

Complex verbs and wordhood in Turoyo (Neo-Aramaic)*

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SUMMARY

This short paper investigates the structure of verbs in the Neo-Aramaic language Turoyo, drawing on data from Jastrow 1993. Patterns of allomorphy and agreement in Turoyo reveal that the verbal complex cannot be formed by simple head movement, and so a number of alternative paths to wordhood are considered, including approaches inspired by Compton and Pittman 2010, Harley 2013, Svenonius 2016, Piggott and Travis 2017, and Harizanov and Gribanova To appear.

RÉSUMÉ

Ce court article examine la structure des verbes en touroyo, langue néo-araméenne, consultant les données de Jastrow 1993. Des données d'allomorphie et d'accord en touroyo révèlent que le complexe verbal ne peut pas se former à partir d'un seul mouvement de tête; d'autres voies à la lexicalisation sont ainsi étudiées, notamment des approches s'inspirant de Compton and Pittman 2010, Harley 2013, Svenonius 2016, Piggott and Travis 2017, et Harizanov and Gribanova To appear.

1 INTRODUCTION

From her earliest work to some of her most recent, Lisa Travis has been interested in word formation (see, e.g., Travis 1984; Piggott and Travis 2013; Kilbourn-Ceron et al. 2016; Piggott and Travis 2017). One major thrust of this work has been to maintain that words cannot contain any phrasal

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material, and that, fundamentally, words are X^0 s. Her work has dealt with a number of tricky cases of wordhood, including word-internal adjuncts in Ojibwe and cycles inside words in Malagasy.

In this short paper, I bring another wordhood puzzle to bear on the X^0 theory of wordhood, from the Neo-Aramaic language Turoyo. What we will see is that allomorphy and agreement alignment in Turoyo motivate a morphosyntactic structure for the verbal complex that does not straightforwardly map onto a word in the traditional sense—the verb must not be dominated by a single X^0 , at least in the syntax. In light of this conclusion, I will explore two ways to maintain that at some level of the derivation Turoyo verbs are in fact X^0 s, as well as considering several non- X^0 alternatives.

2 THE BASICS OF TUROYO VERBS

Turoyo is an endangered Central Neo-Aramaic language spoken originally in southeastern Turkey, and spoken today mainly in a widespread diaspora community (Weaver and Kiraz 2016). Like all Neo-Aramaic languages, Turoyo has rich verbal morphology, especially with respect to agreement. This section lays out the basic components of Turoyo verbs to set the stage for piecing together their morphosyntactic structure. All the data presented here (including all page numbers cited) and a number of the basic generalizations come from Jastrow’s (1993) grammar of Turoyo.

The example in (1) below shows a transitive verb with two arguments indexed¹ on the verb. As pronouns in Turoyo are null except when focused, this verb can stand alone as a well-formed sentence. The verb stem itself is a root-and-template form, here combining aspect with the root *zəbʔ* ‘catch’.² (The morpheme-by-morpheme breakdown gives the forms of the morphemes before any purely phonological processes have taken place; surface forms are given in parentheses.)

- (1) *zəbʔ* -o -ət -l-e (=zəbʔatle)³
 catch.IMPF -**B**F.SG -**S**2SG -**L**-3M.SG
 ‘you (fem. sg.) catch him’ (p. 135)

Agreement is suffixal on the verb stem, and in a transitive imperfective is made up of three distinct pieces—these are labeled with bold italic capital letters in the glosses (B, S, L), and each represents a different paradigm/pattern of agreement. The “base” set, B, is always the closest to the verb base, and encodes (maximally) the number and gender of an argument: B is null when the argument it indexes is masculine singular, -o for a feminine singular argument (as in (1)), and -i or -ən for a plural argument (§3). Next out from the verb base is S (for “simple”) agreement, which encodes (maximally) the person and number of the same argument indexed by the B suffix (whatever that argument is), leading to a partial redundancy in feature-marking. Finally, we see the L set, which consists of a dative/locative piece, l, plus a “personal suffix” (found on prepositions and as pronominal possessors). The L agreement marker can encode a full set of φ -features, and always indexes a

¹ I will be using the terms “index(ing)” and “agree(ment)” interchangeably throughout the paper.

² Jastrow (1993) refers to the (finite) verb bases as varying based on tense, but it is clear from the existence of separate tense morphemes (and the effect these morphemes have on the interpretation of the verb) that the primary semantic contribution of the verb base is not temporal but rather aspectual. This accords with findings about the verb base in other closely related Neo-Aramaic languages (see, e.g., Hoberman 1989; Coghill 1999).

³ Two phonological processes are at work here: vowel hiatus resolution (deletion of ə) and o→a in closed syllables.

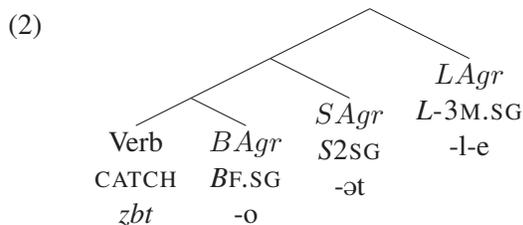
distinct argument from that indexed by B and S. The S and L paradigms are shown in Table 1.⁴

Table 1: *S and L suffixes in Turoyo (p. 128–129)*

	S form	L form
1SG	-no	-l-i
1PL	-na	-l-an
2M.SG	-ət	-l-əx
2F.SG		-l-ax
2PL	-ut(u)	-l-xu
3M.SG	-∅	-l-e
3F.SG		-l-a
3PL		-l-le

While the basic verbal template (Verb-B-S-L) is constant, which agreement suffixes agree with which arguments changes based on transitivity and aspect; we'll return to this in §4.

Working just from this basic information about Turoyo verbs, and with no deeper investigation of the language, one might posit a structure for the verb in (1) that looks like (2), with the verb root being the most deeply embedded piece, and the L marker being the least embedded. (I put aside the root-and-template nature of the verb base here and for the remainder of the paper.)



However, §3 and §4 will mount two distinct arguments that (2) cannot be the structure of the verbal complex, but rather, that the agreement morphemes have the opposite hierarchy: the L marker is the *most* embedded of the agreement markers. In very brief, the arguments are as follows: (i) §3: the form of the *B* suffix is sensitive to phonological material that follows it in the verbal complex, so (assuming that phonological word-forms are built from the bottom up) the *B* suffix must be structurally *higher* than what follows it (not lower, as in (2)); and (ii) §4: when B/S index an object (rather than a subject, (1)), the object must be 3rd person, suggesting that B/S originate *high* in the structure, above the subject (which is an intervener on B/S's path to the object), while L (which is unrestricted regardless of what argument it agrees with) originates *low* in the structure.

3 EVIDENCE FROM ALLOMORPHY AGAINST SYNTACTIC WORDHOOD

The type of allomorphy of interest here is when the form of a morpheme varies based on grammatical, lexical, or phonological properties of the morpheme's context and this variation cannot be

⁴ There is allomorphy in the L series that I do not discuss here. See Kalin 2018.

explained by appealing to the general phonological system/processes of a language. In particular, what is relevant is a crosslinguistic generalization about when allomorphy can have a *phonological* trigger (Carstairs 1990; Bobaljik 2000; Paster 2006, *i.a.*): generally speaking, allomorphy that is triggered by phonology can be “inwardly” sensitive, but not “outwardly” sensitive; in other words, a morpheme may vary in form based on the phonological properties of elements that are *more embedded* than the morpheme itself, but not *less embedded*.⁵ To take a quick example, in Modern Western Armenian, the definite article (a nominal suffix) has two contextual allomorphs, taking the form *-n* when the noun root ends in a vowel, and *-ə* when it ends in a consonant, e.g., *lezu-n* ‘the tongue’ vs. *kirk-ə* ‘the book’ (Andonian 1999, cited by Paster 2006); this is inwardly-sensitive phonologically-conditioned allomorphy. A common explanation that holds across morphological frameworks (see, e.g., Kiparsky 1982; Carstairs 1987; Anderson 1992; Halle and Marantz 1993; Bobaljik 2000) is that words are in some sense phonologically built from the most-embedded part (typically the root) to the least-embedded part; it thus follows naturally that an outer morpheme can only be sensitive to (can only “see”) the phonology of a morpheme that is more deeply embedded than it.

Turning back to Turoyo, and taking the structure in (2) as a starting point, we find—surprisingly—a case of allomorphy that appears to be outwardly-sensitive to phonology. This allomorphy is found within the B set, in the forms that the B suffix has when it indexes a plural argument. BPL has the form *-i* when it is word-final, (3a), and when it appears before a CV sequence, (3b) (see also (7a)):

- (3) a. gaḥik -i -∅ (=gaḥiki)
 laugh.PFV -BPL -S3
 ‘they laughed’ (p. 129)
 b. nəšq -i -∅ -l-a (=nəšqila)
 kiss.IMPF -BPL -S3 -L-3F.SG
 ‘they kiss her’ (p. 133)

When BPL precedes a CC cluster (i.e., in closed syllables), it takes a different form, *-ən*, (4).

- (4) nəšq -ən -∅ -n-xu (=nəšqən-xu)
 kiss.IMPF -BPL -S3 -L-2PL
 ‘they kiss you (pl.)’ (p. 127)

It is important to note that the surface pronunciation of this form (and all other non-past verbs with this allomorph) is opaque in several ways. This is because the *-ən* allomorph of BPL always coincides with an allomorph of the dative component (*l*) of L agreement, which has the form *n* in this context;⁶ this results in a phonotactically-illegal CCC sequence (*nnx*) which is simplified by shortening the long consonant. This phonologically-altered form obscures the allomorph of BPL: it looks like it is just *-ə*, concurrent with the *n* allomorph of the L morpheme. The surface form also obscures the *environment* that triggers the allomorphy, as on the surface, the *-ən* allomorph does not precede CC, but rather CV (*xu*). You might be wondering, then, why posit this allomorphy at all? The answer is because there is a context where the allomorphy is (mostly) transparent: when the

⁵ There are, of course, at least purported counter-examples. See e.g. Carstairs (1990) and Deal and Wolf (2017) for a few counter-examples and ways to understand them without (at least fully) abandoning the larger generalization.

⁶ The *l/n* alternation of the dative marker is independent of the *-ən* allomorph. See Kalin 2018.

past tense morpheme, which is an in(ter)fix (it takes its surface position late in the derivation; Kalin 2018), linearly intervenes in the CCC sequence, all three consonants survive on the surface, (5).

- (5) nəʃq -ən -∅ -wa -n-xu (=nəʃqənwanxu* *nəʃqiwanxu* *nəʃqəwanxu)
 kiss.IMPF -**B**PL -**S**3 -PST -**L**-2PL
 ‘they used to kiss you (pl.)’ (p. 134)

In order to understand the form in (5), we must recognize the distinct -ən allomorph of BPL—there is no general process of nasal-insertion (or deletion) in Turoyo, nor could this alternation be explained phonotactically: in (5), the *n* creates a slightly more marked syllable structure than it would have had otherwise with the elsewhere -i form of BPL (as it creates a closed syllable), and in (4), as discussed above, the allomorph choice *creates* a phonotactic violation, *CCC.⁷

A quick look at Table 1 will show you that the only contexts in which the BPL morpheme will be surface-adjacent to a CC sequence is when the S morpheme is null (i.e., 3rd person) and at the same time the L agreement indexes either a 2PL or a 3PL argument. One might wonder, then, whether this allomorphy is better characterized as being featurally-triggered, by plural non-first persons. Importantly, this cannot be the right characterization, as the -ən allomorph is crucially not triggered when the closer morpheme, the S morpheme, itself marks a plural non-first person; this can be seen in (3) for 3rd person plural and (6) for 2nd person plural. (In (6), vowel hiatus resolution obscures the B plural morpheme; but there would have been no hiatus at all if the allomorph here were -ən.)

- (6) zəbʈ -i -ut -l-e (=zəbʈutle; *zəbʈənutle)
 catch.IMPF -**B**PL -**S**2PL -**L**-3M.SG
 ‘you (pl) catch him’ (p. 135)

Summing up this section, what we have seen is that the form of the (plural) B morpheme is sensitive to (conditioned by) phonological material that follows it in the verbal complex. Under the structure in (2), this would constitute a violation of a well-established crosslinguistic generalization about phonologically-conditioned allomorphy. This is a first indication, then, that perhaps (2) is not the right structure—the allomorphy of the B morpheme would not be unexpected if B were instead hierarchically *higher than* the material that follows it in the verbal complex.

4 EVIDENCE FROM ALIGNMENT AGAINST SYNTACTIC WORDHOOD

A very different sort of evidence that casts doubt on the structure in (2) is found in the split-ergative pattern of Turoyo. The data I will be drawing on again is complex verbs with no overt arguments, but it is helpful to keep in mind the following preliminaries (Ritter 1990; Jastrow 1993; Hemmauer and Waltisberg 2006; Coghill 2016): whatever pieces of morphology co-index the subject in the verbal complex, those pieces are obligatory, regardless of whether the subject is overt or null, pronominal or a full DP. Whatever pieces of morphology co-index the object in the verbal complex, these only surface when the object is a pronoun (null/non-focused or overt/focused).

⁷ It is in fact common for allomorph choice, even phonologically-conditioned allomorphy, to not be phonologically optimizing (e.g., Paster 2006), which can be taken as evidence against global approaches to allomorphy (Embick 2010).

Turoyo has an aspect-based agreement split, with a person restriction in the perfective. We'll start with the imperfective, the unrestricted form. On the imperfective verb stem, the B and S morphemes index the subject, (7a–c), while the L set indexes the object, (7b–c).

- (7) a. dāmīx -i -na (=dāmīxina)
 sleep.IMPF -**B**PL -**S**1PL
 'we sleep' (p. XVIII)
- b. nəšq -o -∅ -l-le (=nəšqalle)
 kiss.IMPF -**B**F.SG -**S**3 -**L**-3PL
 'she kisses them' (p. 133)
- c. zəbṭ -∅ -əṭ -l-i (=zəbṭəṭli)
 catch.IMPF -**B**M.SG -**S**2SG -**L**-1SG
 'you (masc. sg.) catch me' (p. 135)

As can be seen above, both arguments in this basic structure can be 3rd or non-3rd person.

Turning now to perfectives, we see that intransitives look just the same, (8), with B/S indexing the subject, just as in (7a).

- (8) gaḥik -o -no (=gaḥikono)
 laugh.PFV -**B**F.SG -**S**1SG
 'I (fem.) laughed' (p. 129)

However, differences arise in transitives. Considering just 3rd person objects, we see classic split-ergativity: B/S now index the *object* ("absolutive"), while L now indexes the *subject* ("ergative"); this reverses the marking of transitive imperfectives, cf. (7b):

- (9) nšiq -i -∅ -l-a (=nšiqila)
 kiss.PFV -**B**PL -**S**3 -**L**-3F.SG
 'she kissed them' (p. 131)

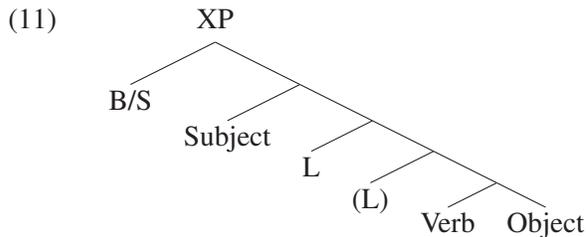
However, 1st/2nd person objects break this split-ergative pattern, as they cannot be indexed by B/S, but rather must appear in a novel verbal structure: L indexes the subject (as before), and a second L following the first indexes the object, (10).⁸

- (10) a. nšiq -l-e -l-əx (=nšiqleləx)
 kiss.PFV -**L**-3M.SG -**L**-2M.SG
 'he kissed you (masc. sg.)' (p. 137)
- b. səm -l-ax -l-i (=səmlaxli)
 make.PFV -**L**-2F.SG -**L**-1SG
 'you (fem. sg.) made me' (p. 138)

In sum, while subjects in the perfective are uniformly marked (with L agreement in the first L "slot"), objects are marked (i) via B/S, between subject agreement and the verb, if they are 3rd person, but (ii) via a second L, after subject agreement, if they are 1st/2nd person.

⁸ This double-L structure is also used for agreeing datives (p. 137); such agreement is thus ambiguous.

Putting together the Turoyo agreement split, the following picture emerges. The starting assumption that I rely on here is that positions that are restricted to 3rd person are subject to some sort of *intervention*, i.e., there is an intervening nominal on the path from the agreeing node to the restricted nominal (see Anagnostopoulou 2003 and Béjar and Rezac 2003 among many others). With this in mind, recall that there is no person restriction on B/S when these pieces index the subject, (7), indicating that there are no interveners between the locus of the subject and wherever B/S structurally reside. Similarly, there is no person restriction on any L agreement, indicating that L has a direct line to both the subject and the object. The only time a person restriction surfaces is when B/S index an *object*, (9), suggesting that there is intervention on the path from B/S to an object; since the subject is the only other nominal in these transitive clauses, it seems that the subject itself is the intervener. Specifying the structure minimally so as not to make any unsupported claims about irrelevant aspects of it (and combining B and S in one locus, as they either originate together or are structurally non-distinct), the alignment facts motivate a clausal structure like that in (11):



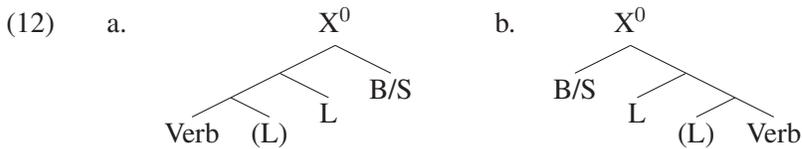
This structure captures the data at hand in the following way. In the imperfective, both B/S and L probe downwards, thus both agree with the closest argument that they c-command: L agrees with the object, and B/S with the subject; there is no person restriction on either agreement. In the perfective, L probes upwards (for some reason connected to aspect, à la Anand and Nevins 2006), and agrees with the subject. This leaves B/S to agree with the object, which B/S can only successfully do for a 3rd person object, as there is an intervener on its path, the subject. If the object is 1st/2nd person, B/S agreeing across an intervener is not sufficient to license the object, and so a closer agreement locus must be utilized, which is the (last resort in some sense) L that is in parentheses in (11).⁹

The takeaway from this section is that we have another indication that the structure of verbs in Turoyo is one in which B/S is structurally high, not structurally low, in contrast to (2).

5 HOW THE VERBAL COMPLEX MAY COME TOGETHER

In §3 and §4, I presented two arguments that despite the surface morpheme order (Verb-B-S-L(-L)), L agreement is in fact structurally *lower than* B/S agreement. This is of course incompatible with the morphological structure one might expect by default for these complex verbs, given in (2). However, it's also easy to see that the word structure that is predicted by head movement (of the verb up to B/S) in (11) will not produce the right order of morphemes: (12a) shows the structure produced by the verb uniformly picking up suffixes on its path, and (12b) shows the result of uniform prefixation.

⁹ How/why does a person restriction emerge in this environment? See the literature on the Person Case Constraint, especially Anagnostopoulou 2003, Béjar and Rezac 2003, Nevins 2007, and Preminger 2014.

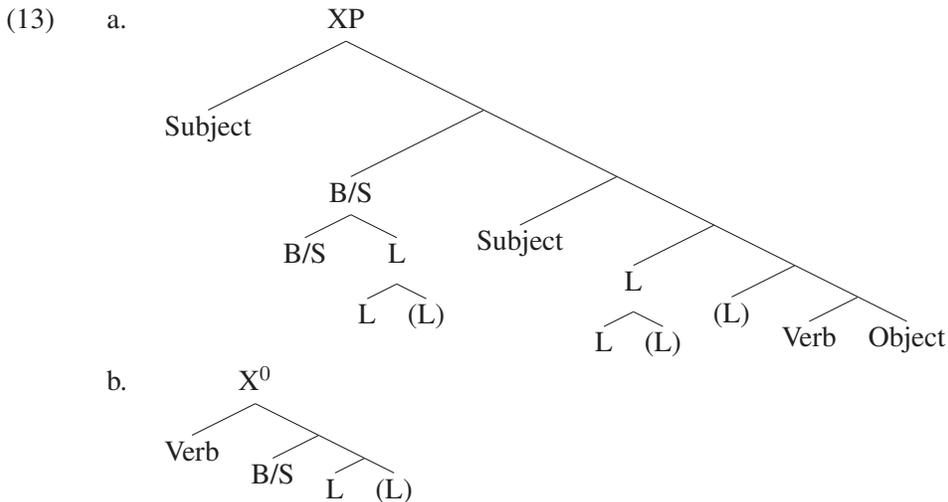


The suffixal derivation, (12a), puts the verb where we want it (initial), but the agreement in the opposite order, and the prefixal derivation, (12b), gets the agreement order right, but incorrectly predicts the verb to surface at the end of the verbal complex. Something else apart from traditional head movement must be going on to derive the structure of complex verbs in Turoyo.¹⁰

In this section, I briefly lay out a number of logically possible, distinct derivations of the Turoyo verbal complex, drawing on a variety of recent work on wordhood. The first two accounts are predicated on the assumption that words at some level of the derivation must be X⁰s (Baker 1988; Bobaljik 2012; Piggott and Travis 2017, *i.a.*; Lisa Travis coined the term “head banging” to refer to such approaches), while the latter derivations rely on looser definitions of what makes a word.

5.1 MERGER UNDER ADJACENCY

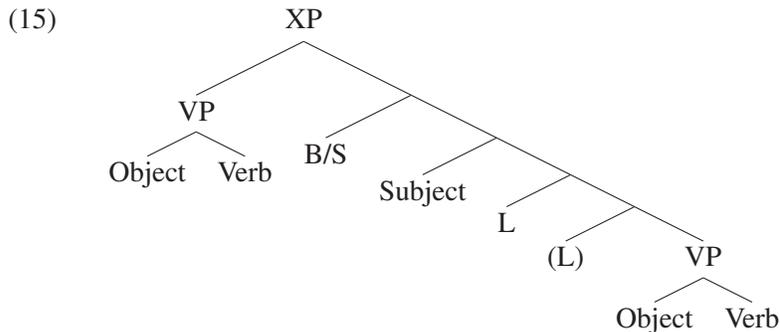
Traditional head movement combined with a very general operation of Merger Under Adjacency (Marantz 1984; Bobaljik 1994; Harley 2013, *i.a.*) can give us the “desired” Turoyo verb. Inspired by an analysis of Cupeño verbs (Barragan 2003; Harley 2013), this approach would have L raise to B/S (adjoining to B/S as a prefix) in the syntax, (13a). (For completeness, I include (L) raising to L here, and show the subject raising to a high clausal position.) In the post-syntax, the verb merges-under-adjacency with the linearly adjacent head-complex (B/S-L(-L)), adjoining at the X⁰ level and left-aligning to it, (13b). (*nb.* Lowering B/S to V after (13a) would also produce (13b).)



¹⁰A post-syntactic operation like Lowering (Embick and Noyer 2001) could get the right morpheme order, if there is successive “roll-down” Lowering starting from the highest head, along with variable linearization of the lowered head with respect to its host. However, a pure Lowering account will re-introduce the allomorphy problem, as B/S will be more deeply embedded than L. I therefore reject this as a possible account of how the Turoyo verb comes together.

5.4 “SQUISHING” AND “GLOMMING”

A final possible structure to consider is one in which it is the whole VP, not just the verb, that raises past B/S to a high syntactic position:



The structure in (15) is compatible with two final possible analyses for the Turoyo verbal complex. The first possibility, “squishing”,¹¹ maintains the idea that words are constituents, but denies that they must be X^0 s in all languages. According to such an account (e.g., Compton and Pittman 2010), the entire XP in (15), if it is a phase, can be spelled out as a word. The subject and object—being phases/DPs—form their own prosodic units separate from the root XP, and so do not interfere in the formation of a word out of the other material in XP. (Alternatively, it might be that the subject and object evacuate the maximal XP to yet higher syntactic positions.) This leaves V, B/S, L, and (L) in the XP “word”.

The final possibility that I will mention here is the most radical in the sense that it requires neither that words be constituents (as X^0 or XP) *nor* that the morphemes in the word stand in a head-complement relation (as is required in a Spanning account). This approach is the “glomming” approach, and has been around for quite some time (see Kayne 1994; Julien 2002, 2007, among others). To successfully *glom* the verb word together in (15), the subject would need to raise out of the way, but the object would not, so long as it precedes the verb in VP (as in (15)). What we are left with is adjacency at the phonological level of the morphemes in the verbal complex, but nothing more than that to tie the verb word together. Given that the agreement affixes are phonologically quite small, it could be this and this alone that drives them to phonologically lean on V. However, it is important to note that this sort of account (unlike a squishing account like that above) predicts that if a phrasal constituent (e.g., an adverb) were to intervene in the V-B/S-L(-L) sequence, then it would interfere in the formation of the verb word; this does not seem to be empirically borne out, and so an account that relies fully on glomming is perhaps the least plausible of all the options.

The syntactic signature of the two accounts presented in this section is that the VP is syntactically high. Both approaches achieve the right surface morpheme order and will (again given Myler’s (2017) calculus for depth of embedding) provide the desired relative hierarchy for phonologically-conditioned allomorphy of BPL. One crucial difference between the squishing, glomming, and Spanning analyses on the one hand and the X^0 analyses on the other is that the former types of anal-

¹¹This term was coined by Glyne Piggott at the workshop Exploring the Interfaces: Word Structure held at McGill University in May 2012. It was at this workshop that “head-banging” and “glomming” were also coined.

yses require that allomorphy be able to be triggered across XP boundaries, as the B morpheme does not join into an X^0 with L. This goes against some proposals that place tight locality restrictions on allomorphy (Bobaljik 2012; Bobaljik and Harley 2017; Thornton 2017, *i.a.*), and leads to a (perhaps undesirable) less restricted theory of allomorphy.

6 CONCLUSION

In this paper, I presented data from Turoyo showing that the verbal complex cannot be a “word” in the syntax, in the sense of being contained in a single X^0 by the end of the syntactic component of the derivation. I explored several other ways that the Turoyo verbal complex might come together as a word, corresponding to three different syntactic derivations—the verb stays low (this necessitates post-syntactic Merger Under Adjacency or Lowering), the verb undergoes long head-movement (this is compatible with post-syntactic amalgamation or Spanning), or the entire VP raises (this pairs with a post-syntactic squishing or glomming account). The work that remains to be done, of course, is to tease these syntactic structures apart empirically, in order to hone in on the right word-formation analysis for Turoyo. The outcome, no matter what it is, has implications for the theory of word-formation and allomorphy more generally.

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