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WHAT MOVES, WHY, AND HOW: THE CONTRIBUTION OF AUSTRONESIAN

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PREFACE

The 26th Annual Meeting of the Austronesian Formal Linguistics Association (AFLA 26) was held on May 24-26, 2019 at the University of Western Ontario (Canada). The programme consisted of 24 presentations in addition to four plenary talks by Juliette Blevins, Vera Hohaus, Marian Klamer and Becky Tollan. This volume includes 13 papers from the conference.

As conference organizer, I received generous support from a variety of sources. Financial support came from the Social Sciences and Humanities Research Council of Canada (SSHRC), Research Western, the Joint Fund (Research Western, SOGS, SGPS), the Theoretical and Applied Linguistics Lab, the Canadian Linguistic Association, the Faculty of Arts and Humanities, the Graduate Program in Linguistics and three departments (French Studies, Modern Languages and Literatures, and Anthropology). The conference would not have been possible without the student volunteers (Sonia Masi, William Tran, Caylen Walker and Kang Xu), plus several others who helped out at the registration desk. Finally, I am grateful to the Department of French Studies for administrative support.

Many thanks to the abstract reviewers, to all those who attended, and to Mitcho Erlewine, who helped develop the current stylesheet.

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In this paper we highlight the contributions that Austronesian languages have made in our understanding of syntactic movement. We propose that any work on mechanisms that trigger or restrict movement has to be extended to include spinal movement (movement of constituents along the spine of an extended projection) as well as limb movement (movement of Specs and complements). It also has to be extended to include what we call C-movement (local roll-up movement) as well as A and A′ movement.

1. Introduction

Our goals in this paper are to (i) circumscribe the range of types of syntactic movement, (ii) understand what makes them distinct, and (iii) explain why such distinctions exist. We argue that understanding the details of how movement underlies various Austronesian constructions offers particular crucial insights into the deeper mechanisms of movement more generally in ways that other more commonly analyzed languages do not.

We begin by introducing a distinction between movement of limb constituents as opposed to spinal constituents, allowing us to, within the domain of the sentence, investigate the particular properties of moving constituents along the VP spine (extended projection of the V). We then extend the well-known inventory of movement from A and A′ to include what we call C(ategory) movement, which includes both traditional head movement and other forms of XP roll-up movement. Finally, we use an overview of this typological organization of movement to examine the role of probing features in the characterization of types of movement.[1]

2. Background

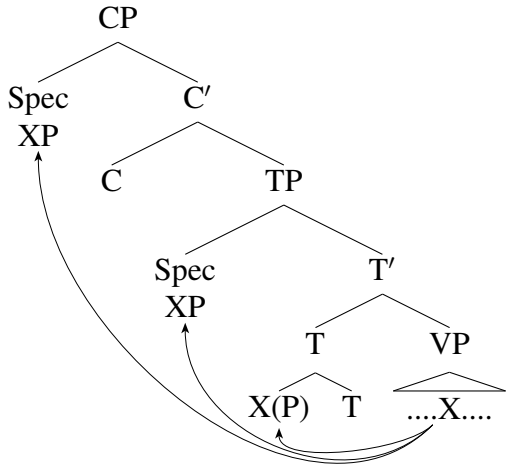
Traditionally, a typology of movement includes three types – A-movement, A′-movement and head movement. These are shown on the tree below. As we can see, certain distinctive characteristics appear – both A and A′ movement are XP movement, while head movement, by definition, is X movement. Both forms of XP movement land

*We thank the participants of AFLA 26, the LSA Workshop on the Parameters of VP Fronting, and the McGill Syntax Research Group for feedback on versions of this work, and the SSHRC Grant 435-2016-1331 to the first author for funding.

[1]Parts of this paper were developed in another paper, Travis and Massam (to appear).

in Spec positions while X movement adjoins to another X. A is distinguished from A′ as the former moves to Spec, TP while the latter moves to Spec, CP. Given these most obvious distinctions, it is not surprising that the typology was determined by size of the moved element (X vs. XP) and by landing site (traditionally A(rgument) position vs. A′ (non-Argument) position).

(1)



That these three types of movement were treated on par with one another (important for us, this means that all three movements are seen as being part of narrow syntax) is evident in something like Rizzi's Relativized Minimality (Rizzi 1990), which argues that all three types of movement are constrained by the same locality condition. Rizzi also explicitly recognizes the movement typology as follows (from Rizzi 2001:91):

(2) The typology must involve at least two irreducible distinctions:
(i) between heads and phrases and, in the latter class,
(ii) between positions of arguments (A–positions) and of non-arguments (A′–positions).

More recently, as movement has become a system of features on probes that seek out goals, it is not surprising that a typology of movement has been developed that correlates the distinguishing properties of movement to differences in the features that trigger movement. Here we develop work by van Urk (2015) to guide our investigation of the movement typology.

Van Urk notes differences in A vs. A′-movement and links two of these properties to the nature of the feature on the relevant probe. While A movement is restricted to nominals, A′-movement might target a variety of phrases (PPs, APs, as well as DPs). Further, A movement targets the closest DP, while A-′ movement may pass over other XPs to reach its goal. These two characteristics follow quite naturally from the nature of the features that trigger the movements.[2] A-movement is triggered by the feature D, which crucially is an *inherent* feature of DPs. This explains why the

[2]See van Urk (2015) for details about other distinguishing characteristics of A vs. A′-movement and how these might be handled semantically.

movement applies only to DPs and why it is always the most local DP. A′-movement is triggered by a feature with some discourse property such as *wh*-, or focus. These features optionally attach to a constituent, may attach to a variety of constituents, and will only attach to a constituent that will be targeted by the probing feature. When the probe by-passes intervening constituents, it is because these constituents happen not to have these optionally placed features. The examples below give a feel for how this works. In (3) we see that the trigger feature, D, in T must target the closest DP as any other DP would involve ignoring the intervening D feature. In (4), the *wh* probe will bypass those constituents not bearing a *wh* feature.[3]

(3) A-movement (obligatory, local, DP) – inherent feature
$[_{a[D]}$ They] [$_{T:\boxed{\text{D}}}$ will] $[_{a[D]}$ ~~they~~] put $[_{b[D]}$ it] on $[_{c[D]}$ the table].

(4) A′-movement (optional, less local, XP) – optional (movable) feature
a. $[_b$ The children] hid $[_c$ the books] $[_d$ under $[_e$ the table]]
b. $[_b$ Who] [$_{C:\boxed{\text{wh}}}$] $[_{b[wh]}$ ~~Who~~] hid the books under the table?
c. $[_c$ What] [$_{C:\boxed{\text{wh}}}$ did] the children hide $[_{c[wh]}$ ~~what~~] under the table?
d. $[_d$ Where] [$_{C:\boxed{\text{wh}}}$ did] the children hide the books $[_{d[wh]}$ ~~where~~]?
e. $[_e$ What] [$_{C:\boxed{\text{wh}}}$ did] the children hide the books under $[_{e[wh]}$ ~~what~~]?

Having set up the classic movement typology and introducing van Urk's feature-based account of the typology of A and A′-movement, we now turn to the task of showing how data from Austronesian languages, in particular, Niuean and Malagasy, force us to expand the inventory of movement types. We begin with a study of spinal movement and then introduce C(ategory)-movement.

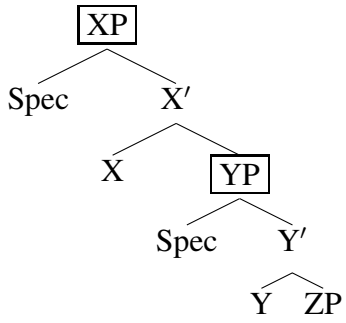
3. Spinal Movement

We notice that the examples of both A and A′-movement that we have seen target only what we will call limbs of the tree. While they do move XPs, they do not appear to target the XPs that appear along the spine (extended projection) of the tree. We can see this distinction in the tree below where the phrases in boxes are XPs that appear along the spine of the tree. Generally when we discuss A and A′-movement, we discuss movement not of these nodes but of material either in Spec positions or complement positions.[4]

[3]This system of features in a sense formalizes in a different manner the Relativized Minimality intervention effects of Rizzi 1990.

[4]Note that the function of ZP depends on whether it is the bottom of the extended projection or the top of an independent extended projection (see Grimshaw 2000 for details). If it is an argument of the lowest member of the extended projection, it is a limb and would be expected to fall into the category of limb movement. In certain views of phrase structure, an object might be in a complement position

(5)



Questions we can ask are what types of spinal XP movement there are and do we find A and A′ correlates. We show that there are A′ correlates in commonly studied languages like English and German, but less common are A correlates and for this we will turn to Niuean.[5]

3.1. Spinal A′-movement

To clarify our expectations for spinal A′ movement, we turn to what sort of features trigger the A′ movement we are familiar with. We expect the movement to be optional (i.e. not be part of the structure of information neutral sentences) since the triggering feature itself is optional. Relatedly, we expect it to alter information structure in some way. Finally, since the triggering feature we have seen is housed in a head high along the extended projection of the V, in the operator domain, we might expect that spinal A′ movement would have a similar landing site. We find these characteristics in VP-fronting, a construction found in English and German, as well as many other languages. Below we include an example from Paciran Javanese (from Vander Klok 2016).[6]

(6) VP fronting

a. ... and $[_{CP}\ [_{VP}$ do their homework] $[_{TP}$ they will __]] ENGLISH

b. $[_{CP}\ [_{VP}$ Das Buch gelesen] $[_{C'}$ hat $[_{TP}$ Peter gestern __]]]
the book read has Peter yesterday
'Peter read the book yesterday' GERMAN

c. $[_{CP}\ [_{VP}$ nggotong watu-ne] $[_{TP}$ cak Kholiq iso __]]
AV.lift rock-DEF Mr. Kholiq CIRC.POS
'Lift the stone, Kholiq can.' PACIRAN JAVANESE

(of a verb with one internal argument) or in a Spec position (of a verb with two internal arguments, as in Larson 1988). In either case, it would be a limb.

[5]Koopman (1984) discusses NP(A)-movement and *wh*(A′)-movement correlates to V movement, but focuses on head movement. We come back to this in section 5.

[6]Abbreviations: ABS: absolutive, AT: Actor Topic (Malagasy), AV: Actor Voice (Javanese), AsplAdv; Aspectual Adverb, CIRC.POS: circumstantial possibility, DEF: definite, DET: determiner, EMPH: emphatic, ERG: ergative LNK: linker, PL: plural, PST: past, SBJV: subjunctive.

A nice fact about the German example is that we can see that the VP appears to have moved to the same position that a *wh* word moves to, i.e. Spec, CP since it triggers the V2 positioning of the auxiliary, *hat*.

3.2. Spinal A-movement

For spinal A-movement, taking limb A-movement as our model, we expect it to be obligatory, information structure neutral, and more local (ideally movement to Spec, TP since the relevant feature will be in T). Finding a case of spinal A movement is more difficult but Austronesian has a nice example of it already documented in the literature – the predicate fronting of Niuean. Massam and Smallwood (1997) have proposed that Niuean moves a predicate XP to the Spec, TP much in the same way that English and many other languages move DP to Spec, TP. Exemplifying data are found in (7) below. The string in (7a) is a case where only the V has moved to sentence initial position. In (7b) we have, however, a case of pseudo noun incorporation (see Massam 2001 for details), where a bare noun phrase has moved with the verb showing that this is a case of VP movement (and not head movement of the V).

(7) Niuean Pseudo Noun Incorporation (Massam (2001:157)[7])

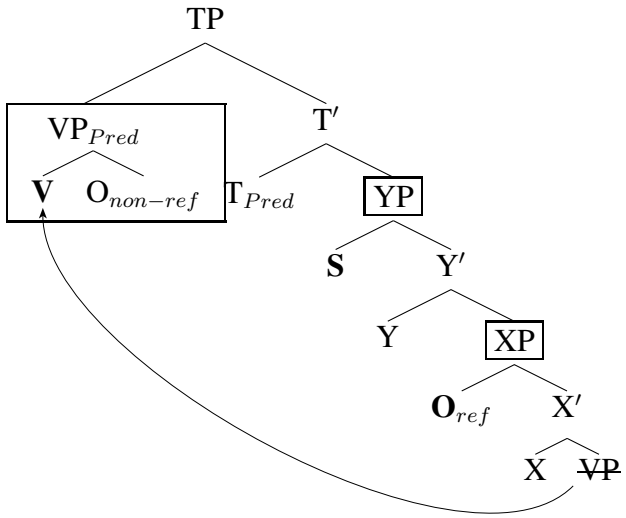
a. [Takafaga t_k] tūmau nī e **ia** [e tau ika]$_k$
hunt aways EMPH ERG he ABS PL fish
'He is always hunting fish.' [V t_k]$_j$ **S** O$_k$ t_j

b. [Takafaga ika] tūmau nī a **ia**
hunt fish always EMPH ABS he
'He is always fishing.' [V O]$_j$ **S** t_j

The analysis is given schematically in the right margin of (7) as well in the tree below. A referential object will move out of the VP and be left behind when the VP remnant moves (as in (7a)). A non-referential object, however, will remain in position and move along with the fronted VP (as in (7b)).

[7]The translation in (7a) has been changed slightly per the first author.

(8)



The analysis would be that a *Pred* feature in T triggers the movement of the VP to Spec, TP. This *Pred* feature has the same characteristics of the A-movement feature in the limb movement system, D. It is inherent to the relevant XP, in this case the VP. Other closer XPs along the spine will be ignored (XP and YP) because of the absence of the *Pred* feature. Further, as well as being local, this movement is obligatory and neutral in terms of information structure.

We now have cases of spinal movement which mirror the A and A′-movement that has been documented of limb movement. This fills out the typology of XP movement to include both limb and spine movement.

(9) Filling in the table (beyond English: Travis & Massam (to appear))

	XP	
	LIMB	SPINE
A′	wh-, focus	VP fronting (English)
A	Derived Subject	VP fronting (Niuean)

Before turning to our next extension of the typology, C-movement, we take a short side trip to see how this feature-based view of movement solves a problem that has been raised for the EPP fronting of predicates in Niuean.

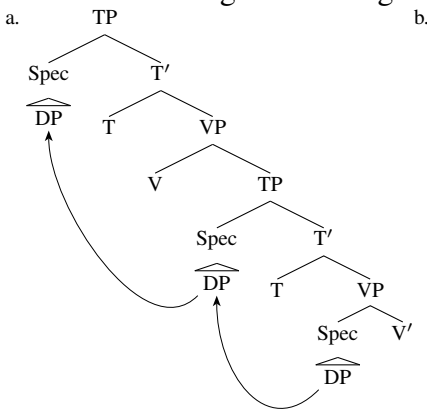
3.3. A Problem Solved

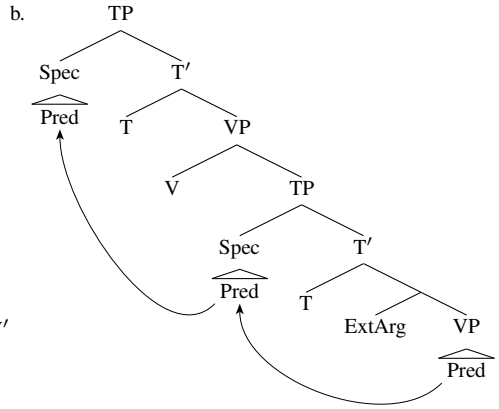
We have seen that the Massam/Smallwood proposal has the predicate moving to the traditional subject position, in fact satisfying the EPP requirement normally ascribed to subjects. The question could be posed whether we would expect this predicate to act like a subject in other ways, for example undergoing Subject to Subject raising (movement of the XP in Spec, TP to a higher Spec, TP position: see Chung 2005). We see how the logic behind this question is developed in the two examples below and the following set of trees in (12).

(10) Spec, TP to Spec, TP raising in a DP EPP language
The child seems ~~the child~~ to be ~~the child~~ sleeping.

(11) Spec, TP to Spec, TP raising in a Pred EPP language (not attested)
V2 $O_{non-ref}$ TAM S V1 ~~V2 $O_{non-ref}$~~ TAM S ~~V2 $O_{non-ref}$~~

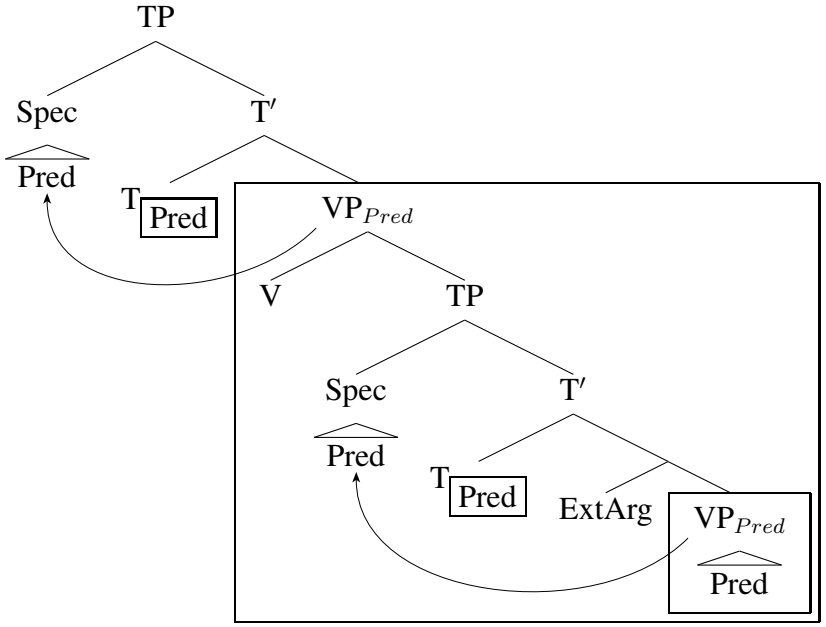
(12) Parallel launching and landing sites

a.


b.


In fact, there is no construction in Niuean that suggests that this is possible. We argue that this question only arises in a grammatical system that sees movement as centered around launching and landing sites. No such question arises in a grammatical system with feature driven movement. This is shown in the tree in (13) below. Since the movement triggering feature is *Pred*, it will only attract the closest Pred and that will be the one that is the complement of T, not the Pred in the lower Spec, TP.

(13) Feature driven Pred movement



In the next section we propose that there is a third type of movement, similar to A-movement in that it targets an inherent feature, but more local because this feature will be a categorial feature that is common across all heads (and therefore projections) along the spine of the extended projection.

4. C-movement

Stepping back from the two types of movement that we have seen cross-cut the limb/spine distinction, we note that one movement (A′-movement) typically triggers movement of an element into the CP domain (the discourse (ω-)domain of Grohmann (2003)). A-movement typically triggers something into the TP (Grohmann's inflectional (ϕ-)domain). One might wonder if there is a type of movement that involves movement within the *v*P domain (Grohmann's thematic (θ-)domain). In this section we discuss just such a movement.

4.1. Evidence for C-movement

Pearson (2000) divides VO languages into two types – *direct* and *inverse*. Direct VO languages achieve VO order via local iterative head movement within the predicate. Inverse VO languages have local iterative roll-up XP movement within the predicate. The evidence he uses to support this distinction involves the order of predicate internal constituents. A list is given below.

(14) Two types of VO languages: Pearson (2000)
- DIRECT languages: *V movement*
  - Double Objects: Indirect Object >> Direct Object
  - Adverbs: Adv 1 >> Adv 2 (e.g. 'always' >> 'well')
  - Object shift: DP_k .... t_k (e.g. Icelandic)
- INVERSE languages: *VP movement*
  - Double Objects: Direct Object >> Indirect Object
  - Adverbs: Adv 2 >> Adv 1 (e.g. 'well' >> 'always')
  - Object shift: t_k .... DP_k (e.g. Malagasy)

We look here at the difference between Object Shift in the two types of languages since we have already encountered movement of the referential object out of the VP predicate in our discussion of Niuean (see (7a)).[8] In Icelandic, the indefinite object appears to the right of the adverbs *eflaust aldrei*, 'doubtless' and 'never' (see (15a), while the definite object appears to the left (see (15b)).[9]

(15) Icelandic (Direct) *leftward* definite object shift
a. Pétur hefur **eflaust aldrei** lesið *bækur*
   Peter has doubtlessly never read books
   'Peter has doubtlessly never read books.'
b. Pétur las *bækurnari* **eflaust aldrei**
   Peter read books-the doubtlessly never
   'Peter doubtlessly never read the books.'

In Malagasy, we find (nearly) the reverse pattern. Indefinite objects must appear to the left of the adverb *haingana* 'quickly' but a definite object may appear to its right.

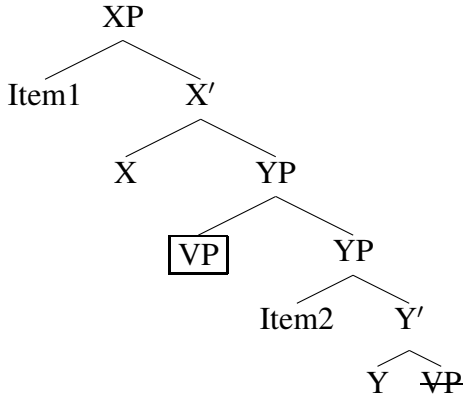
(16) Malagasy (Inverse) rightward definite object shift
a. Nijinja *(ny) vary* **haingana** ny mpamboly
   PST-AT.cut (DET) rice quickly DET farmer
   'The farmer harvested (the) rice quickly.'
b. Nijinja **haingana** *(*ny*) *vary* ny mpamboly
   PST-AT.cut quickly DET rice DET farmer
   'The farmer harvested *(the) rice quickly.'

[8]More work needs to be done to understand the subconstituents of the predicate and exactly what projection is targeted in various movements. For example, if the *Pred* feature targets the 'predicate', then movement of the direct object must be outside of the predicate, but it is not clear exactly what position it moves to. Further, it may be that the object is, in fact, base-generated in this higher position. We leave this for future work but see Massam (in prep) for a non-movement analysis of this construction.

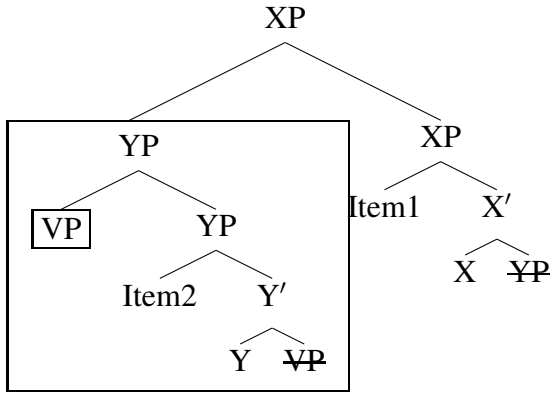
[9]We leave aside the details of what sorts of objects undergo this movement, i.e. whether it is a question of referentiality (Niuean) or definiteness (Icelandic).

To show schematically how items come to be reversed predicate internally in an inverse language, we give the following structures. Here, Item1 scopes over Item2 syntactically (and semantically where relevant) so that Item1 will precede Item2 in their merged positions (shown in (17a)). The second application of iterative roll-up movement will reverse this order (shown in (17b)).[10]

(17) a. Movement 1: VP to (outer) Spec, YP



b. Movement 2: YP to (outer) Spec, XP



This sort of movement is extremely local, basically moving a complement of a head to its (outer) Spec position.[11] Crucially, the spinal A-movement in Niuean that we have discussed above is not this local. Looking back at the tree in (8), we can see that the movement of the VP to Spec, TP passes (at least) two other XP boundaries. We see how the difference plays out in the schema and trees below where we see that Malagasy also has Pred fronting to a sentence initial position accounting for its

[10]This reversal of material through roll-up movement is well-known in Cinque's work (e.g. Cinque 2005, 2014). He labels it pied-piping of the *whose picture* sort since there is movement to the Spec of a projection followed by movement of the whole projection. This is perhaps as close as we get to XP roll-up movement in a language like English where XP movement is generally limb movement.

[11]This clearly violates Abels' prohibition against moving from a complement to a Spec position (Abels 2003), but we would argue that this sort of movement specifically exemplifies this type of locality.

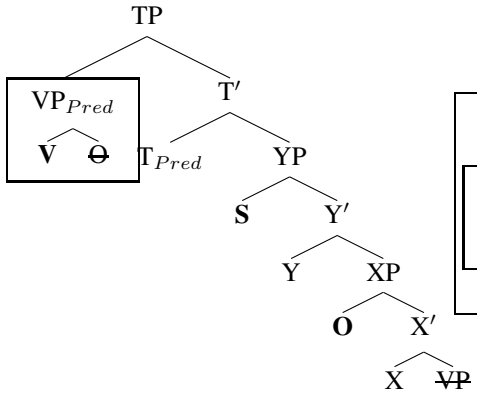
VOS order.[12] In the Niuean example (18) the referential object remains to the right of the subject. This means that Predicate fronting must move over the projections that house the subject as well as the moved object. In Malagasy, on the other hand, as we see in (19), the local roll-up movement moves the predicate to an intermediate position between the moved object and the subject, and then further movement moves the predicate along with moved object to a position in front of the subject, so that definite object is to the left of the subject.[13]

(18) a. **S** Obj_{ref} [V ~~Obj~~] Niuean
b. [V ~~Obj~~] **S** Obj_{ref} ~~[V Obj]~~ VSO_{ref}

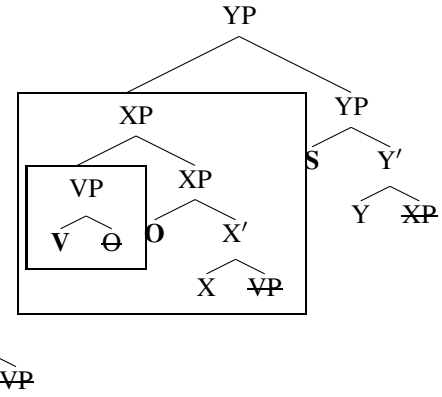
(19) a. **S** [Obj_{def} [V ~~Obj~~]] Malagasy
b. **S** [[V ~~Obj~~] [Obj_{def} ~~[V Obj]~~]]
c. [[V ~~Obj~~] Obj_{def} ~~[V Obj]~~] **S** ~~[[V Obj] [Obj_{def} [V Obj]]]~~ VO_{def}**S**

(20) Niuean vs. Malagasy VP fronting

a. Niuean Pred fronting



b. Malagasy Pred fronting



This roll-up movement that we have seen for Malagasy, then, represents a third-type of movement, adding to the A/A′ movement inventory. We label the third-type of movement C-movement for reasons that will be given in the next section.

4.2. Mechanisms of C-movement

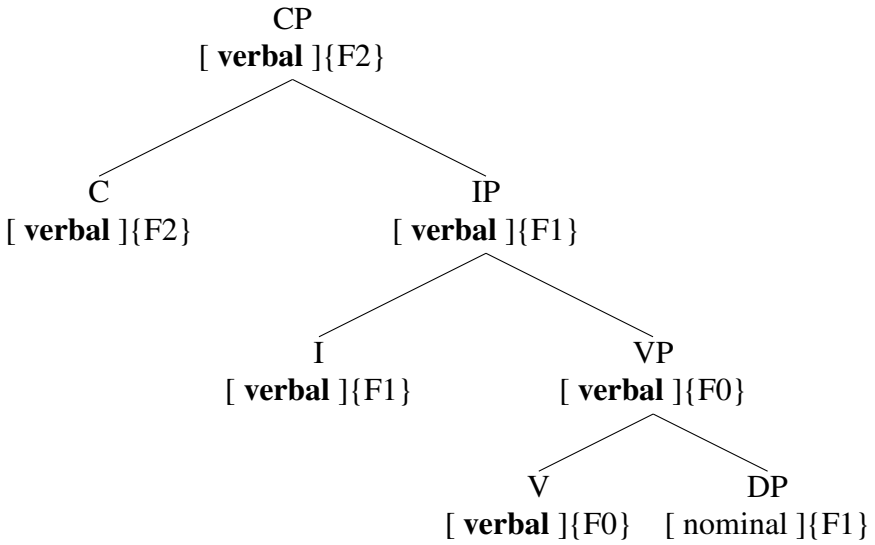
Pearson (2000) links roll-up movement to the need of having a verbal feature in the head of every predicate internal (VP in the more traditional sense) projection. For him there are multiple FP (functional projections) between *v* and V. In order for these

[12] Pearson proposes that this sort of movement only occurs *v*P internally (in order to give a verbal feature to the functional heads). In our account, we are claiming that it continues to apply outside of the *v*P in Malagasy.

[13] Again the question of the relevant distinction between the moved object and the non-moved object arises. See Paul 2009 for a discussion of determiners in Malagasy.

FPs to be identified with a verbal features, there must be either head movement of the V creating a head adjunction checking relationship with the F head, or movement of the VP to the Spec, FP creating a Spec-head checking relationship with the F. This type of view can be shifted to a feature triggered movement view quite easily. We assume that the relevant probing feature is whatever categorial feature it is that all of the heads along the spine of an extended projection share. A tree from Grimshaw (2000) gives a sketch of what we are referring to. In this tree, every head along the verbal extended projection shares the feature *verbal*.

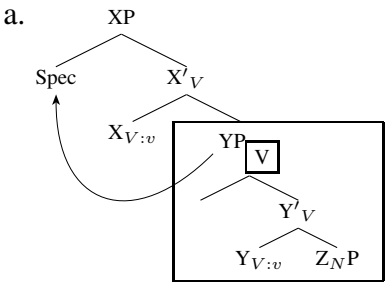
(21) Representation of the verbal extended projection (Grimshaw 2000: 118)



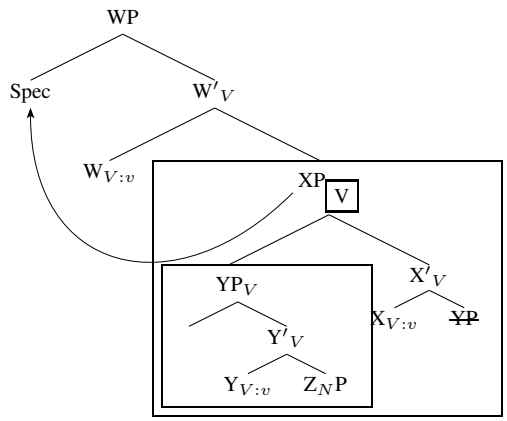
We further assume that every head will also have a probe that looks for a goal with that feature. In the tree below, first the probe in X, which we label v, will target the extended projection feature in its complement, which we label V, and will trigger movement of YP to Spec, XP (perhaps because of an accompanying EPP feature, depending on one's view of movement triggers). At the next step, the probe v in W will target the goal V feature in XP, forcing the movement of XP, which contains YP in its Spec, into Spec, WP.

(22) C-movement

a.



b.



4.3. Summary

We now have seen that spinal movement has, like limb movement, both A and A′-movement, as well as a third type of movement that is even more local than A-movement. The full typology so far is outlined below.

(23) The full XP movement typology

	XP	
	LIMB	SPINE
A′-movement	wh-, focus	VP fronting (English)
A-movement	Derived Subject	VP fronting (Niuean)
C-movement	??	VP fronting (Malagasy)

What is interesting looking at this table is that there is one cell left unfilled, limb C-movement. This gap is also not unexpected. We have proposed that C-movement is triggered by a probe that targets the shared feature of the extended projection. By definition, then C-movement will target the complement of the probing head. In the next section we turn to a possible interaction between spinal C-movement and spinal A-movement.

4.4. Spinal C-movement Feeds Spinal A-movement

In section 3.2, we presented evidence from Niuean for spinal A-movement, but the picture of Niuean word order is not that simple. A closer look (see Massam 2010) shows that the word order in Niuean also exhibits signs of having C-movement lower in the clause. The schema below show that the order of pre-verbal elements is scopal while the order of post-verbal elements is the reverse, as predicted in work such as Cinque (2005)). An example showing the post-predicate order is given in (25), lead-

ing to the conclusion that at least part of the Niuean grammar shows characteristics of it being one of Pearson's *inverse* languages.

(24) a. Pre-verbal: Scopal order
TAM>Neg>Modal

b. Post-verbal: Reverse of scopal order (see below)
Dir>Man>InstrAppl>UQ>ResPron>AsplAdvs>Emphs>Perf>Q

(25) [$_{Pred}$ ke mahua [**mitaki mo e tonu**] **tumau**] e haana a
SBJV work well and C properly always ABS his LNK
fekafekau
servant
'for his servant to always work well and properly.' (Seiter 1980: (61b) p. 23)

It appears, then, that there is C-movement in Niuean to a certain point, but that the output of this C-movement creates the predicate which then undergoes spinal A-movement. This A-movement moves a longer distance, crossing both the referential object and the subject, to land in Spec, TP. This feeding relation is not unexpected. We know that in the system of limb movement, A-movement may feed A′-movement. Further, given a feature triggering system of movement, this simply means that the spinal C-movement probe only appears in heads within the θ-domain of the extended projection and that T contains a spinal A-movement probe.

Having introduced C-movement, we can now ask why this language type has not been a part of the discussion of syntactic movement. The obvious answer is that the languages that were central to syntactic research over the last few decades have not had obvious signs of C-movement. But, as pointed out by Pearson (2000), the roll-up movement of inverse languages bears a family resemblance to head movement, a movement that has been part of the syntactic narrative. In the next section we explore this connection and the status of head movement within the movement typology briefly, leaving many questions to future research.

5. Head Movement

In Pearson's language typology, VO languages divide into those that have predicate internal head movement of the VP and those that have predicate internal XP movement of the VP, giving the same sort of status to the two types of movement (when the X vs. XP parameter is set to one side). In terms of features we can say that for both movements, the probing head targets a feature in its complement and moves the targeted element to a checking position within the projection of that probing head. In the case of XP roll-up movement, the moved element is the whole projection and the landing site is the Spec position. In the case of head movement (also roll-up since

the head that has been adjoined to will be pied-piped in any further movement), the moved element will be a head and it will adjoin to the head containing the probe. If head movement is C-movement of a head, one might ask if the typology can be extended once again to include head movement. In other words, one might ask if there is A-head movement and A′ head movement. This extended typology is given below with some suggested directions for future research.[14]

(26) A (more) complete typology

	XP		X^0	
	Limb	Spine	Limb	Spine
A′-movement	WH, Focus English	VP-fronting English	??	Predicate clefts Yiddish e.g. Koopman (1984)
A-movement	Derived Subject English	VP-fronting Niuean	Clitics Romance e.g. Preminger (2019)	Long Head Movement e.g. Lema and Rivero (1989)
C-movement	*	VP-fronting Malagasy	*	V-movement Italian

6. Conclusion

One of the central goals of syntax has been to understand and circumscribe the properties of movement. The goal of this paper was to ensure that all types of movement are included in this line of investigation. Austronesian languages, in particular, can play an important role in this research as they contribute important evidence for the behaviour of spinal movement, a type of movement either non-existent or, at least, not robust, in the languages that have historically held centre stage. Studies which do not extend to all exemplars of a process run the risk of proposing mechanisms that do not appropriately capture the process thereby skewing our view of the range of syntactic possibilities.

References

Abels, Klaus. 2003. Successive cyclicity, anti-locality, and adposition stranding. Doctoral Dissertation, University of Connecticut-Storrs.

Chung, Sandra. 2005. What fronts? on the vp-raising account of verb-initial order. In *Verb first: On the syntax of verb-initial languages*, ed. Andrew Carnie, Heidi Harley, and Sheila Dooley. Amsterdam: John Benjamins Publishing Company.

Cinque, Guglielmo. 2005. Deriving Greenberg's Universal 20 and its exceptions. *Linguistic Inquiry* 36:315–332.

Cinque, Guglielmo. 2014. Again on tense, aspect, mood morpheme order and the "Mirror Principle". In *Functional structure from top to toe: The cartography*

[14] Koopman (1984), in fact, proposes an A v.s A′ (or, in her terms, NP movement vs. *wh*-movement) distinction between V-movement to a T-like position and to C-like position respectively. Her findings need to be central to any continued work on this topic.

of syntactic structures, ed. Peter Svenonius, volume 9, 232–265. Oxford, UK: Oxford University Press.

Grimshaw, Jane. 2000. Locality and extended projection. In *Lexical specification and insertion*, ed. Peter Coopmans, Martin Everaert, and Jane Grimshaw, 115–134. Philadelphia, Pennsylvania: John Benjamins Publishing Company.

Grohmann, Kleanthes K. 2003. *Prolific domains: On the anti-locality of movement dependencies*. Amsterdam, The Netherlands: John Benjamins.

Koopman, Hilda. 1984. *The syntax of verbs*. Dordrecht, The Netherlands: Foris Publications.

Larson, Richard. 1988. On the double object construction. *Linguistic Inquiry* 19:335–392.

Lema, José, and Maria Luisa Rivero. 1989. Long head movement: ECP vs. HMC. In *Proceedings of the North East Linguistic Society*, ed. Juli Carter, Rose-Marie Déchaine, Bill Philip, and Tim Sherer, 333– 347.

Massam, Diane. 2001. Pseudo noun incorporation in Niuean. *Natural Language and Linguistic Theory* 19:153–197.

Massam, Diane. 2010. Deriving inverse order: The issue of arguments. In *Austronesian and theoretical linguistics*, ed. Raphael Mercado, Eric Potsdam, and Lisa deMena Travis. John Benjamins Publishing Company.

Massam, Diane. in prep. *Niuean: Predicates and arguments in an isolating language*. Oxford, UK: Oxford University Press.

Massam, Diane, and Carolyn Smallwood. 1997. Essential features of predication in English and Niuean. In *Proceedings of North East Linguistic Society*, ed. Kiyomi Kusumoto, 263–272. McGill University: Graduate Linguistic Student Association.

Paul, Ileana. 2009. On the presence versus absence of determiners in Malagasy. In *Determiners: Universals and variation*, ed. Jila Ghomeshi, Ileana Paul, and Martina Wiltschko, 215–242. John Benjamins.

Pearson, Matthew. 2000. Two types of VO languages. In *The derivation of VO and OV*, ed. Peter Svenonius, 327–363. Amsterdam, The Netherlands: John Benjamins Publishing Company.

Preminger, Omer. 2019. What the PCC tells us about "abstract" agreement, head movement, and locality. *Glossa* 4:1–42.

Rizzi, Luigi. 1990. *Relativized minimality*. Cambridge, Massachusetts: MIT Press.

Rizzi, Luigi. 2001. Relativized minimality effects. In *The handbook of contemporary syntactic theory*, ed. Mark Baltin and Chris Collins, 89–110. Oxford, UK: Blackwell Publishers Ltd.

Seiter, William J. 1980. *Studies in Niuean syntax*. New York: Garland Press.

Travis, Lisa, and Diane Massam. to appear. A typology of VP-fronting. In *Parameters of predicate fronting*, ed. Vera Lee-Schoenfeld and Dennis Ott. Oxford University Press.

van Urk, Coppe. 2015. A uniform syntax for phrasal movement: A case study of Dinka Bor. Doctoral Dissertation, Massachusetts Institute of Technology.

Vander Klok, Jozina. 2016. Diagnosing VP-ellipsis in Javanese: Evidence for a non-

movement and a movement account. In *the Proceedings of the 22nd meeting of the Austronesian Formal Linguistics Association (AFLA22)*, ed. Henrison Hsieh, 202–219. Canberra: Asia-Pacific Linguistics Open Access College of Asia and the Pacific The Australian National University.