Hixkaryana: the Syntax of Object Verb Subject Word Order

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1. Introduction

In this paper I propose and motivate an analysis of Object Verb Subject (OVS) word order in Hixkaryana, a Carib language spoken by around 600 people in the Amazon in Brazil (Lewis, 2009). OVS languages are incredibly rare – the World Atlas of Language Structures (WALS; Dryer (2008)) documents only eleven OVS languages (out of 1,377 languages sampled).[1] This number, however, is generous; for many of these languages, OVS coexists with other frequent word orders, and there is not enough data available to determine which word order (if any) is the most basic.

Hixkaryana is unique among OVS languages in that it has been amply shown to have OVS as its basic word order, following extensive and linguistically-informed fieldwork by Desmond C. Derbyshire (1979, 1985, *inter alia*). A canonical OVS sentence in Hixkaryana is given in (1):[2]

(1) toto y-ono-ye   kamara   (Derbyshire 1977:p. 593)
     man 3s.3O-eat-DISTPST.COMPL jaguar
     'The jaguar ate the man.'

That OVS word order in Hixkaryana is basic and unmarked is evidenced by the fact that O, V, and S together form a single intonational phrase and OVS order is preferred by speakers, both statistically (from texts and recordings) and based on speakers' intuitions (Derbyshire, 1985:p. 97-99).[3]

This paper analyzes Hixkaryana's syntax via the surface order of constituents (OVSX, where X is an adjunct PP or AP), surface constituency (the object and verb form a constituent exclusive of the subject), verbal morphology (agreement is a prefix while all other inflectional affixes are suffixes), the position of particles (which are either in second position or invariantly post-verbal), and exceptional OSV word order (triggered by the first person exclusive pronoun *amna*). I propose that the key feature of Hixkaryana's syntax is a non-standard ordering of the AGR projections: AGR_O above AGR_S. This clause structure is marked compared to the reverse ordering, AGR_S above AGR_O, which is generally assumed to be the default underlying order, following Chomsky (1991), based on the predominant position/behavior of object agreement crosslinguistically. I suggest that the hierarchy AGR_O above AGR_S is shared across at least some OVS languages and may account (in part) for the rarity of OVS word order.

The paper is laid out as follows. Section 2 introduces basic Hixkaryana syntax. Section 3 proposes a syntactic analysis, while Section 4 discusses the advantages of AGR_O over AGR_S. Section 5 concludes.

2. Basic Syntax of Hixkaryana
2.1. Syntactic categories

There are five basic lexical categories in Hixkaryana: nouns (N), adjectives/adverbs (A), postpositions (P), verbs (V), and particles (Prt). Nouns are bare – they are not marked for number,

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[1]See Kalin (2011:app. A) for a complete list of OVS languages and their agreement types.

[2]I will use the following abbreviations: 1, 2, 3 = first, second, third person, 1+3 = first person exclusive, A = adjective/adverb, AGR = agreement, ASP = aspect, COLL = collective, COMPL = completive, CONT = continuative, DISTPST = distant past, HSY = hearsay, IMMPST = immediate past, INTENS = intensifier, MISF = misfortunate, N = noun, NONPST = nonpast, O/OBJ = object, P = postposition, PRT = particle, RECPST = recent past, S/SUBJ = subject, TNS = tense, TOP = topic, UNCERT = uncertain, V = verb.

[3]Henceforth all page numbers cited throughout this paper are from Derbyshire (1985) unless otherwise noted.

case, or definiteness. Nouns may be marked as 'collective', in which case they appear with *komo* (as in (5a)), indicating that the noun phrase is acting (or being acted on) as a collective group. Adpositions in Hixkaryana follow their objects – hence, Hixkaryana is a postpositional language. Adjectives and adverbs in Hixkaryana are indistinguishable from one another: there is a small set of simplex modificational elements that can appear as the modifier of *v*P/VP/clause (i.e., adverbially) or can be the complement of the copula (predicating of the subject, i.e., adjectivally). Thus, adjectives and adverbs will be subsumed under the category A, following Derbyshire (1985).

Unlike N, A, and P, verb roots are never bare – they appear with both person inflection and tense/aspect/mood inflection. (For complete paradigms and discussion, see Kalin (2011:sec. 2.1.2 and app. B).) The inflectional structure of a verb is schematized in (2) and exemplified in (3), roots bolded. Hixkaryana has frequent subject- and object-drop, so the verbs in (3) could constitute whole sentences.

(2) SUBJAGR.OBJAGR-**V**-COLLECTIVITY.MOOD.TENSE.ASPECT

(3) a. nɨ- **nɨkɨ**   -yako   (p. 196)
         3S go.to.sleep RECPST.COMPL
         'He went to sleep.'
     b. oy- **owakrye** -yatxkonɨ   (p. 197)
         3S.2O make.happy COLL.DISTPST.CONT
         'They made you happy.'

The verb root is prefixed with a morpheme encoding subject agreement (for intransitive roots, (3a)) or a *portmanteau* encoding both subject and object agreement (for transitive roots, (3b)). Person-marking co-occurs with pronouns and full DPs, even when these DPs are displaced. The suffix is also a *portmanteau* and maximally encodes collectivity, tense, aspect, and mood.

2.2. Main clauses

Hixkaryana's basic (unmarked) word order is OVS (Derbyshire, 1977), as schematized with different sentence types in (4) and exemplified in (5) (where O and S are NPs):

(4) Unmarked constituent order
     a. <u>Intransitive V</u>: V S
     b. <u>Transitive V</u>: O V S
     c. <u>Copula clause</u>: AP/PP COP S

(5) a. n-eweh-yatxhe   worɨskomo komo   (p. 31)
         3S-bathe-COLL.NONPST woman   COLL
         'The women are taking a bath.'
     b. kuraha y-onyhorye-no   bɨryekomo   (p. 31)
         bow   3S.3O-make-IMMPST boy
         'The boy made a bow.'
     c. ohxe rmahaxa n-∅-aha   woto   (p. 31)
         good very   3S-be-NONPST meat
         'The meat is very good.'

The verb follows its complement (whether the complement is an NP, AP, or PP) and precedes the subject.

There is one instance of OSV word order, which is triggered by the presence of the first person exclusive pronoun *amna*. *Amna*, as a subject, obligatorily appears left-adjacent to the verb,[4] (6):

(6) a. amna n-omok-no   (p. 9)
         1+3 3S-come-IMMPST
         'We came.'
     b. kanawa amna n-a-no   (p. 10)
         canoe 1+3 3S-take-IMMPST
         'We took the canoe.'

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[4]Except in quotatives, where *amna* appears in regular subject position, right-adjacent to the verb (p. 10).

OSV word order occurs virtually nowhere else in Hixkaryana. *Amna* is also unique among other pronouns in that (i) it cannot be dropped, and (ii) it behaves (for agreement purposes) as though it were third person. This latter property may be attributable to the decomposition of 'exclusive we' into its component parts first and third person. Third person agreement, then, is single conjunct agreement.

All adjuncts/modifiers and obliques take the form of APs or PPs and uniformly appear at the end of the clause, after the subject, giving rise to the word order OVSX (where X is an adjunct), (7):

(7) biryekomo komo y-on-yetxkonɨ   kamara [txetxa wawo] [amnyehra]
     child   COLL 3S.3O-eat-COLL.DISTPST.CONT jaguar forest in   long.ago
     'The jaguar used to eat children in the forest long ago.'   (Derbyshire, 1979:8)

There are two adjuncts in (7) (bracketed), the first a PP and the second an AP.

2.3. Particles

There is one basic element in Hixkaryana that has not yet been addressed: particles. Hixkaryana is rich in particles, which come in three flavors: 'modifying,' 'discourse,' and 'verification'.[5] (See Kalin (2011:sec. 2.3) for examples of each type of particle.) Particles generally appear in clausal second position (after the first XP of the clause they are a part of) and are phonologically dependent on the word to their left, though they are morphologically independent (i.e., do not undergo the phonological processes that occur at morpheme boundaries) and can bear stress (p. 21). Since OV is a constituent in Hixkaryana (Cline, 1986), particles in a clause with no focused elements are postverbal, as in (8).

(8) wewe y-am-etxow   **ha-tɨ**   hawana komo   (p. 33)
     tree 3S.3O-fell-COLL.NONPST.UNCERT INTENS-HSY visitor COLL
     'The visitors will fell the trees (it is said).'

In fact, particles provide one of only two reliable constituency tests in Hixkaryana (the other being focus movement), since there is no straightforward clefting or coordination in the language.

2.4. Focus movement

The basic OVS word order of Hixkaryana can be altered by movement for focus, contrastive topic, or *wh*-questions, involving movement to a clause-initial position.[6] There is only one pre-object position for a fronted constituent (p. 75). In (9), the subject (canonically post-verbal) is focused:

(9) Waraka haxa   n-ehurka-no   asama yawo   (pp. 74)
     Waraka CONTR 3S-fall-IMMPST trail on
     'It was Waraka (not someone else) who fell on the trail.'

The particle *haxa* appears after the fronted subject, cf. (8). Most particles fit within this 'second position' generalization: particles appear after the focused constituent when there is one, and after OV otherwise.

There is one notable counterexample to the second-position generalization: the particle *ha* always appears after the verb. Derbyshire glosses *ha* as an 'intensifier' but it is somewhat unclear what it actually means/does. Derbyshire (1985) notes: "There is one particle that has proved particularly difficult to analyze: *ha*" (p. 160). This particle frequently occurs morphologically attached to other particles in OVS clauses with no focused constituent, as in (10a). Crucially, compare (10a) to (10b).

(10) a. n-omok-ye   **ha-tɨ**,   otwo hona   (p. 79)
          3S-come-DISTPST.COMPL INTENS-HSY village to
          'He came to the village (it is said).'
      b. [owto hona] **tɨ** n-omok-ye   **ha**   (p. 79)
          village to   HSY 3S-come-DISTPST.COMPL INTENS
          'It is to the village that he came (it is said).'

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[5]Throughout the paper, I adopt Derbyshire's glosses for particles, though sometimes the terms may not be very informative. I do not mean to ascribe any theoretical meaning to this choice.

[6]Two processes that change word order but are not discussed here include prosodic dislocation and parataxis.

When the locative in (10a) is focused, as in (10b), the two components of *hati* are forced apart from their unified form in (10a); it seems that while *ti* is in strict second position, *ha* strictly follows the verb.

2.5. Interim summary: a descriptive checklist

Hixkaryana is solidly an OVS language. The following is a checklist of Hixkaryana's core descriptive properties:

(11)   Descriptive checklist

      a.   Word order: OVSX in transitives; VSX in intransitives; Pred-Cop-S in copula clauses

      b.   Exceptional word order: OSV word order when the subject is *amna* (1+3)

      c.   Verbal affixes: *portmanteau* agreement prefix, *portmanteau* tense/etc. suffix

      d.   Particles: follow the first XP, with *ha* as an exception (follows V)

An analysis that can account for all of these properties is the goal of the following section.

3. Towards a syntactic analysis

This section presents a new analysis of Hixkaryana's main clause syntax, guided by the descriptive checklist in 2.5. There are many intricate components to the derivation. Each movement and position will be motivated in turn in this section.[7]

3.1. Syntax via inflectional morphology

The first step is to see how far the inflectional morphology can take the analysis, assuming the mirror principle (Baker, 1985:p. 375). Following Kayne (1994), raising of a head Y to a head X uniformly produces the ordering Y-X: Thus, if V is to raise from its low position and take collectivity, tense, aspect, and mood as suffixes, V can head-move through these projections. On the other hand, prefixation results from phonological adjacency/precedence. Thus, if V is to take an agreement prefix, V must end up in a head position below AGR. Finally, I assume that *portmanteau* affixes result from the concatenation of features under a single node (along the lines of Bobaljik and Branigan (2006)).[8]

Putting this all together, the underlying structure of Hixkaryana emerges:[9]

(12)

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[7] See Kalin (2011:sec. 3) for arguments against previous analyses proposed by Cline (1986) and Mahajan (2007).

[8] This statement merits much further research; it is an intuition about morphology acting on syntactic constituents.

[9] For now, I use a single AGR projection so as not to commit to the respective ordering between AGR$_S$ and AGR$_O$.

The V moves as high as the head of MOODP, picking up COLL, ASP, TNS, and MOOD as suffixal features (which are spelled out as a *portmanteau*, and which will be subsumed under one projection MTACP to simplify later derivations) and ending up with AGR as a (phonological) prefix.[10]

3.2. The agreement positions of the arguments

Where do the subject and object end up? To answer this question, it is necessary to elaborate AGRP into two separate projections, AGR$_S$P and AGR$_O$P. By virtue of the subject and object sitting in the specifiers of these projections, respectively, the heads AGR$_S$ and AGR$_O$ can be valued according to the person of the verb's arguments.[11] Thus, at some point in the derivation, the subject must be in spec-AGR$_S$P and the object must be in spec-AGR$_O$P.

Traditionally, AGR$_S$ is above AGR$_O$ (Chomsky, 1991). However, I suggest that the opposite hierarchy is true in Hixkaryana, i.e., that AGR$_O$ is above AGR$_S$. This nonstandard hierarchy has several advantages, discussed in section 4. Taking the structure (on faith, for now) to be AGR$_O$ above AGR$_S$, we have the following configuration for the *portmanteau* agreement morpheme:

(13)

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           AGR_OP
          /      \
     AGR_O        AGR_SP
    /     \       /
 AGR_S   AGR_O   t   ...
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By moving into the same head, the features in AGR$_S$ and AGR$_O$ are able to spelled out as one morpheme.

Before moving on, there is a necessary revision to the nature of AGR$_O$P. There are other elements that behave positionally like object NPs, namely predicative APs/PPs, (5c), and directional PPs, (14):

(14)   [Kasawa hona] i-te-ko   (p. 47)
       Kasawa to   1S-go-RECPST.COMPL
       'I went to Kasawa.'

Object NPs, directional PPs, and predicative APs/PPs all precede the verb and the verbal agreement prefix. Further, these three types of elements all have one thing in common underlyingly: they are the complement of the main verb/copula. I therefore propose that the phrase attracting the object NP in transitive clauses is a more general EPP position, needing to be filled even when there is no object triggering agreement. Since the subject's features have all been checked in spec-AGR$_S$P, the subject is no longer eligible for A-movement (as has been proposed elsewhere, e.g., Legate (2008)). The constituent moving into the higher EPP position (AGR$_O$P above), then, will be the complement of V. To reflect its broader function, I will label this higher EPP position PRED$_O$P instead of AGR$_O$P from here on out.

3.3. Topicalization of the subject

The word order resulting from movement of the subject to spec-AGR$_S$P and then the object to spec-PRED$_O$P is OSV, which is an attested word order in Hixkaryana but only in special cases (namely, involving the pronoun *amna*); this derivation is along the right track. The next step is for the subject to raise past the object, creating an OV constituent and giving the subject scope over the whole clause.

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[10]Since the suffix is an unpredictable *portmanteau* morpheme, it is not actually possible to determine the relative ordering among the projections below AGR. I have chosen the order represented here but I am not committed to it.

[11]This follows the spirit of Koopman (2006) in reducing all agreement to purely local spec-head configurations. While there are certain compelling reasons to believe that something more than spec-head is sometimes needed (see, e.g., Schütze (2011)), there are no (obviously) non-local phenomena involved in Hixkaryana's agreement system; as such, I do not make use of the more powerful mechanism AGREE here. Further, an AGREE account will likely yield the same results as the current proposal, as the subject must end up high for scope reasons, and the object must raise above wherever the final landing site of the V is, for constituency and word order reasons. Under an AGREE approach, then, the agreement projections would have an EPP feature independent of their agreement probe, drawing up the subject and object into these higher specifier positions, just as in this paper's proposal.

Derbyshire notes many times that the subject, when it is not focused, is like a topic; it is never new information. This provides a clue as to where the subject moves to: a topic position, (15).

(15)

TopP
├── Subj
└── TOP
    └── PRED_OP
        ├── Obj
        └── PRED_O
            ├── AGR_S PRED_O
            └── AGR_SP
                ├── t_S
                ├── t_{AgrS}
                └── MTACP
                    ├── MTAC
                    │   └── V+v...
                    └── vP
                        ├── t_S
                        ├── t_v
                        └── VP
                            ├── t_V
                            └── t_O

The resulting word order from (15) is SOV.[12] Raising the subject also has the desirable consequence that the subject does not intervene between the *portmanteau* agreement prefix (in PRED_O) and V.

3.4. Fronting of PRED_OP

(15) creates a constituent that contains just the object and the verb. If PRED_OP then moves above the subject, as in (16), into spec of a functional phrase (HAP below), then everything falls into place.

(16)

HAP
├── PRED_OP
│   ├── Obj
│   └── PRED_O
│   ├── AGR_S PRED_O
│   └── AGR_SP
│   ├── t_S
│   ├── t_{AgrS}
│   └── MTACP
│   ├── MTAC
│   │   └── V+v...
│   └── vP
│   ├── t_S
│   ├── t_v
│   └── VP
│   ├── t_V
│   └── t_O
└── HA TopP
        ├── Subj TOP
        └── t

[12]SOV, in fact, is found in many Carib languages, and some have a *portmanteau* prefix like Hixkaryana's. The difference between Hixkaryana and these other Carib languages, then, may be the (non-)inversion of PRED_OP.

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(16) derives OVS word order in Hixkaryana. I have labeled the head triggering predicate inversion HA because it seems to be this projection that houses the single exceptional particle, *ha*. Recall from section 2.4 that *ha* is always after the verb, even when there is a focused XP with particles following it (see (10)). The particle *ha* appears in many of Derbyshire's sentences, but does not seem to have any discernible or consistent affect on meaning, as noted by Derbyshire himself (p. 160). I therefore suggest that *ha* (alternating with a null allomorph) occupies the head of the functional projection that draws up PRED$_O$P.

This concludes the syntactic proposal of this paper. (For an account of the position of obliques, adjuncts, particles, and focus, see Kalin (2011:sec. 4.7-9). This has been omitted here for space reasons.)

4. Advantages of PRED$_O$ above AGR$_S$

There are three main arguments for positing PRED$_O$ above AGR$_S$: (i) it explains why S can sometimes surface between O and V, and why, in these cases, S interrupts the agreement morphology; (ii) it prevents the stipulation of an unmotivated functional projection; and (iii) it enables Hixkaryana to fit into a larger picture of OVS languages.

4.1. Accounting for amna

The special pronoun *amna* (first person exclusive) was discussed briefly in section 2.2 as anomalous in several ways relating to morphology and clause structure. To recap: *amna* is the only pronoun that cannot be dropped, and, as a subject, *amna* obligatorily appears left-adjacent to the verb, giving rise to (O)SV word order and triggering third person agreement (possibly single conjunct agreement).

Further, when a subject *amna* is paired with a third person object, the person marking prefix that it triggers is the one that generally accompanies intransitive third person subjects (*n(ɨ)-*), even when there is a transitive verb with an overt object, as in (17a) (repeated from (6b)). This can be contrasted with (17b), which shows the regular agreement morpheme for a transitive verb with a third person subject and overt third person object, *y-*.

(17) a. kanawa amna **n**-a-no   (p. 10)
          canoe   1+3   3S-take-IMMPST
          'We took the canoe.'
      b. kanawa **y**-a-no   toto   (p. 10)
          canoe   3S.3O-take-IMMPST person
          'The man took the canoe.'

Under the syntactic account presented in this paper, there is a straightforward explanation both for the position of *amna* and its disruption of regular agreement. Namely, if *amna* for some reason cannot topicalize, then it will remain in spec-AGR$_S$, between O and V, as in (18) for the example in (17a).

(18)

Crucially, the PRED$_O$ over AGR$_S$ analysis provides a subject position in between the object's syntactic position (spec-PRED$_O$P) and an agreement head (AGR$_S$), where person-markers may be generated. Since

amna in its low position in (18) would block the attachment of the agreement prefix to the verb if AGR$_S$ raised to PRED$_O$ (as it usually does), AGR$_S$ stays *in situ*, and the prefix does not reflect the presence of an object.[13] The phonological contribution of a third person object is null (see Kalin (2011:app. B)), so no overt material will be generated in PRED$_O$.[14]

If AGR$_S$ were above PRED$_O$ (as will be seen in (19)), there is no explanation for *amna*'s position (between the subject agreement morpheme and the object) or its disruptive effect on agreement.

4.2. Avoiding unmotivated projections

If AGR$_S$ were above PRED$_O$ (holding all else constant), the derivation would proceed as in (19):

(19)

HAP
HA TOPP
Subj TOP ZP
Obj Z AGR$_S$P
t_S AGR$_S$ PRED$_O$P
PRED$_O$ AGR$_S$ t_O t_{AgrO} MTACP
MTAC ...
v+V...

(19) is notably different from (16) in that there is an entirely unmotivated functional projection, ZP. This extra projection is needed for the agreement prefix to be phonologically adjacent to the verb without any intervening material. No such projection is needed in the PRED$_O$ over AGR$_S$ account.

4.3. A typology of OVS languages

The final argument in support of the hierarchy PRED$_O$ over AGR$_S$ comes from the predictions this hierarchy makes about possible agreement morpheme orders in OVS languages crosslinguistically (looking only at the possibilities generated by head movement). The results of such an exercise show that the hierarchy generates every attested morpheme order in all OVS languages that are testable for the relevant property, i.e., languages that have both subject and object agreement (though this hierarchy also overgenerates, predicting two morpheme orders that are not attested). The converse hierarchy, AGR$_S$ over PRED$_O$, both overgenerates (predicts morpheme orders that are not attested) and undergenerates (cannot predict certain morpheme orders that are attested). See Kalin (2011:sec. 5) for a full discussion of these morpheme orders and the languages they are attested in.

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[13] A surface filter on derivations, *STRAYAFFIX, will rule out a representation involving AGR$_S$ raising to PRED$_O$.

[14] Unfortunately, the picture is more complicated than this. When a subject *amna* is paired with a second person object, there is normal agreement on the verb (registering both subject and object). One suggestion as to what is going on here is that, as a last resort rescue, the affix generated in PRED$_O$ (which is not null when valued by a second person object NP, unlike third person objects) can lower/affix-hop to avoid a violation of the *STRAYAFFIX filter.

5. Conclusion
5.1. Summary

In this paper I have proposed and motivated an analysis of Hixkaryana in which $\text{AGR}_\text{O}/\text{PRED}_\text{O}$ is above AGR_S, the subject sits in a high topic position, and the rest of the clause moves over the subject.

5.2. A note on rarity

This paper has proposed that one route to OVS word order is through $\text{AGR}_\text{O}/\text{PRED}_\text{O}$ being above AGR_S. Further, this hierarchy is consistent with the morpheme orders in all known OVS languages. It is possible, then, that the main route (or one of the main routes) to OVS word order makes use of this marked hierarchy, as compared to the more standard ordering AGR_S over AGR_O (Chomsky, 1991). While certain marked properties are easily acquirable through a single piece of positive evidence, $\text{AGR}_\text{O}/\text{PRED}_\text{O}$ over AGR_S is not as straightforwardly evidenced in the input, because many of the individual properties of OVS languages will be compatible with AGR_S over $\text{AGR}_\text{O}/\text{PRED}_\text{O}$. However, certain other properties may indicate to the learner that the more marked structure needs to be posited. For example, this could be the effect of Hixkaryana's exceptional OSV word order with intransitive subject agreement. If such subtle data is crucial to learning the marked hierarchy $\text{AGR}_\text{O}/\text{PRED}_\text{O}$ over AGR_S, then this may explain why this ordering of projections (one of the paths to OVS word order) is crosslinguistically rare.

5.3. Further directions

Given the proposed analysis of Hixkaryana, there are many topics that merit further research, of which I will list just a few. First, why does *amna* result in intransitive subject agreement on the verb when the object is third person, but a regular transitive *portmanteau* agreement morpheme when the object is second person? Second, are there other arguments for having AGR_O over AGR_S aside from those presented here? Or, alternatively, are there good reasons to think that AGR_S is above AGR_O? Crosslinguistically, can non-OVS languages have the hierarchy AGR_O over AGR_S, e.g., syntactically ergative languages? Conversely, do all OVS languages have the structural hierarchy AGR_O over AGR_S?

What I hope the reader has taken from this paper is that OVS languages cannot be ignored – OVS word order is real and needs to be accounted for within theoretical linguistics. OVS languages likely have special insights to contribute about what the generative limits of any modern syntactic theory should be.

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