense. Considering the distribution of inversion and E-SUPPORT in the presence of the finite past tense morpheme leads to an observation about the surface distribution of the past tense suffix: it avoids linearization adjacent to morphological material associated with the non-verbal paradigm. This includes non-verbal negation (*-mas*) and non-verbal (adjectival, nominal) roots.¹⁵ This preference for attachment to exclusively verbal material to its left can be realized in one of two ways: first, if the form is synthetic, the result is ungrammatical unless *-mi*-inversion can apply (34,35). Alternatively, the problem will not arise if the form is analytic, because E-SUPPORT intervenes between any non-verbal material and the past tense suffix (33).¹⁶

(33) E-SUPPORT is required if the morpheme left of *-d-* is non-verbal

- a. Talaba e-d-im.
student E-PST-1SG
'I was a student.'
- b. *Talaba-d-im.
student-PST-1SG
- c. Talaba-mas e-d-im.
student-NEG E-PST-1SG
'I was not a student.'
- d. ?/*Talaba-mas-d-im.
student-NEG-PST-1SG

(34) Inversion is required if *-d-* is part of a synthetic form and *-mas* is to its left

- a. Qiziq-mas-mi-d-ingiz(-*mi)?
interesting-NEG-Q-PST-2(-*Q)
'Weren't you interesting?'
- b. Talaba-mas-mi-d-ik(-*mi)?
student-NEG-Q-PST-1PL(-*Q)
'Weren't we students?'
- c. Qiziq e-mas-mi-d-ingiz(-*mi)?
interesting E-NEG-Q-PST-2(-*Q)
'Weren't you interesting?'

¹⁵ In forms with perfect aspect and finite past tense, *-mi*-inversion is systematically optional: *-d* may linearize immediately next to *-gan-* (27a). I take this to mean that *-gan-* is neutral with respect to the verbal/non-verbal distinction, as least as far as these preferences are relevant for the past tense affix.

¹⁶ The very fact that there appears to be more than one "repair" that avoids an undesirable morphological outcome is a possible indication that optimization is at work. Under a theory like that of Haugen (2008), all operations along the postsyntactic branch of the grammar involve optimization after the point of Vocabulary Insertion; this would certainly include Local Dislocation and E-SUPPORT, and is generally compatible with the idea that the operation at play in the derivation of non-verbal forms in Uzbek takes place late in the postsyntax.

- d. Talaba e-mas-**mi**-d-ik(-***mi**)?
student E-NEG-Q-PST-1PL(-*Q)
'Weren't we students?'
- e. Yoz-gan-mas-**mi**-d-ingiz(-***mi**)?
write-PTCP-NEG-Q-PST-2(-*Q)
'Haven't you written?'
- f. Yoz-gan e-mas-**mi**-d-ingiz(-***mi**)?
write-PTCP E-NEG-Q-PST-2(-*Q)
'Haven't you written?'
- (35) Inversion is required if *-d-* is part of a synthetic form and a non-verbal root is to its left
- a. Talaba-mi-d-ingiz?
student-Q-PST-2
'Were you a student?'
- b. *Talaba-d-ingiz-mi?
student-PST-2-Q
- c. Qiziq-mi-d-ingiz?
interesting-Q-PST-2
'Were you interesting?'
- d. *Qiziq-d-ingiz-mi?
interesting-PST-2-Q

All of these properties lead me to argue that the operation responsible for the (non-)unification of non-verbal predicates is not head movement, but rather a late postsyntactic operation that joins adjacent individual morphemes together as affixes; we may call this operation merger under adjacency (Bobaljik 1994; Harley 2013) or Local Dislocation (Embick & Noyer 2001; Embick 2003). The star below signals immediate precedence.

- (36) Local Dislocation (as formulated in Kramer 2009):
 $X * Y \rightarrow X-Y \text{ or } Y-X$

The synthetic-analytic alternation that we find in non-verbal predication is therefore a matter of either applying this operation, or not applying it and supplying the stranded affixes with phonological support. If the operation is applied, it may be applied vacuously to join individual morphemes together string vacuously, or it may be applied via inversion, yielding a string with *-mi* in the non-final position. The observed dialectal variation is attributable to whether this operation is applied more or less regularly in a particular dialect. And the behavior in (33)–(35) is an indication that this operation is sensitive to the needs of a specific suffix — a property that I take to be indicative of late postsyntax and that can be captured by stipulating the identity of X and Y, so that any inversion applies only to tense/agreement and the polar question particle.

A consequence of adopting a Local Dislocation account of the non-verbal and participial forms is that although the relevant affixes are unified with the non-verbal root or participial root, there is no change in the clausal positions associated with each morpheme. This distinguishes the non-verbal forms from the verbal ones, where there is a genuine change not only in the morphological results of the operation, but also in the locus of pronunciation along the clausal spine — a characteristic of head movement but not Local Dislocation. A further consequence is that this set of analytical commitments leads to the hypothesis that the mixed behaviors of Uzbek participial verbs are attributable to a mixed

analysis, in which head movement unifies the inner components of the participial verb (root, negation, and aspect), while Local Dislocation and E-SUPPORT are responsible for its outer layers (tense, agreement). For a specific accounting of the morphological unification of non-verbal and participial forms, I refer the reader to Appendix A.

3.5 Summary

The discussion in this section leads us to a scenario in which different predication types call upon different combinations of syntactic and postsyntactic operations in order for predicates to form word-like units. Finite verbs are the result of head movement; non-verbal predicates are unified by a species of Local Dislocation; and participial forms involve the application of both mechanisms — head movement up to the Asp projection and Local Dislocation for material above Asp (non-verbal negation, T, and C).

A salient question for the discussion going forward is whether, within theoretical approaches like that of H&G, the kind of head movement involved in the formation of Uzbek verbal and participial predicates is syntactic or postsyntactic. As I demonstrate in §5, when we control for the possibility of argument ellipsis (AE), what emerges in Uzbek is a verb-stranding ellipsis (VSE) strategy in which, like in Irish and Scottish Gaelic (but unlike e.g. Russian), the Verbal Identity Condition (VIC) is obeyed even under conditions — like strong contrastive focus on the verb root — which might in other languages permit a violation of the VIC. If this effect is to be derived from an approach like H&G's, the head movement in Uzbek should be demonstrably postsyntactic — because only postsyntactic head movement would leave all of the individual terminal nodes *in situ* as far as the syntactic module is concerned, leading in turn to these individual terminal nodes being relevant to the calculation of identity in ellipsis licensing.

According to H&G's proposal, postsyntactic head movement typically obeys the head movement constraint, never gives rise to interpretive or LF effects, builds morphosyntactic complexes (pronounced as prosodic words), and the resulting complex can be pronounced in a variety of positions along the clausal spine. Although more investigation is required, to the extent it is possible to tell, all of these properties hold for the head movement proposed here, either for Uzbek participial forms (up to Asp) or for Uzbek finite verbs, which unify heads up to C. Thus, it is consistent with the evidence that has so far been presented to claim that the relevant head movement is of the postsyntactic variety. This claim, in turn, gives us a potential starting point for understanding why Uzbek might be the kind of language in which the VIC is obeyed in VSE configurations. We return to these questions after the evidence in §4 and §5 has been presented.

4 Ellipsis & the height of head movement

The analytical commitments I outlined in §3 give rise to the possibility that, given the existence of an ellipsis operation that elides a VP (or larger) constituent, verbs may be stranded outside of that ellipsis site as a result of having head-moved to a higher position. The result of such an interaction of operations would be a configuration in which the verb is pronounced, but any VP-internal arguments or adjuncts are elided under identity with an antecedent.

On the surface, such configurations are certainly attested — see (37b) and (38) — but it is another task entirely to demonstrate that they are best analyzed as VSE, rather than individual argument drop or argument ellipsis. Before proceeding, note that for Uzbek verb-stranding ellipsis, the most natural translation into English would probably involve verb phrase ellipsis. In the discussion that follows, however, the question at issue will often be the reconstructed meaning of the omitted components. For this reason, here and throughout the paper I will opt for an unelided translation in the third line of each example, putting in

square brackets the pieces that are omitted in Uzbek, but whose meaning is nevertheless interpreted.

- (37) 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].'
- (38) Men Farhod sabzi-ni xomligicha ye-ma-d-i deb o'yla-d-im, lekin
1SG Farhod carrot-ACC raw eat-NEG-PST-3 C think-PST-1SG but
siz ye-d-i deb ayt-d-ingiz.
2SG eat-PST-3 C say-PST-2
'I thought that Farhod didn't eat the carrot raw, but you said that [he] ate [the carrot raw].'

This section is dedicated to arguing that such strings may be the result of more than one available mechanism for the omission or non-pronunciation of syntactic material. These mechanisms include argument drop, argument ellipsis, and verb-stranding ellipsis. Below, specific syntactic environments are identified in which only one of these operations may apply, but not the others. Since the primary goal of this paper is to probe the interaction of head movement and ellipsis in VSE, the latter subsections begin this discussion by examining more closely the question of how large the ellipsis site is in VSE. This examination requires me to return to the syntax of non-verbal predication, as the lack of omission strategies in copular clauses plays a helpful role in the identification of the head that licenses ellipsis in Uzbek VSE.

4.1 Argument drop vs. argument ellipsis

For strings like (37b) and (38), an obvious analysis — especially given the status of Uzbek as a subject pro-drop language — involves pro-drop of individual arguments of the verb. However, like Japanese (Sato & Hayashi 2018), Uzbek has a restriction on subject drop of indefinite subjects (Holmberg 2016). Ignoring for the moment the question of how internal arguments are omitted in (39), the relevant observation is that a subject that has no overt counterpart in the antecedent can only be interpreted as a pronoun, never as an indefinite.

- (39) Genuine subject drop not possible with indefinite pronouns:
- a. Bu mashina-ni bir qo'l-i bilan boshqara ol-a-di.
this machine-ACC one hand-3SG.POSS with manage take-PRS-3SG
'[(S)he (#someone)] can operate this machine with one hand.'
- b. Bu yerda kecha sigaret chek-d-i-mi? Ha, chek-d-i.
this here yesterday cigarette smoke-PST-3-Q yes smoke-PST-3
'Did [(s)he (#someone)] smoke a cigarette here yesterday?'
'Yes, [(s)he (#someone)] smoked [a cigarette here yesterday].'
- c. Doska-da yoz-ayot-gan-d-i-mi? Ha, yoz-ayot-gan-d-i.
board-LOC write-PROG-PTCP-PST-3-Q yes write-PROG-PTCP-PST-3
'Had [(s)he (#someone)] been writing on the blackboard?'
'Yes, [(s)he (#someone)] had been writing [on the blackboard].'

By comparison, an indefinite subject is recoverable when it goes unpronounced, as long as there is an overt indefinite subject in the antecedent (40).

- (40) ‘Someone’ reading possible in verbal answers to questions:
- a. Kim-dir bu mashina-ni bir qo’l-i bilan boshqara
 some-one this machine-ACC one hand-3SG.POSS with manage
 ol-a-di-mi? Ha, boshqara ol-a-di.
 take-PRS-3SG-Q yes manage take-PRS-3SG
 ‘Can someone operate this machine with one hand?’
 ‘Yes, [someone] can operate [this machine with one hand].’
 - b. Kim-dir bu yerda kecha sigaret chek-d-i-mi? Ha, chek-d-i.
 some-one this here yesterday cigarette smoke-PST-3-Q yes smoke-PST-3
 ‘Did someone smoke a cigarette here yesterday?’
 ‘Yes, [someone] smoked [a cigarette here yesterday].’
 - c. Kim-dir doska-da yoz-ayot-gan-d-i-mi? Ha, yoz-ayot-gan-d-i.
 some-one board-LOC write-PROG-PTCP-PST-3-Q yes write-PROG-PTCP-PST-3
 ‘Had someone been writing on the blackboard?’
 ‘Yes, [someone] had been writing [on the blackboard].’

Again limiting our attention to the status of omitted subjects, the contrast between (39) and (40) requires that some kind of ellipsis of the subject be involved in (40), since the indefinite subjects can be omitted — provided that there is a linguistic antecedent — but not dropped and recovered from context.¹⁷ This is a strong indication some form of constituent ellipsis is active in the language generally, over and above the possibility of subject pro-drop.

Further evidence that constituent ellipsis is operative in Uzbek comes from the observation that it is possible to omit an object (both referential and indefinite) while other arguments remain realized; I take this to be a form of argument ellipsis.¹⁸

- (41) a. Farhod Zamira-ga savol ber-d-i-mi? Yo’q, Farida-ga ber-d-i.
 Farhod Zamira-DAT question give-PST-3-Q no Farida-DAT give-PST-3
 ‘Did Farhod ask a question of Zamira? No, [he] asked [a question] of Farida.’
- b. Farhod ko’ylak-ni kirligicha sumka-ga sol-d-i. Zamira esa, tozaligicha
 Farhod clothes-ACC dirty bag-LOC put-PST-3 Zamira EMPH clean
 sumka-ga sol-d-i.
 bag-LOC put-PST-3
 ‘Farhod put clothes into the bag dirty. Zamira, on the other hand, put [clothes] into the bag clean.’
- c. Farhod kim-ni-dir hursandligida ko’r-d-i. Hasan esa, xafaligida
 Farhod who-ACC-one happy see-PST-3 Hasan EMPH happy
 ko’r-d-i.
 see-PST-3
 ‘Farhod saw someone (being) happy. Hasan, on the other hand, saw [someone] (being) sad.’

In what follows, I take this as evidence in favor of the claim that argument ellipsis is in principle available in Uzbek.¹⁹ The following section focuses on differentiating between AE configurations and genuine VSE configurations.

¹⁷ The requirement that there be a linguistic antecedent in order for constituent ellipsis to apply is well known (Hankamer & Sag 1976), though see Schachter 1977, Pullum 2000, and Merchant 2004 for counter-evidence and other considerations.

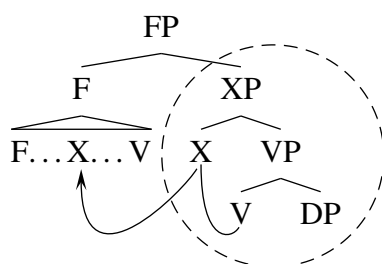
¹⁸ These and other examples use a particle, *esa*, which marks contrastively topicalized constituents at the left edge of the clause.

¹⁹ I have assumed here that missing indefinite objects must be the result of argument ellipsis, rather than pro-drop — that is, that pro-drop of objects obeys the same restriction on indefinites that pro-drop of subjects

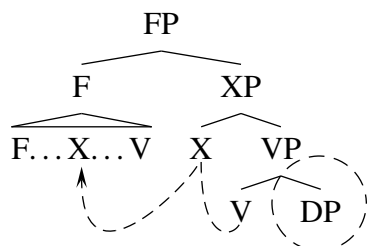
4.2 Argument ellipsis vs. genuine verb-stranding ellipsis

Argument ellipsis rose to prominence as an alternative analysis of strings analogous to Uzbek (37b) and (38) in the literature on East Asian languages, primarily Japanese and Korean (Oku 1998; Kim 1999; Saito 2007; Takahashi 2008a; b). This analysis had the advantage of explaining certain ellipsis-like properties of the missing material — including, for example, the availability of strict and sloppy readings that lack an explanation on a pro-drop account — without requiring recourse to a VSE analysis. One need only a brief look at the literature on such constructions in East Asian (Otani & Whitman 1991; Fukunoshi 2016; Abe 2018) or, more recently, the literature on Hebrew ellipsis constructions (Goldberg 2005b; Landau 2018) to understand that the two analyses — sketched in (42,43) — can be difficult to tell apart.

- (42) Verb-stranding ellipsis
(with head movement)



- (43) Argument ellipsis
(with or without head movement)



As Sakamoto (2016) points out, much of the literature on AE focuses primarily on demonstrating the viability of AE as an analysis of these strings, rather than on providing a formal characterization of the environments where it can apply (with Abe 2009 and Sakamoto 2016 as notable exceptions). Making progress on the question of whether VSE and AE operations can be isolated in Uzbek requires that we identify environments in which AE cannot apply; if, in such environments, strings like (37b) and (38) remain grammatical, then the operation that yields them must be something other than AE; namely, it must be VSE.

In this section, I focus on delineating a set of syntactic configurations to which AE may not apply, at least not in Uzbek — *specifically, AE can elide arguments but not predicates.*

- (44) Uzbek predicates are immune to AE.

does. This is largely because Uzbek objects cannot generally go missing in the absence of a linguistic antecedent, unlike subjects. The main arguments undertaken throughout this paper will not be greatly affected if the relevant operation for non-pronunciation of individual arguments is in the end pro-drop, rather than argument ellipsis.

What this means for Uzbek is that constituents in predicative positions should not be able to undergo ellipsis *on their own*. The latter qualification is important, since I maintain that while predicative constituents cannot be targeted individually for AE, they may be elided if they are contained inside a constituent that undergoes ellipsis, as in VSE. In the latter case, all other VP-internal material will also be elided. In other words, if both AE and VSE are operative in Uzbek, we expect that predicative constituents may go missing only if other VP-internal material goes missing, but — as they are not arguments — they may not be targeted for ellipsis on their own.

Indeed, Uzbek predicative constituents cannot be the sole target of an ellipsis operation. This is the case in a wide range of constructions, including the predicate position of a copular clause (45), secondary predicates (46), and AP complements of certain verbs (47).

- (45) AE cannot apply to predicates of copular clauses²⁰
- 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.'
- (46) AE cannot apply to object depictives or resultatives (as evidenced by interpretation)
- a. Farhod Zamira-ni xafalaligida ko'r-d-i va Hasan Nigora-ni
Farhod Zamira-ACC sad see-PST-3 and Hasan Nigora-ACC
ko'r-d-i.
see-PST-3
'Farhod saw Zamira sad and Hasan saw Nigora (≠ sad).'
 - b. 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 (≠ red).'
- (47) AE cannot apply to predicative adjectival complements of verbs
- a. Hasan men-ga hursand ko'rin-d-i. Zamira Farhod-ga *(hursand)
Hasan 1SG-DAT happy seem-PST-3 Zamira Farhod-DAT happy
ko'rin-d-i.
seem-PST-3
'Hasan seemed happy to me. Zamira seemed happy to Farhod.'
 - b. Hasan tez tayyor bo'l-d-i, lekin Zamira asta-sekin *(tayyor)
Hasan quickly ready become-PST-3 but Zamira slowly ready
bo'l-d-i.
become-PST-3
Hasan became ready quickly, but Zamira became ready slowly.'

²⁰ Although non-verbal predicates are not formed by head movement (as argued in §3), one might expect that just the tense and agreement suffixes could be stranded (with the help of E-SUPPORT) in conjunction with ellipsis of a larger constituent. However, copular clauses do not permit any larger ellipsis either — if they did, omitted non-verbal predicates in examples like (45) would be grammatical. For a discussion of why this is not permitted, see §4.3.1.

In all of these environments, there is either an AP or NP predicate that cannot be elided if other VP-internal material is left pronounced. I conclude from these patterns that AE is genuinely restricted to eliding arguments, but not predicates.

If this is correct, when predicates go unpronounced, the mechanism responsible for this cannot be AE. It so happens that when other arguments of the verb are omitted along with the predicative constituent, the result is perfectly grammatical.

(48) VSE elides secondary predicates²¹

- a. Men Farhod sabzi-ni xomligicha ye-ma-d-i deb o'yla-d-im,
 1SG Farhod carrot-ACC raw eat-NEG-PST-3 C think-PST-1SG
 lekin siz ye-d-i deb ayt-d-ingiz.
 but 2SG 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].'
- b. 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].'
- c. 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].'

(49) VSE elides predicative adjectival complements of verbs

- a. 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].'
- b. 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].'

What this tells us is that the successful ellipsis of predicative constituents is dependent on other arguments of the verb also being elided simultaneously. Predicative constituents may not be individually targeted for ellipsis by AE, but they may be elided as part of an ellipsis operation that targets a far larger constituent; this operation is VSE.

4.3 The size of the ellipsis domain in verb-stranding ellipsis

We are now in a position to further probe the syntax of VSE: how big is this ellipsis site, and is it possible to tell where in the extended projection the head-moved verb is linearized? The situation is made more challenging by the fact that Uzbek is a subject drop language, so that in the general case a subject will not be pronounced — a fact that is consistent both with pro-drop or with a larger ellipsis site.²² Here I provide some indirect evidence that bears on both of these questions. This investigation leads, in turn, to a more fine-grained set of commitments about the structure of the Uzbek extended projection in both verbal and copular environments.

4.3.1 Absent omission strategies in copular clauses

A first indication that the ellipsis site in VSE may be on the smaller side comes from the comparison of copular and verbal predication, which treat the ellipsis of AP predicates differently. This should be evident from the minimal pair below.

²¹ See Appendix B for a discussion of how negation interacts with adverbs and secondary predicates in VSE.

²² Although the pro-drop analysis will be excluded if the subject is an indefinite.

- (50) Biror kishi hursand bo'l-d-i-mi? Ha, bo'l-d-i.
 any person happy become-PST-3-Q yes become-PST-3
 'Did anyone become happy? Yes, [someone] became [happy].'
- (51) Biror kishi hursand e-d-i-mi?
 any person happy E-PST-3-Q
 'Was anyone happy?'
- a. Ha, *(hursand) e-d-i.
 yes happy E-PST-3
 'Yes, [someone] was happy.'
- b. *Ha, -d-i.
 yes PST-3

According to the proposal under discussion, (50) is a straightforward instance of VSE in which a constituent containing (at least) an AP predicate is elided; the verb is raised outside of the ellipsis site and stranded. By contrast, in (51), the AP predicate cannot be elided via AE, also consistent with the previously discussed ban on elision of predicates by AE. But if a larger ellipsis operation like VSE is in general available in Uzbek, why can't it apply here in the absence of verb-raising, stranding just the tense/agreement morphology?²³

I suggest that copular configurations do not permit a larger ellipsis operation because they do not contain the licensing (E-feature-bearing, in Merchant 2001 terms) head needed for such an operation.²⁴ This does some work for the analysis insofar as it allows us to state in formal terms the observation that VSE is really a property of clauses in which there is a finite verb.²⁵ Such an approach requires some explicit commitments about the identity of the head that licenses ellipsis in cases of verbal, but not copular, predication. For reasons of exposition, I assume that one difference between the clausal spine of a verbal vs. non-verbal clause is that the former contains a verbalizing head (*v*), whereas the latter contains a Pred head.²⁶ There are at least two logical possibilities when it comes to the choice of E-feature-bearing head. One possibility is that *v* head is the E-feature bearing head, and the ellipsis site is a VP. A second is that the head that selects for Pred vs. *v* is the head that bears an E-feature in the latter, but not the former case; this head is Asp.

I adopt the latter avenue of investigation here, largely because it allows for a slightly bigger ellipsis domain (*v*P), which in turn captures the observation that various *v*P-modifying elements (adverbs, PP modifiers) may apparently be included in the ellipsis site.²⁷ Taking

²³ Tense and agreement morphemes require a host to their left; this host could in principle be the phonological support morpheme *-e-*, but as (51) shows, stranding the tense and agreement morphology is not possible even in the presence of E-SUPPORT. A reviewer points to a possible alternative analysis of the ungrammaticality of (51) with an omitted AP, in which the source of the problem is that the phonological support morpheme is itself an enclitic, and requires something to its left to be licensed. This hypothesis is difficult to test: to my knowledge, it is not possible to start an utterance with E-SUPPORT, but that is likely due to the head-final nature of Uzbek. However, several observations make this line of analysis unlikely to go through. First, the *-e-* in E-SUPPORT begins with a very salient glottal stop, indicating that it is not enclitic but rather the initial vowel in a separate prosodic word. Second, if E-SUPPORT were itself enclitic, any VSE operation in copular clauses would still leave other valid host material to the left of the *-e-* morpheme — in (45b), the final nasal in *ham* would suffice for this purpose — and yet the operation is still unavailable. Based on these objections to a prosodically-based analysis of the restriction represented by e.g. (51), I proceed with an alternative explanation that is rooted in the grammatical properties of the heads involved in ellipsis licensing.

²⁴ Thanks especially to Boris Harizanov for very helpful discussion of this point.

²⁵ As a reviewer points out, most theories of ellipsis licensing, including the one invoked here, have to stipulate which heads are licensors of the ellipsis — a concern featured in the ellipsis literature over the past decade especially (see, for example, Thoms 2010). Landau (2020a) represents a recent attempt to systematize and make less stipulative some aspects of ellipsis licensing, by appealing to the interaction of certain head movements and phases to structure a negative condition on ellipsis licensing. While acknowledging the importance of this question to the future of theoretical work in ellipsis, I do not pursue it further here.

²⁶ One could, alternatively, consider these to be differently encoded *v* heads; this is largely a labeling decision.

²⁷ For an explication of this point, see Appendix B.

Asp to be the licensing head is also broadly consistent with a range of other facts about the behavior of Uzbek VSE. First, the construction disfavors pronunciation of subjects in the general case; this could follow either from a preference for subjects to stay ν P-internal in Uzbek, or more generally from constraints that condition *pro-drop*. Second, overt expressions of aspect are not attested in non-verbal predication, while two aspect markers — perfect *-gan-* and progressive *-yap-* — appear freely in verbal predication. To express aspectual information in copular constructions, speakers resort to strategies that permit the use of verbal, rather than non-verbal forms. Verbs with these aspect markers (even participial verbs, which bear non-verbal morphology in their outer domains) participate in VSE.

If this is correct, it leads us to expect that there should be some independent evidence of a Pred head (as distinct from ν). It also means that in the general case, the V head in verbal predication should raise at least as far as Asp, since it will need to be stranded outside of an ellipsis site. The first expectation — namely that we should be able to locate some independent evidence for the existence of a Pred head — is borne out when we look closely at the behavior of Uzbek light verbs. Pred is difficult to find overtly realized; if it is the instantiation of the copula, this is expected, since the copula is historically phonologically defective across Turkic (Sjoberg 1963). However, there are light verbs — which I take to be instantiations of ν — that can take PredP as their small clause complement.

- (52) PredP (small clause) complement of a light verb
- a. Farhod Zamira-ni bugun jinni qil-d-i.
Farhod Zamira-ACC today crazy do-PST-3
'Farhod made Zamira crazy today.'
 - b. Farhod Zamira-ni bugun kasal qil-d-i.
Farhod Zamira-ACC today sick do-PST-3
'Farhod made Zamira sick today.'

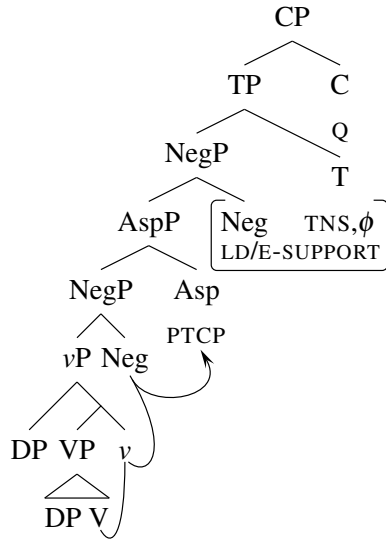
Unsurprisingly, in such configurations, VSE becomes available once more; this is because the ellipsis-licensing Asp head is present, as indicated by its selection of a light verb (ν) (53a,b). As expected, non-pronunciation of the predicative AP by itself is still ungrammatical (53c).

- (53) PredP (small clause) complement of a light verb elided in VSE
- a. Farhod Zamira-ni bugun jinni qil-d-i. Kecha esa, qil-ma-d-i.
Farhod Zamira-ACC today crazy do-PST-3 yesterday EMPH do-NEG-PST-3
'Farhod made Zamira crazy today. Yesterday, though, [he] didn't make [Zamira crazy].'
 - b. Farhod Zamira-ni bugun kasal qil-d-i. Kecha esa, qil-ma-d-i.
Farhod Zamira-ACC today sick do-PST-3 yesterday EMPH do-NEG-PST-3
'Farhod made Zamira sick today. Yesterday, though, [he] didn't make [Zamira sick].'
 - c. Farhod Zamira-ni bugun jinni qil-d-i. Kecha esa, u
Farhod Zamira-ACC today crazy do-PST-3 Yesterday EMPH 3SG
Nigora-ni *(jinni) qil-d-i.
Nigora-ACC crazy do-PST-3
'Farhod made Zamira crazy today. Yesterday, though, he made Nigora crazy.'

The second expectation — which is that the verb (or light verb) should raise at least as high as Asp in clauses containing verbal predication in order to escape the VP/ ν P ellipsis site — is consistent with the facts from participial constructions. Recall from §3 that Uzbek participial forms exhibit a mixed set of behaviors: they pattern like verbs closer to the root, but like non-verbal predicates further out from the root. By hypothesis, this

pattern comes about as the result of a combined application of both the verbal and the non-verbal word-formation strategies: participial word formation therefore involves head movement up to the aspectual marker *-gan-*, and (string-vacuous) Local Dislocation and E-SUPPORT higher in the extended projection.

(54) Word-formation in participial forms

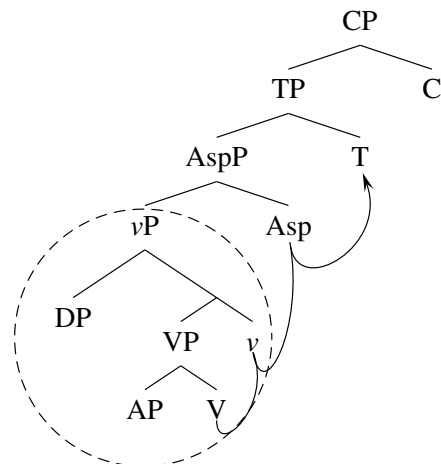


Head movement applies to all heads in the extended projection of the verb up to at least Asp. This is supported by the fact that the aspectual marker *-gan-* is never separable from the verb root and low negation. If the resulting complex is also realized as high as Asp, then we expect participial verbs to also participate in VSE constructions. The evidence suggests that this is indeed the case, since participial verbs behave just like finite verbs with respect to all of the evidence in this section.

4.3.2 Aspect mismatches

If the reasoning about copular clauses is on the right track, then a first approximation of Uzbek VSE with a finite verb might resemble (55).²⁸

(55) Verbal predication & VSE:



²⁸ The head-moved complex includes the features on T, which is why the head-moved complex is shown here as moving all the way to T. As noted in a previous footnote, the question of where in the clausal spine the complex is pronounced is a separate one, about which I have nothing to say here except that the locus of pronunciation has to be at least as high as *v*.

If the ellipsis site is *vP*-sized, this makes the prediction that aspectual information should freely mismatch across antecedents and stranded verbs in VSE. As (56)–(57) show, this prediction is borne out.

- (56) Farhod bugun devor-ni qumshuvoq qil-d-i. O'tgan yili ham qil-gan-d-i.
 Farhod today wall-ACC spackle do-PST-3 last year also do-PTCP-PST-3
 'Farhod spackled the wall today. [He] had done [spackling the wall] last year too.'
- (57) Bugun Farhod to'siq-ni qizil-ga bo'ya-d-i. Ancha yil oldin ham
 today Farhod fence-ACC red-DAT paint-PST-3 many year ago also
 bo'ya-gan-d-i.
 paint-PTCP-PST-3
 'Today Farhod painted the fence red. Many years ago [he] also had painted [the fence red].'

The availability of aspectual mismatches across antecedent and stranded verbs indicates that the Asp head is likely to be outside of the ellipsis site. The case for this is made stronger by the observation that mismatch of parts of the verb that originate inside the ellipsis site is not permitted at all (§5).

5 The Verbal Identity Condition in Uzbek

With a sense of the distribution of Uzbek AE and VSE in place, we can now proceed to the question of whether the VIC holds, and the degree to which it holds strictly, in this language. AE configurations are not at issue here, since they by definition do not involve ellipsis that targets any part of the verbal complex. Indeed, verbal mismatch in the general case of missing arguments is permitted, as long as the string is one which permits an AE analysis.

- (58) VIC is violable in AE environments
 Men Farhod sabzi-ni xomligicha ye-d-i deb o'yla-d-im, lekin siz
 I Farhod carrot-ACC raw eat-PST-3 c think-PST-1SG but you
g'aji-d-i deb ayt-d-ingiz.
 chew-PST-3 c say-PST-2
 'I thought that Farhod ate the carrot raw, but you said [he] **chewed** [it].'
 ≠'I thought that Farhod ate the carrot raw, but you said [he] **chewed** [it raw].'

Although a mismatch is permitted between the verb roots of the stranded and antecedent verbs in (58), the interpretation of the elided material is one in which the depictive predicate is not inside the ellipsis site; this indicates strongly that an AE operation is at work here.

By contrast with AE, genuine VSE constructions target for ellipsis a constituent that includes at least part of the VP, and for this reason we may expect a VIC effect to arise if Uzbek is in the same class with e.g. Irish (but not otherwise). This is what we find in Uzbek VSE configurations, and it is already supported by (58): mismatches between verbs are tolerated, but in that case, VSE cannot have applied, because the adjectival predicate is not interpreted as part of the elided material. That genuine VSE is not compatible with verbal mismatches is also apparent in cases where the complement of a verb like *seem* or *become* goes missing. Narrow or contrastive focus on the verb root in such environments — indicated by bolding of the relevant verbs — is not possible, even when the discourse conditions are such that it ought, in theory, to be licensed.²⁹

²⁹ Examples like (59) and (60) require a constellation of syntactic conditions that do not co-occur often in Uzbek: lexical verbs — as opposed to serial verbs or light verb and noun combinations — taking AP complements are infrequent, and finding two that contrast appropriately and combine with adjectives of the same morphological form is a challenge. See the comments on each example, in the following two footnotes, for elaboration.

- (59) VIC in full force for predicative AP complements:³⁰
- a. Men tarvuz shirin chiq-a-di deb o'yla-d-im. Lekin u faqat
 1SG watermelon sweet exit-PRS-3 C think-PRS-1SG but 3SG only
 shirin **ko'rin-gan** e-kan.
 sweet 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)
 1SG watermelon sweet exit-PRS-3 C think-PRS-1SG but 3SG only
ko'rin-gan e-kan.
 seem-PTCP E-EVID
intended: 'I thought the watermelon would be sweet but it only **appeared** [sweet].'
- (60) VIC in full force for predicative AP complements:³¹
- 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.' SPEAKER 1
- b. U sog'lom ko'rin-ma-yap-ti, lekin (ovoz-i-dan) *(sog'lom)
 3SG healthy look-NEG-PROG-3 but voice-3SG.POSS-ABL healthy
eshitil-yap-ti.
 sounds-PROG-3
 'He doesn't look healthy, but from his voice, [he] **sounds** healthy.' SPEAKER 2

The missing material in (59b) and (60b) is a predicative AP, which has already been demonstrated to be subject only to VSE, and never to AE. This is therefore a genuine instance of VSE, which furthermore is subject to a strict matching constraint on the verb root of the stranded verb.

An environment that seems to give mixed results is that of polar questions, where in principle both a VSE and an AE analysis of the verb-stranded response should be permissible. Some speakers are comfortable treating verbal mismatches in such environments as a cue that AE has applied (just as in (58)), and find the result acceptable as long as the adjectival predicate is not included in the interpretation. Other speakers judge the entire string as unacceptable unless it remains unelided, as in (61d) — suggesting that they can only apply a VSE parse to the responses in (61b, c).

- (61) VIC in polar questions
- a. It sabzi-ni xomligicha g'aji-d-i-mi?
 dog carrot-ACC raw chew-PST-3-Q
 'Did the dog chew the carrot (while it was) raw?'
- b. Yo'q, **yut-d-i**.
 no swallow-PST-3
intended: 'No, [he] **swallowed** [it].' 3/5 = *, 2/5 = ✓ (but ≠ raw)

³⁰ *Ko'rinmoq* 'to seem' is morphologically a passive, which may give the reader the impression that the unacceptability of (59b) 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 (60) are also morphologically passive, and the mismatch is still not acceptable.

³¹ 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, unless the predicative adjective is pronounced.

- c. Yo'q, g'aji-ma-d-i, lekin **yut-d-i**.
 no chew-NEG-PST-3 but swallow-PST-3
intended: 'No, [he] didn't chew [it], [he]
swallowed [it].' $2/4 = *$, $2/4 = \checkmark$ (but \neq raw)
- d. Yo'q, g'aji-ma-d-i. Sabzi-ni xomligicha **yut-d-i**.
 no chew-NEG-PST-3 carrot-ACC raw eat-PST-3
 'No, [he] didn't chew [it]. [He] **swallowed** the carrot raw.' $4/4 = \checkmark$

This mixed result suggests a split in the way that speakers interpret single-verb responses to polar questions — a perhaps not surprising result, given that differences between a VSE parse and an AE parse are going to be very subtle in the absence of controls (like the presence of an AP predicate in the elided constituent). There is an obvious sense in which much more work needs to be done in order to understand which syntactic and pragmatic factors might lead speakers to favor one parse over another in a given set of circumstances. It is also possible that certain speakers may, in the absence of particularly robust evidence, choose only one analytical possibility and exclude the other entirely — a possibility explored, though for a different syntactic paradigm, by Han et al. (2007; 2016). Whatever the explanation for the variable judgments associated with (61), it is striking that no speakers permitted *both* a VSE analysis — as indicated by an interpretation in (61b, c) that does not include the adjective *raw* — *and* a mismatch in between the verbs in the verb-stranding expressions in (61b, c). Together with evidence from (59) and (60), where the unavailability of mismatch comes together with environments that unambiguously involve VSE, this constitutes strong evidence that VSE obeys the VIC in Uzbek, even under conditions that might plausibly facilitate verbal mismatch.

To the extent the data and arguments presented here are convincing, the conclusion is that Uzbek is a member of the class of VIC-obeying languages, while crucially being typologically not related to other members of that group (namely Lithuanian, Irish, and Scottish Gaelic). It is also the case that the Uzbek evidence provides a strong argument against the proposal that the source of such effects can always be attributed to independently observable facts about the way in which narrow focus on verbs is expressed in a given language. The introduction to this paper delineated two ways in which to understand VIC effects, when they arise. One source for such effects may be the manner in which head movement and ellipsis interact, as suggested in Schoorlemmer & Temmerman (2012); McCloskey (2017); Gribanova (2018b). An alternative explanation, pursued independently by Thoms (2018) and Merchant (2018), is that in the languages where the VIC obtains, it obtains because main verbs are unable to host the pitch accent obligatorily associated with narrow focus in the configurations that might otherwise give rise to VSE. Thoms (2018) shows, for example, that for Scottish Gaelic, the configurations which give rise to VSE — VSO word orders — are such that the verb cannot host the pitch accent associated with narrow focus. Instead, narrow focus on verbs is expressed via a cleft. Merchant (2018) bases his discussion on recent work by Bennett et al. (2019) on the syntax-prosody of ellipsis in Irish VSO word orders. One of the many contributions of Bennett et al. (2019) is a demonstration that Irish verbal stems in VSO orders cannot bear the pitch accent associated with focus prominence. When verb stems are focused in VSE, the pitch accent is realized not on the verb itself, but on an incorporated subject pronoun which is realized in just those cases where focus prominence on the verb stem arises and requires a realization. Merchant's (2018) point is that narrow focus on verb stems in VSE configurations like (5), repeated below as (62), would require realization of a pitch accent that, for language-specific reasons, has no appropriate host in (62).

- (62) **Irish* (McCloskey 2012)
 Níor cheannaigh mé teach ariamh, ach dhíol.
 NEG-PAST buy I house ever but sold
 ‘I never bought this house, but sold it.’

Both Thoms and Merchant, then, are able to identify a potential explanation for VIC effects in Scottish Gaelic and Irish, respectively, which is not at all related to the interaction of head movement with ellipsis. On this perspective, we may expect that in languages with VSE where a VIC effect is attested, we should be able to find independent evidence that verb stems simply cannot host the realization of focus prominence in the configurations of interest, giving rise to unacceptability of verbal mismatch.

The Uzbek data presented thus far take on a special significance in the context of these arguments. While it is possible that VIC effects in Irish and Scottish Gaelic are amenable to language-specific explanations related to the inability of verbal stems to host focal pitch accent in the relevant configurations, the question remains whether such an explanation can extend to the entire range of languages in which such effects are attested. The Uzbek evidence provides a strong indication that it cannot. This is because, as (59a), (60b), and (61d) show, contexts with no elision fully support contrastive focus on verb stems, in the traditional verb-final word order that would also be involved in VSE configurations. Put another way, no difficulty whatsoever arises when Uzbek verbs are contrastively focused in the general case. This is straightforward to demonstrate in a variety of other contexts as well. First, as (58) strikingly shows, no ungrammaticality arises when verbal mismatch occurs with AE, and yields strings that are on the surface very similar to those in e.g. (59b). This demonstrates that the ungrammaticality of verbal mismatch is specific to VSE contexts, and shows that other grammatical configurations permit verbal mismatch straightforwardly. Second, Uzbek focus-sensitive operators *faqat(gina)* and *xolos*, both of which mean something like ‘only’, can associate with the verb.

- (63) 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 **yur-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 (63, 64a), its use in VSE configurations where the VIC is violated does nothing to ameliorate the result (64b).

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

Given the availability of focal contrast on Uzbek verbs in the general case, nothing should prevent this same strategy from obtaining in VSE; yet, verbal contrast in VSE is still not acceptable, as (59b), (60b), (61b, c), and (64b) show. Therefore, the Uzbek VIC effect cannot be attributed to the same explanation that obtains for Irish and Scottish Gaelic. At least for Uzbek, then, an alternative explanation for the VIC effect is required; there is of course an available explanatory path that, if pursued, would reintroduce into the discussion the interaction of head movement with ellipsis. The strength of the case for this move hinges on there being a robust set of languages that are like Uzbek in obeying the VIC in VSE configurations and yet regularly permitting contrastive focus on verbs in the general case, in the same syntactic environments (modulo the application of ellipsis, of course). The case study presented here is therefore an initial step in that direction, and much more work remains to be done; it is worth pointing out, however, that Portelance (2020) has made a strong case that Lithuanian VSE also obeys the VIC, and that this effect also cannot be attributed to the inability of verbs to host narrow focus. It seems quite possible that other languages with these same properties can and will be identified as researchers in this area continue to investigate to the relevant configurations across a diverse array of languages.

6 Conclusion

I have argued in this paper that Uzbek has two operations — AE and VSE — which can result in identical or very similar surface strings. Nevertheless, the two operations can be distinguished from each other, primarily in configurations where predicative phrases are elided; this is possible only for a VSE operation, but not an AE operation. I have also made the case that in configurations that are characteristic only of VSE, a lexical identity condition holds, wherein the verb root is required to be identical to an antecedent verb root (the VIC). This makes head movement out of the ellipsis site different from syntactic phrasal movement, which typically permits such mismatches if the extracted pieces are also contrastively focused. Finally, in §5, I argued that this strict identity condition in the case of VSE cannot be explained by way of appealing to independently attested constraints on the interaction between discourse structure and the syntax of Uzbek. This latter point is particularly important, since other languages in which the VIC genuinely holds may be amenable to explanations related precisely to independently attested constraints on how narrow focus on verbs can be expressed (Merchant 2018; Thoms 2018). Verb roots/stems in Uzbek can host the relevant pitch accent in ellipsis and non-ellipsis configurations, which means that the inability to have mismatching verbs in VSE must be explained in a manner that does not resemble the explanations in Merchant 2018 and Thoms 2018 for Irish and Scottish Gaelic, respectively.

This result supports the existence and applicability of a different type of explanation for the VIC, which has been pursued recently by Gribanova (2018b). Recall that we are trying to explain not only why Uzbek verbs obey the VIC in VSE configurations, but also why other languages — Russian (Gribanova 2013c), Hungarian (Lipták 2013), Greek (Merchant 2018), among others — do not. The possibility explored in Gribanova (2018b) is that the architectural status of the head movement involved should have direct consequences for identity requirements on the pieces of the verb that were extracted from the ellipsis domain. The proposal is based on H&G's recent work on head movement; their argument is that one type of head movement is modeled by genuine movement of a head in the syntax, and has syntactic properties: it is governed by the same locality as phrasal movement (potentially violating the head movement constraint (Travis 1984)); it may potentially give rise to interpretive effects; it obeys the Extension Condition, resulting in the effect of upward movement; and it does not result in complex morphosyntactic structures, but

rather gives rise to word order permutations. An altogether different group has properties that violate standard assumptions about what a syntactic computation can do (Chomsky 2000), and is therefore modeled by a postsyntactic operation (*Amalgamation*) that either *Raises* or *Lowers* (Embick & Noyer 2001) a head into a head adjunction structure. This operation behaves differently: it obeys the head movement constraint; it never gives rise to interpretive effects; it builds morphosyntactic complexes, which can correspond to words; and the resulting complex may be pronounced in a variety of positions along the part of the extended projection.

The point made by Gribanova (2018b) is that such a distinction can be profitably leveraged to explain the presence or absence of the VIC in a language with genuine VSE. Syntactic movement of heads should behave just like phrasal syntactic movement, and give rise to the same potential for lexical mismatch as phrasal movement. By contrast, under the common assumption that ellipsis licensing and the application of any identity requirements are applied to the output of syntax, postsyntactic amalgamation takes place at a point in the derivation that follows licensing. It follows that postsyntactic amalgamation ought to result directly in the VIC, since the output of syntax in such a derivation involves all of the pieces of the verb *in situ*, not moved syntactically. The account relies on the availability of independent evidence in favor of a particular instance of head movement in a particular language being of the syntactic or postsyntactic type. The explanation described here will be successful insofar an independently supported conclusion will then correspond to the behavior of that instance of head movement in that language yielding (or not yielding) a VIC effect in VSE.

Although such an approach seems to have potential, many details remain to be worked out; this paper has a rather more modest aim, which is to demonstrate that there is in fact a need for an explanation for the VIC that goes beyond language-specific factors relating to the inability of a language to associate focal pitch accent with verb stems. It should be noted that H&G's approach is not the only one that is amenable to the kind of explanation elaborated here. Other approaches that take roll-up head movement to be the result of a differently implemented postsyntactic process (Hall 2015; Svenonius 2016; 2018) are likewise amenable to such an explanation, although not all of those approaches are explicit in how they would account for those head movements that *do* permit mismatches in VSE. There are also approaches besides H&G's that admit a split in the behavior of head movement: although both types of head movement are taken to be syntactic, one is akin to phrasal movement (to a specifier position, along the lines of Matushansky 2006) and leaves behind copies, while the other defines an operation in which either a copy — as standardly understood — is not created (Arregi & Pietraszko 2018; 2020), or a copy is created, but is treated differently than phrasal copies would be (Saab 2019). Such approaches are also in theory compatible with the explanation sketched here; a thorough comparison lies beyond the scope of this investigation, but I hope to have made clear here the trajectory for further explorations in the domain of identity effects in VSE.

Abbreviations

1/2/3 = first/second/third person, ACC = accusative case, COMP = complementizer, CONV = converb suffix, COP = copula, DAT = dative case, E = phonological support for stranded tense/aspect, EMPH = a particle that marks contrastive topics, 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.

Additional Files

The additional files for this article can be found as follows:

- **Appendix A.** Deriving non-verbal predicate forms. DOI: <https://doi.org/10.5334/gjgl.1042.s1>
- **Appendix B.** Adjuncts and negation in Uzbek VSE. DOI: <https://doi.org/10.5334/gjgl.1042.s2>

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Competing Interests

The author has no competing interests to declare.

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