

# Analysing Aux-O-V disharmony in Niger-Congo: The case of Tunen

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## 1 Introduction

### 1.1 Aux-O-V as a disharmonic word order

- Assumed in Greenbergian tradition that there is a cross-linguistic preference for **harmonic word order** (Greenberg 1963; Hawkins 1983; Dryer 1992), i.e. consistent headedness
- Aux-O-V word order is therefore surprising: it is a case of **disharmonic word order**; ( or ‘mixed clausal headedness’ Sande et al. 2019): we have a head-initial TP, but a head-final VP
- The Aux-O-V type of disharmony is the only predicted possible type within the clausal domain according to the Final-Over-Final Condition proposed syntactic universal (1):

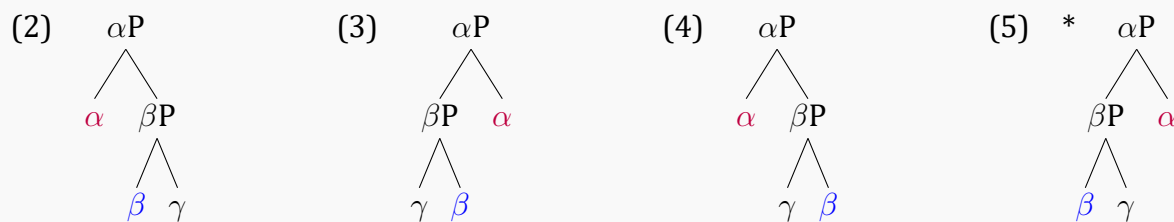
#### FOFC

#### (1) The Final-Over-Final Condition (FOFC) on disharmonic structures:

“\* $[\alpha P [\beta P \beta \gamma] \alpha]$ , where  $\beta$  and  $\gamma$  are sisters and  $\alpha$  and  $\beta$  are members of the same extended projection”

or, in other words: “A head-final phrase  $\alpha P$  cannot immediately dominate a head-initial phrase  $\beta P$ , if  $\alpha$  and  $\beta$  are members of the same extended projection.”

(Holmberg 2017:1; see also Biberauer 2017:190, Biberauer et al. 2014)



⇒ Aux-O-V falls into disharmonic type (4);  $\alpha P$  = head-initial Aux/TP;  $\beta P$  = head-final VP

⇒ FOFC predicts that we can't derive the alternative disharmonic type (5), but the availability of (4) means such structures need to be derivable

⇒ FOFC also makes predictions about diachrony: Headedness change to head-finality starts at the bottom of the extended projection (in this case, the VP)

### 1.2 Word order variation in Niger-Congo

- Most Niger-Congo languages have **SVO** order (*Fig.0*); the canonical **SOV** language is verb-final
- But **Tunen** (Bantu A44, ISO 639-3 tvu, Cameroon) is unusual in having S-Aux-**O-V-X** word order (Dugast 1971; Bearth 2003; Mous 1997, 2003, 2005) (6)<sup>1</sup>

<sup>1</sup>See end of handout for glosses. Unless otherwise stated, transcriptions/glosses are unchanged from the sources.

- (6) a. bá-ndɔ́ bɛ-kana **tála** ɔ́ yɔ́kɔ́  
 SM.2-PRES 8-basket put PREP 7.chair  
 ‘They are putting baskets on the chair.’
- b. bá-ná bɛ-kana **tála** ɔ́ yɔ́kɔ́  
 SM.2-PST2 8-basket put PREP 7.chair  
 ‘They put baskets on the chair.’  
 (Tunen, Mous 1997:125, adapted)

- Subject marker (SM) and tense marker (TAM) separated from the verb by the object
- While Tunen is SOV, it is not verb-final: obliques follow the verb (SOVX)
- This order is consistent across TAM (Mous 2005) and IS contexts (Kerr submittedb); found with lexical+pronominal O in both matrix (6) and embedded clauses (7)<sup>2</sup>

Values		
◆	OV	712
●	VO	705
□	No dominant order	101

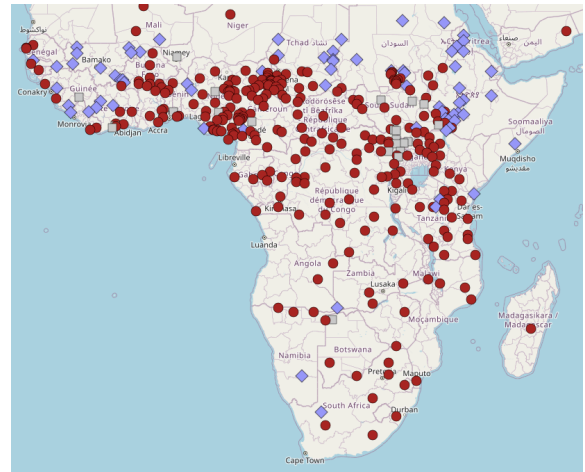


Fig.0. WALS feature 83A (Dryer 2013)<sup>3</sup>

- (7) méndɔ́ **manyá** ɔ́wá Matéŋɛ aka hiəfulə **fanak**.  
 /mɛ-<sup>H</sup>ndɔ́ **manyá** ɔ́wá Matéŋɛ a-ka hɛ-əfulə **fana-aka**/  
 SM.1SG-PRES know REL.1 1.Martin SM.1-PST3 19-book read-DUR  
 ‘Je sais que Martin a lu le livre.’  
 ‘I know that Martin has read the book.’

[JO 905]

- NB: Tunen is classified as Narrow Bantu but is close to Bantu homeland, bordering non-Bantu Bantoid (subgroup of Benue-Congo, itself a subgroup of Niger-Congo); first branch of Bantu
  - Compare the canonical agglutinative Bantu verb (8); all other Bantu Aux-V-O<sup>4</sup>
- (8) Wa-toto w-ote **wa-na-fundish-w-a** Ki-swahili.  
 2-children 2-all SM.2-PRES-teach-PASS-FV 7-swahili  
 ‘All (the) children are taught Swahili.’ (Swahili, East Africa; van der Wal 2015:2, adapted)

### 1.3 Significance and research questions

- S-Aux-O-V-X is a disharmonic word order and a typologically rare word order pattern
- As other languages with S-Aux-O-V-X word order are found across West/Central Africa (NB: often in alternation with SVO), S-Aux-O-V-X has raised questions about the reconstruction of Proto-Niger-Congo syntax and the role of language contact/areal diffusion, and is thus of interest to Africanists and historical linguists

<sup>2</sup>My Tunen field data are cited with the surface form, underlying form with morpheme breaks, original French translation as agreed with consultants, additional English, consultant initials and UID for database entry in [ ] brackets.

<sup>3</sup>Totals are for the whole world; map cropped to sub-Saharan Africa.

<sup>4</sup>See §2 re: Ewondo/Nyokon partial Aux-O-V; Ewondo restricted to pronominals, Nyokon in TAM-based alternation with SVO. See van der Wal (2015), Kerr et al. (to appear) and references therein for proposal that information structure rather than O status can have a greater impact on determining word order in various core Bantu.

- S-Aux-O-V-X is also of interest to theoreticians, as an instantiation of FOFC-compliant disharmonic word order within the extended projection of V
- Today's focus: Developing the first formal analysis for Tunen Aux-O-V with O-V-X

## 1.4 My standpoint

- PhD position on Tunen as part of the Bantu Syntax and Information Structure (BaSIS; PI Jenneke van der Wal) project at Leiden University, 2018-2023
- Tunen data from fieldwork in Ndikiniméki/Yaoundé, Cameroon, Feb-May 2019 & Oct 2021-Feb 2022 (+ remote elicitation in 2023, + study of data from older sources Dugast 1971, 1975; Mous 1997, 2003, 2005, 2014; Isaac 2007)
- Methodology = elicitation in controlled discourse context + natural speech, using BaSIS project methodology (downloadable at <https://bantusyntaxinformationstructure.com/methodology/>)
- + visiting short-term PhD fellowship Sep-Dec 2022 on Consequences of Head-Argument Order on Syntax (CHAOS/C08; PI Gisbert Fanselow†) project as part of SFB 1287 Limits of Variability in Language at Potsdam University, looking at headedness and disharmony across languages

### Outline

- §1 Introduction
- §2 Overview of S-Aux-O-V-X word orders and related patterns
- §3 Derivations of Aux-O-V disharmony
- §4 Challenges for discussion
- §5 Conclusion

## 2 Overview of S-Aux-O-V-X word orders

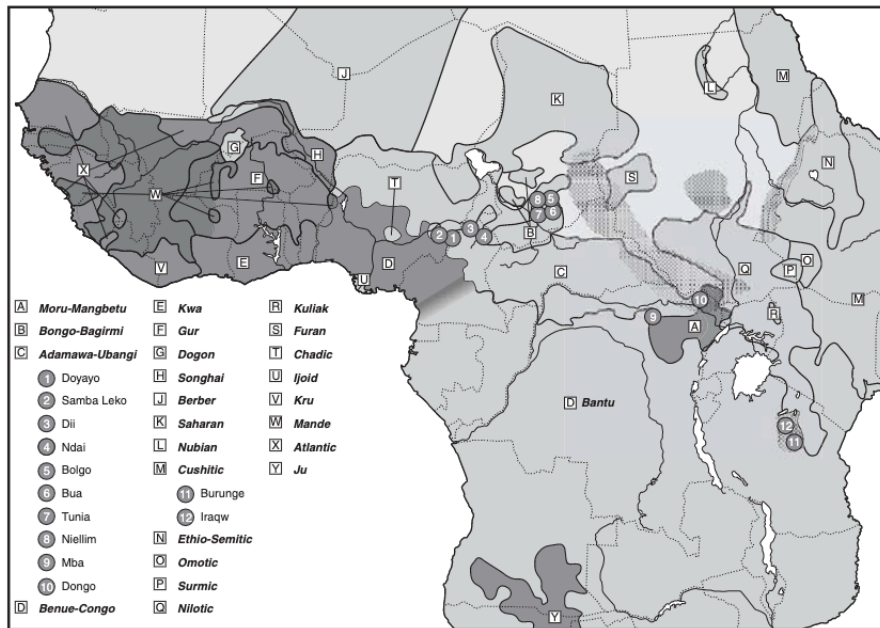
- S-Aux-O-V-X patterns like what we saw for Tunen in (6) are rare, but have been found in different languages in West/Central Africa, with comparable orders in the area and outside Africa:

### (9) a. S(-Aux-)O-V(X) word orders in Africa

**Mande** languages S-Aux-O-V-X (Claudi 1993; Gensler 1994; Nikitina 2011); Senufo branch of **Gur** S-Aux-O-V-X/SVO (Gensler 1994); **Kru** languages S-Aux-O-V-X/SVO (Gensler 1994); **Kisi** (Atlantic Childs 1988, cited in Gensler 1994); **Benue-Congo** (*Tunen* (Bantu A44, Cameroon) S-Aux-O-V-X; (Dugast 1971; Mous 1997, 2005)) *Nyokon* (Bantu A45, Cameroon) S-Aux-O-V-X/SVO; (Mous 2005); *Ewondo* (Bantu A70, S-Aux-O-V-X for pronoun objects only; Redden 1980, cited in Gensler 1994); *Tikar* (Bantoid, Cameroon) S-Aux-O-V-X/SVO (Stanley 1997); **Eastern Songhay** (*Zarma*, *Gao Songhay*; Creissels 2005; Güldemann 2008a); parts of **Adamawa-Ubangi** (Güldemann 2008a); **Moru-Mangbetu** (Güldemann 2008a); some **Khoisan** (e.g. *!Ora* S-Aux-O-V#) and **southern Cushitic** (Güldemann 2008a)

### b. Other SOV word orders in Africa

**Ijoid** languages in Southern Nigeria S-X-O-V-Aux# (Williamson 1965; Givón 1975); **Dogon** languages in Mali SOV, *Bangime* (**isolate**, Mali) SOV/SVO; (no longer spoken) *Berbice Dutch creole* based on Kalabari (Eastern Ijo) and Dutch OV→VO development (Kouwenberg 1992)



**Figure 1:** Map of areas in Africa in which S-O-V-X word order is found (Güldemann 2008a:163)

c. **Other comparable word orders outside of Africa**

South Sámi (**Uralic**): S-Aux-O-V# (Schmidt in prep.); **Germanic** (Indo-European) V2 languages with S-Aux-O-V “or so-called verb-projection raising/VPR structures which involves a head-initial TP and a head-final VP”: *Swiss German dialects, Dutch dialects, spoken Afrikaans; Middle Dutch, Old High German, Old English, Old Norse* (Sheehan 2013:410); **Kashmiri** (Indo-European) (Gensler and Güldemann 2003); various languages with S-O-V-X word order mentioned in Gensler and Güldemann (2003), to which Potsdam C08 project adds *Cabecár* (**Chibchan**): S-O-V-X (Stavros Skopeteas p.c.)

- Note that there is empirical variation in S-Aux-O-V-X word order patterns in West/Central Africa  
 What counts as Aux? Did it derive from a verb or something else?  
 What counts as O? (single vs multiple, pronominal only or all nominals, locative objects?)  
 Does S-Aux-O-V-X alternate with SVO or is it robust across TAM/IS contexts?

(10) a-kad            mə dzɔ **vɔ́**.  
 he-do.usually me it give  
 ‘He usually gives it to me.’ (Ewondo (Bantu),  
 Redden 1980:167, cited in Gensler 1994:5)

(11) mòolu ye kinoo **dii** n na.  
 people PAST food give me to  
 ‘The people gave me food.’ (Mandinka  
 (Mande); Creissels 1983:134, cited in Gensler  
 1994:3)

(12) a. **ń** **nìngéé** fíí-mà **í** **má**.  
 1S cow give-TAM 2S PO  
 ‘I will give you a cow.’

b. **ń** **í** kíf-mà **nìngéé** **rá**.  
 1S 2S give-TAM cow PO  
 ‘I will give you a cow.’  
 (Soso (Mande), Creissels 2005)

- Today: Use analyses of Aux-O-V in these languages as starting point for analysis of Tunen
- But noting that Aux-O-V can derive from different underlying structure, as argued in Africanist literature (see e.g. Claudi 1993; Creissels 2005) and in theoretical syntax literature:

“Aux-O-V is relatively common as a surface order, though this does not mean that all surface strings have the same underlying syntax. In Germanic, Aux-O-V arises as a result of V2, which by hypothesis involves movement of the finite auxiliary to C or verb projection raising in embedded clauses. **The fact that the basic word order in Niger Congo is S-Aux-DO-V-IO strongly suggests that OV is derived by object movement, in an otherwise head-initial grammar.** A similar argument can be made for Iraqw, which actually has a number of different object positions with different case and agreement properties.’

(Sheehan 2013 [NWP version p149], emphasis added)

### 3 Derivations of disharmony

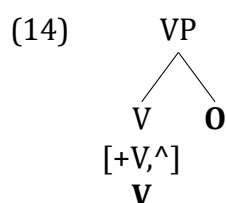
#### 3.1 FOFC literature roll-up account for Aux-O-V in Germanic

- SAuxOV patterns are found in embedded clauses in various Germanic varieties (see Roberts 2019 and references therein), analysable as verb projection raising; (13a)

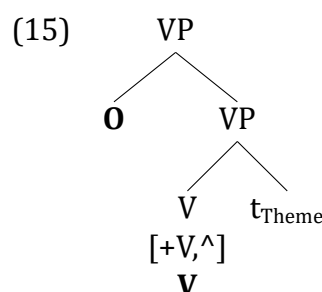
(13) a. ...das de Hans wil es huus **chaufe**.  
 that the Hans want.3SG.PRES a house buy.INF  
 ‘...that Hans wants to buy a house.’  
 (Zurich German; Haegeman & van Riemsdijk 1986, cited in Roberts 2019:115)

b. ...az Jonas vil a hoyz **koyfn**.  
 that Jonas want.3SG.PRES a house buy.INF  
 ‘...that Jonas will buy a house.’  
 (Yiddish; Haider 2013:119 citing Vikner 2001:66, cited in Roberts 2019:116)

- FOFC approaches to S-Aux-O-V# in Germanic have derived this mixed clausal headedness through a formal caret feature ^, more precisely a feature/EPP feature that can appear on a head and triggers roll up of its complement to the specifier (see e.g. Biberauer et al. 2014)
- So [+V, ^] triggers movement of the theme complement to the specifier of VP, deriving OV (15) from a Kayneian VO base (i.e., Spec-Head-Comp; Kayne 1994) (14)

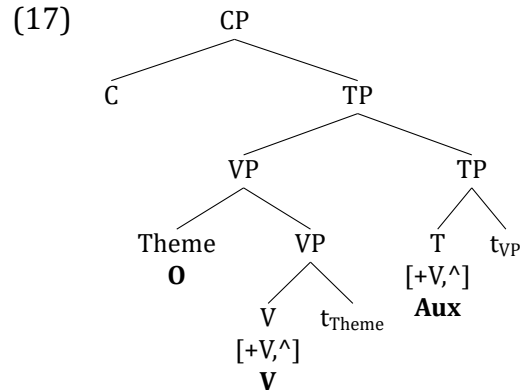
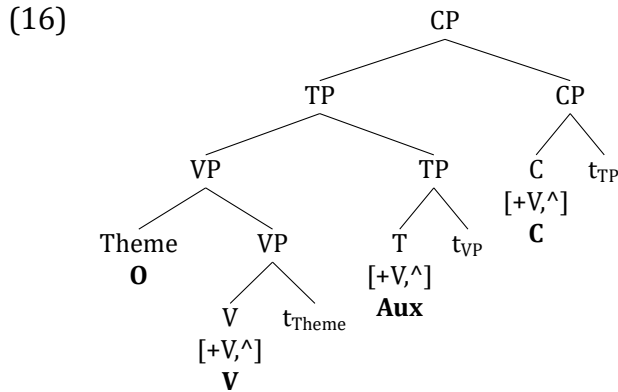


⇒



- The feature ^ is specific to the given category (here, V) and therefore FOFC applies within an extended projection. The feature ^ starts at the bottom of the projection (Start At The Bottom Generalization; SATBG)

- If all heads have  $\wedge$ , then fully head-final language, with roll-up through the clausal spine (16)
- Disharmonic order derived when the  $\wedge$  feature is on lower heads but not higher ones, resulting in partial roll-up (e.g. (17)). Here, there is a ‘stop/go restriction’: only contiguous heads from the lowest one can trigger roll-up, thus ruling out FOFC non-compliant orders of the kind in (5)



### 3.2 Accounts of Aux-O-V in West Africa

- Koopman (1984) = earliest generative analysis (to my knowledge) of S-Aux-O-V-X vs SVO alternation in West Africa, for Vata and Gbadi (Kru), based on V-to-T movement when no Aux
- Sande et al. (2019): ‘strict’ vs ‘fake’ SAuxOV, based on whether verb phrase is underlying head-initial (VO) or head-final (OV), as illustrated for 4 languages of West Africa (Table 1)

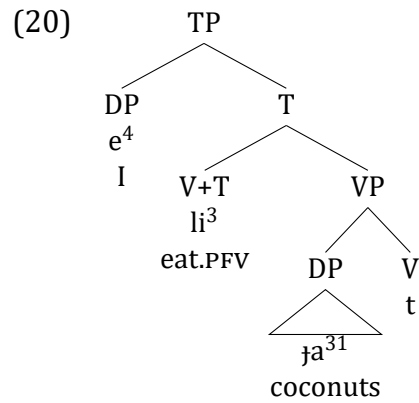
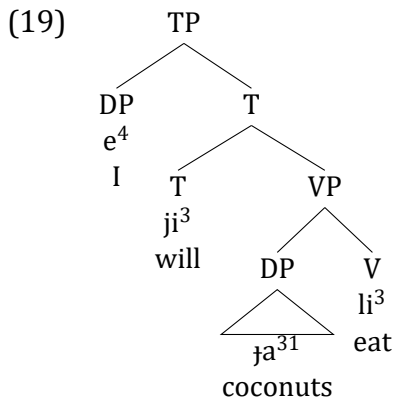
**Table 1:** Sande et al. (2019)’s structural comparison of 4 SAuxOV languages in West Africa

	Type	O V	Gen N	PP	V Adv	Vmove?
Guébie	Strict	OV	GenN	PostP	Adv-V	Yes
Dafing	Strict	OV	GenN	PostP	V-Adv	No
Gwari	Fake	VO	GenN	Pre/Post	V-Adv	Yes
Fongbe	Fake	VO	NGen	Pre/Post	V-Adv	?

- In Sande et al. (2019)’s (non-Kayneian) analysis of Guébie (Kru, Côte d’Ivoire), a “strict SAuxOV” language, S-AUX-O-V is taken to be the in-situ syntax (with a base-generated head-final VP), while S-V-O derives from V to T movement:<sup>5</sup>

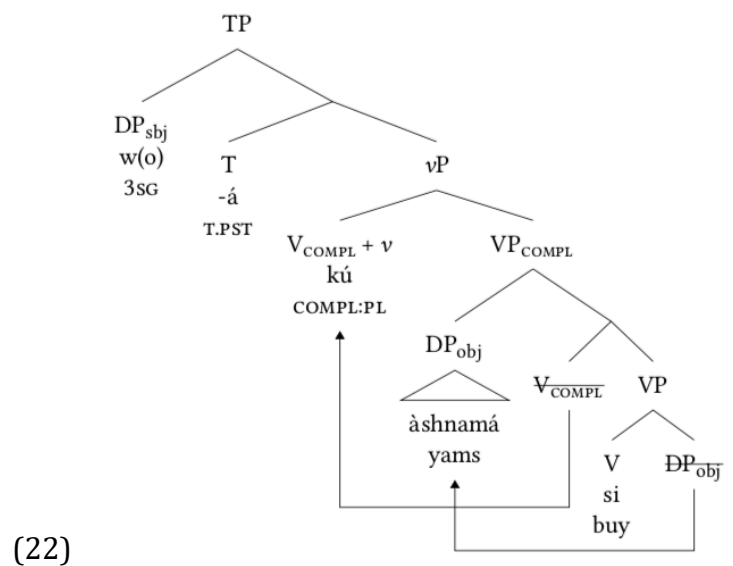
- (18) a. e<sup>4</sup>      ji<sup>3</sup>    ja<sup>31</sup>    li<sub>3</sub>  
 1SG.NOM    FUT    coconuts    eat  
 S            Aux    O            V  
 ‘I will eat coconuts.’  
 Guébie (Kru; Sande et al. 2019:668)
- b. e<sup>4</sup>            li<sup>3</sup>            ja<sup>31</sup>  
 1SG.NOM    eat.PFV    coconuts  
 S            V            O  
 ‘I ate coconuts.’  
 Guébie (Kru; Sande et al. 2019:672)

<sup>5</sup>For the purposes of comparing derivations on this handout, traces can be understood as basically notationally equivalent to a strikethrough (example) or movement arrows. The superscript numbers in the Guébie examples indicate tones.



- Empirical prediction: If V always moves to T when it can (i.e. when T is not filled by a tense marker/auxiliary), then should always get SVO when there is no aux
  - This is the structural explanation for West African S-Aux-O-V-X/SVO word order alternations conditioned by TAM (following Koopman 1984)
  - NB: Because the empirical prediction doesn't always hold, Sande et al. (2019) stipulate a null auxiliary  $\emptyset$  in certain constructions (serving to block V to T movement)
- But in Gwari (Nupoid), general head-initial properties leads Sande et al. (2019) to propose a head-initial VP, which means that there needs to be not just movement of V but also **object shift** in order to derive S-Aux-O-V:

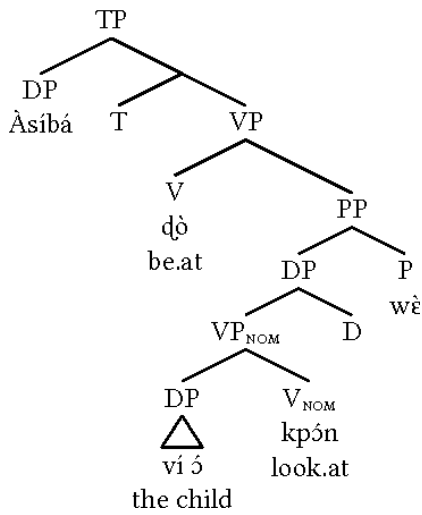
(21) w-a kú àshnamá si.  
 3sg-T.PST COMPL:PL yams buy  
 'S/he has bought yams.'  
 (Hyman and Magaji 1970:57, cited in Sande et al. 2019:680)



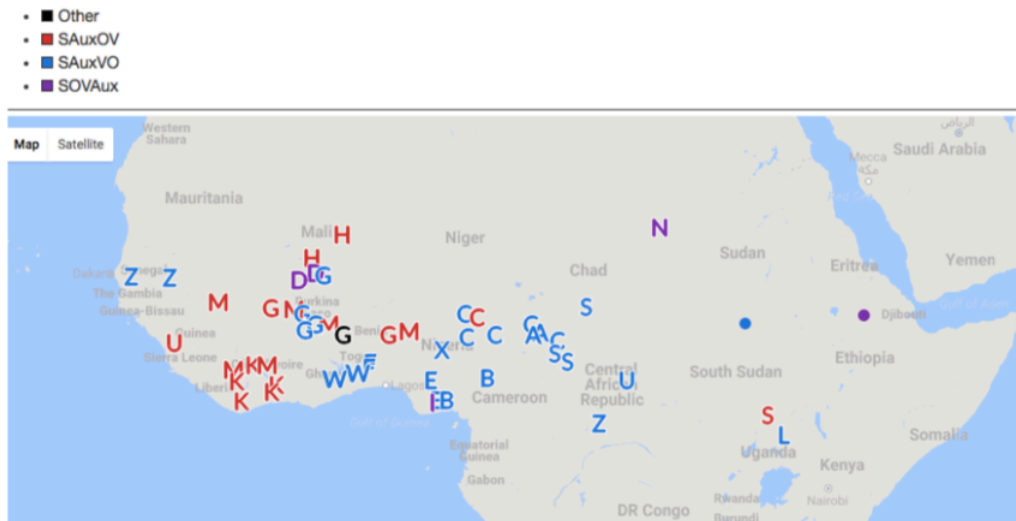
- S-Aux-O-V in Fongbe (Kwa) is similarly analysed as 'fake', this time resulting from a head-initial VP with a nominalised complement (this is supported by morphological evidence):

(23) Ùn è nú dù jí.  
 1sg fall thing eat.nom on  
 'I began to eat.' (Lefebvre and Brousseau 2002: 215, cited in Sande et al. 2019:677)

(24) Àsibá dò [[ví ò kpón] wē ]  
 Asiba be.at child DEF look.at.NOM POST  
 'Asiba is looking at the child.' (Lefebvre and Brousseau 2002:215, cited in Sande et al. 2019:685)



⇒ While all these languages have S-Aux-O-V word orders, they are argued to derive from different underlying structures, so S-Aux-O-V is not a uniform phenomenon



**Figure 2:** Map showing distribution of S-Aux-O-V word order (in red) in 54 languages of Macro-Sudan Belt (Sande et al. 2019). C= Chadic, G = Gur/Senufo, H = Songhay, K = Kru, M = Mande, U = Mel. NB: The Benue-Congo languages Tunen, Nyokon, Tikar and Ewondo were not in their sample.

- Parameters of variation: base-generated OV or VO? V-to-T movement? Nominalised complement?

### 3.3 Tunen headedness

- Does Tunen have head-final syntax beyond the VP?
- Things to test: prepositions vs postpositions, Adv-V vs V-Adv, C-Comp vs Comp-C, etc.
- As Sande et al. (2019) discuss, there is crosslinguistic variation within Niger-Congo: some languages with S-Aux-O-V-X order show head-final properties, e.g. postpositions in Mande; Gen-N order, Adv-V order; others pattern as head-initial



- Ijo languages and Dogon (both SOV, both doubtful as Niger-Congo) are consistently head-final
- But Tunen, Nyokon are consistently head-initial (aside from OV)<sup>6</sup> (Table 2)

**Table 2:** Headedness properties of Tunen and its neighbour Nyokon (Kerr submittedb)

Property	Tunen result	Nyokon result
Order of N and Mod	N-Mod	N-Mod
Adposition type	Prepositions	Prepositions
Order of N and Poss (pronoun)	Poss-N	Poss-N
Order of N and Gen	N-Gen	N-Gen
Canonical order of O and V	OV	OV/VO
Order of Aux and V	Aux-V	Aux-V
Order of O and V in imperatives	VO (V-IO-DO)	VO (V-DO-IO)
Order of C and Comp	C-Comp	C-Comp
Order of Cop and Compl	Cop-Compl	Cop-Compl
Order of V and manner adverb	V-Adv	V-Adv
Canonical adjunct position	SOVX	SOVX/SVOX
Low subjects (VS)?	✗	✗

- Examples of head-initiality: nominal domain (26)<sup>7</sup>, Cop-Compl (27), prepositions (27):

(26) tóoye **tobanána** tóté<sup>L</sup>té tófititiə tófandε.

/tóoye **tɔ-banána** tɔ-té<sup>L</sup>téá tɔ-<sup>H</sup>fititiə tɔ-<sup>H</sup>fandε/

13.DEM.PROX 13-banana 13-small 13-black 13-two

‘ces deux petites bananes noires’ (‘these two small black bananas’)

[JO, 844]

(27) Context: Where are you?

mε **lε** ɔ nioni.

/mε **léá** ɔ nε-oní/

SM.1SG be PREP 5-market

‘Je suis au marché.’

(‘I am at the market.’) [Tunen; PM 102]

(28) Context: ‘Where are you?’

mu **nə** a nyí.

SM.1SG COP PREP market

‘I am at the market.’ [Nyokon; RA 94]

- Compare e.g. SAux[OV]<sub>NOM</sub> V in Kru and Mande (29) vs SAuxV[OV]<sub>NOM</sub> in Benue-Congo (30):

<sup>6</sup>Table 2 shows Poss-N in addition to N-Gen order, with Poss-N the order found with a possessive pronoun (e.g. *yamía isá* ‘my father’). As discussed in Mous (2005), there is evidence that the head-initial type N-Poss is the historic order. Note also that while there are sentence-final question particles, following Biberauer (2017) I do not take this to be evidence for head-finality, in that such particles are likely not syntactic heads.

<sup>7</sup>Note that Roberts (2019:177) writes that the combination of C-Aux-O-V with Dem-N-Num “does not seem to be attested”, but these data show that this is the order combination found in Tunen (though Roberts elsewhere specifies Dem-(Rel)-N-Num as the relevant subtype).

- (29) a. e<sup>4</sup>      ji<sup>3</sup> [ja<sup>31</sup>      la<sup>2</sup> li-li-je<sup>3.2.2</sup> ] koci<sup>23.1</sup>  
 1SG.NOM FUT coconuts of eat-RED-NMLZ start  
 ‘I will start eating coconuts.’      Guébie (Kru), (Sande et al. 2019:672)
- b. wúrú-<sup>1</sup>ú <sup>1</sup>ní [fwó-<sup>1</sup>ó      ñì      mí-í ] dàmna  
 dog-DEF PFV meat-DEF [unglossed] eat-DEF begin  
 ‘The dog began eating the meat.’      Dafing (Mande); (Sande et al. 2019:675)

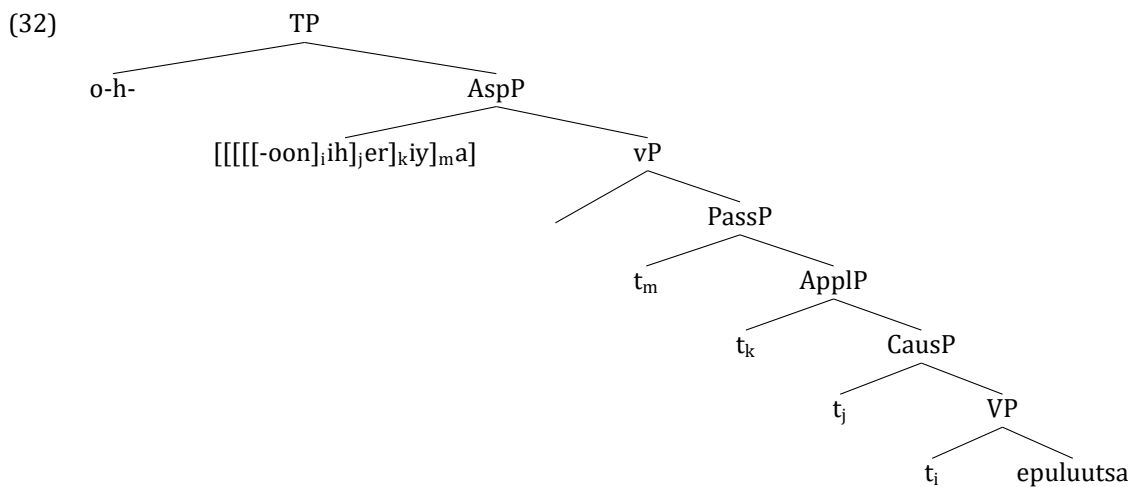
- (30) miokó alé óso [ɔ beŋgwete ɔ obáta].  
 miokó a-le óso [ɔ be-ŋgwete ɔ ɔ-báta ]  
 chicken SM.1-NEG can PREP 8-potato PREP INF-collect  
 ‘The chicken wasn’t able to collect up her potatoes.’      Tunen (Benue-Congo); (Kerr submittedb)

### 3.4 Analyses of the Bantu verb

- Today’s focus: how to derive S-Aux-O-V-X in Tunen (Bantu, Cameroon)
- Relevant point of departure: previous structural analyses of Narrow/Core Bantu, e.g. van der Wal (2009, 2022) on Makhuwa-Enahara (Bantu P31, Mozambique) and Bantu more broadly<sup>89</sup>

- (31) Nlópwaná o-h-oon-ih-er-iy-á      epuluutsa  
 1.man      SM.1-PFV.DJ-see-CAUS-APPL-PASS-FV 9.blouse  
 ‘The man was shown the blouse.’      (Makhuwa (Bantu), van der Wal 2009:168-9)

- The basic idea: V head-moves up iteratively to get derivational suffixes, but stops before T
- Supporting evidence: Bantu derivational affixes are **suffixal** and reflect ordering of spine



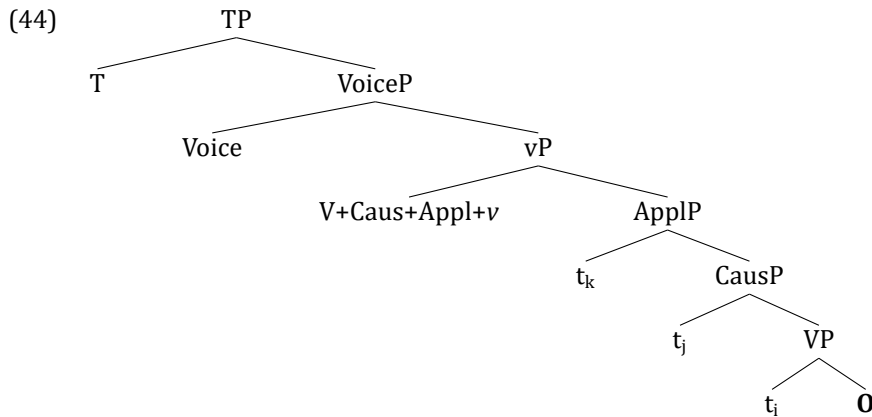
<sup>8</sup>Other relevant analyses of Bantu: Zeller (2013) approach likewise arguing for head movement of V, on the base of Bantu data; Buell (2005)’s alternative analysis, with object dislocation out of vP followed by remnant phrasal movement for Zulu (Bantu, South Africa).

<sup>9</sup>FV = final vowel, a vowel that can convey aspectual information.

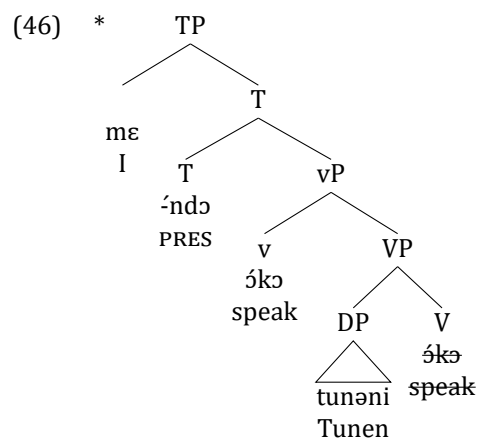
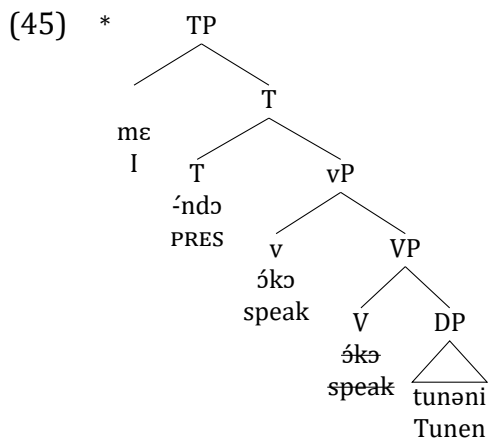




- If following analysis of other Bantu (van der Wal 2009, 2022), this means that V must move to a higher position from its base position in order to derive suffixal causative etc.
- but V must be lower than VoiceP to get prefixal middle *bé-*, and V must be lower than T/Neg to get S-TM-O-V order



- But unlike for Makhuwa, this is not enough - we need to get OV spell-out
- Note if there is V movement (and no additional stipulation), the object cannot be in the base position (unlike Guébie) – regardless of whether you have a head-initial (45) or head-final (46) VP underlyingly – because then the structure would be linearised as S-Aux-V-O, not S-Aux-O-V:<sup>12</sup>



- So to get OV, we also need movement of the object (as suggested by Sheehan 2013 above)<sup>13</sup>

### 3.7 On object movement

- Can we find a trigger for object movement? cf Güldemann (2008b) on information status vs placement of objects in Benue-Congo; Struik and Van Kemenade (2020); Struik (2022) on importance of IS in conditioning object placement in diachrony of Germanic varieties (VO base, OV when O moves due to givenness)

<sup>12</sup>Asterisks here indicate incorrect structural derivations, i.e. derivations that do not match the surface forms. For simplicity, I do not show the in-situ subject here, nor extra verbal projections.

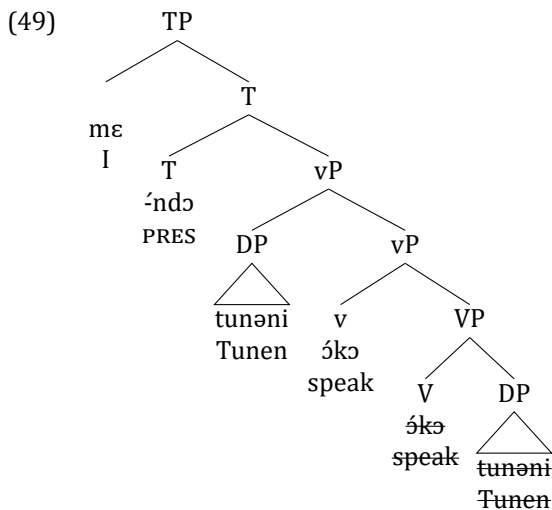
<sup>13</sup>Alternatively, we need an account of Bantu verbal morphology without V-to-v movement, e.g. postsyntactic morphological rules to derive suffixes vs prefixes. See §4.1 Challenge 1. cf Broekhuis (2022) for statement that Germanic OV languages obligatorily have short object shift of nominal objects (O to specVP) and cannot have V-to-v movement.

- To cut a long story short: PhD work on Tunen information structure shows that preverbal position is pragmatically neutral for the object; S-Aux-O-V-X is the canonical word order
- Supporting evidence: S-Aux-O-V-X order is compatible with thetics (47), given objects (48), and (non-exhaustively) focussed objects (60) (Kerr submitteda)

(47) Hot newsthetic context (all-new):  
*You are at the riverside outside the village and see an elephant, which very rarely occurs, so run to tell the others.*  
 mənó misəku siəkin!  
 /mɛ-nó      **mi-səku**    siəkinə/  
 SM.1SG-PST1 3-elephant see.APPL  
 'Je viens de voir un éléphant !'  
 ('I just saw an elephant!')      [PM, 316]

(48) Truth focus context with given object:  
 'Do you see the sheep?'  
 ménd(ɔ) **ɛndómbá** sin.  
 /mɛ'ndɔ      ɛ-ndómbá sinə/  
 SM.1SG-PRES 7-sheep see  
 'Je vois les moutons.'  
 ('I see the sheep.')      [EO 695]

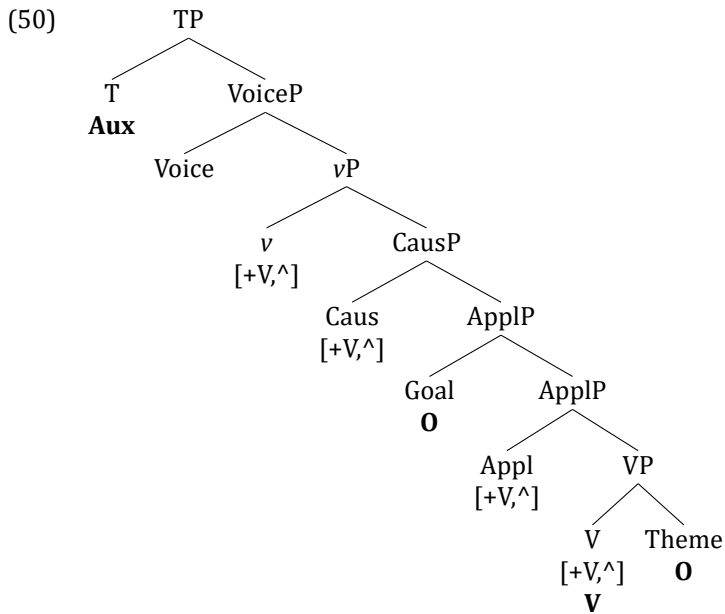
- The SVáO frequently referenced for Tunen on the basis of Mous (1997, 2003) is (i) low-frequency, (ii) a pseudocleft rather than a monoclausal focus construction (certainly not a case of an immediate-after-verb/IAV focus position) (Kerr submitteda)
- NB: Some SVO examples do however exist (with no á copula). Could be extraposition as with clausal complements? (cf Challenge 4)
- → Tunen does not have a S-Aux-O-V-X/SVO alternation with S-Aux-O-V-X as a peripheral strategy; S-Aux-O-V-X is core syntax (*contra* Güldemann 2008a on Benue-Congo vs Mande)
- → Object movement therefore appears to be formal movement only, not triggered by IS
- So the verb movement analysis leads us to the following 2-step basic analysis of Tunen:



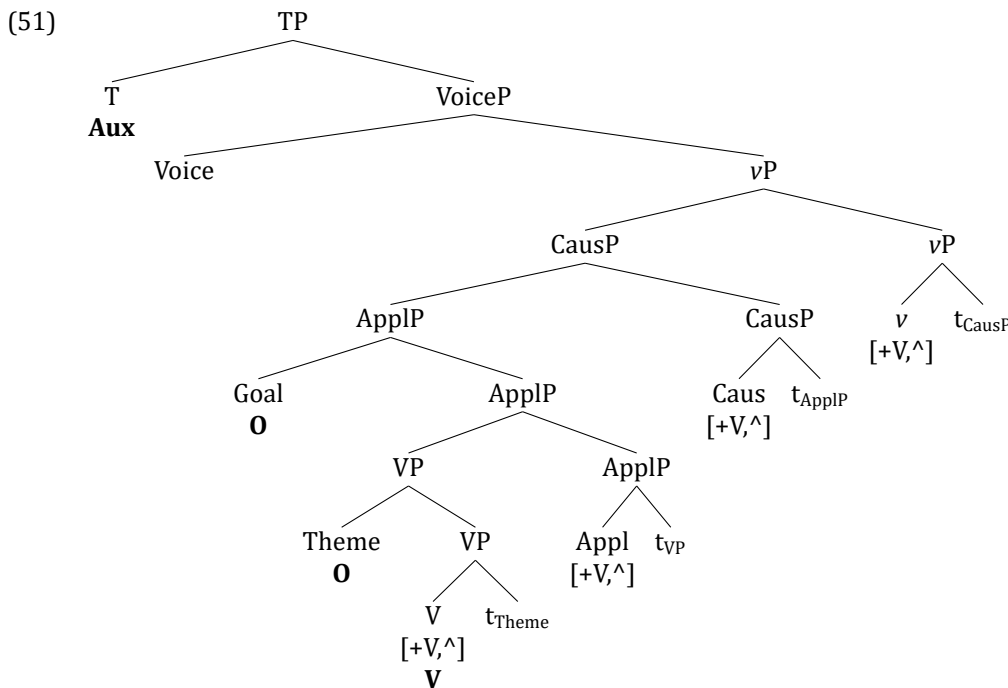
- Ingredients for this analysis:  
 Head-initial VP  
 V movement to vP-internal head  
 Object movement across V (cf Holmberg's Generalization) for formal reasons (not IS trigger)

### 3.8 Proposal 2 (FOFC-style roll-up)

- What about the phrasal movement account, as illustrated for Germanic?
- Proposal for Tunen: SAuxVO base; SAuxOV through roll-up movement caused by ^-feature on [+V] heads up to v
- NB: assuming goal object introduced by low ApplP, to get S-IO-DO-V (option alongside S-DO-V-Prep-IO; \*S-DO-IO-V, as in other West African languages that allow multiple preverbal objects)



↓



### 3.9 Alternative analyses

#### 1. Haider (2010, 2013) **Basic Branching Conjecture (BBC)**

Allows VP to be base-generated as OV

Similar idea of base-generated OV used for West African S-Aux-O-V-X/SVO by Sande (2017); Sande et al. (2019); applied to Uralic by Schmidt (prep)

- In Sande et al. (2019)'s approach, Tunen's cross-categorical head-initiality does not motivate OV as base-generation; alternatively, argue that acquirer can posit OV based on robust OV input

- Note for Tunen, we still need to derive Bantu verbal morphology - if this is through verb movement, base-generation order of VP not enough to capture OV
2. Roberts (2019) discussion of [ XP [v Root v]] approach, where OV is basic and VO derived by verb movement

Here, *v* is a categoriser, distinct from the *v* that introduces external arguments and Voice (Roberts 2019:159)

^-feature of Biberauer et al. (2014) is replaced with a weak category feature; FOFC-relevant movement is driven by labelling (following Chomsky 2013, 2015's Labelling Algorithm).

Word order variation between languages as cat feature can be weak or strong. If strong and valued, OV, or require movement to be labelled (VO); if unvalued, then head movement, if weak, then roll-up movement (= movement driven by labelling; head movement/roll-up/pied piping)

Disharmonic word order arises when some but not all heads within an extended projection have a weak category feature (parallel to some but not all heads having ^-feature)

3. **Combination** of roll-up mechanism with head movement of V

Roberts (2019:163-4, 167, 185fn46) explicitly allows combination of roll-up + head movement, but argues that roll-up must come before head movement

## 4 Challenges for discussion

- We have the basic analytical options: head movement account + object shift, or FOFC-style Kayneian roll-up movement account, + alternative with base-generated OV (+ combos)
- This section: Discussion of empirical challenges as test cases for each analysis in Tunen

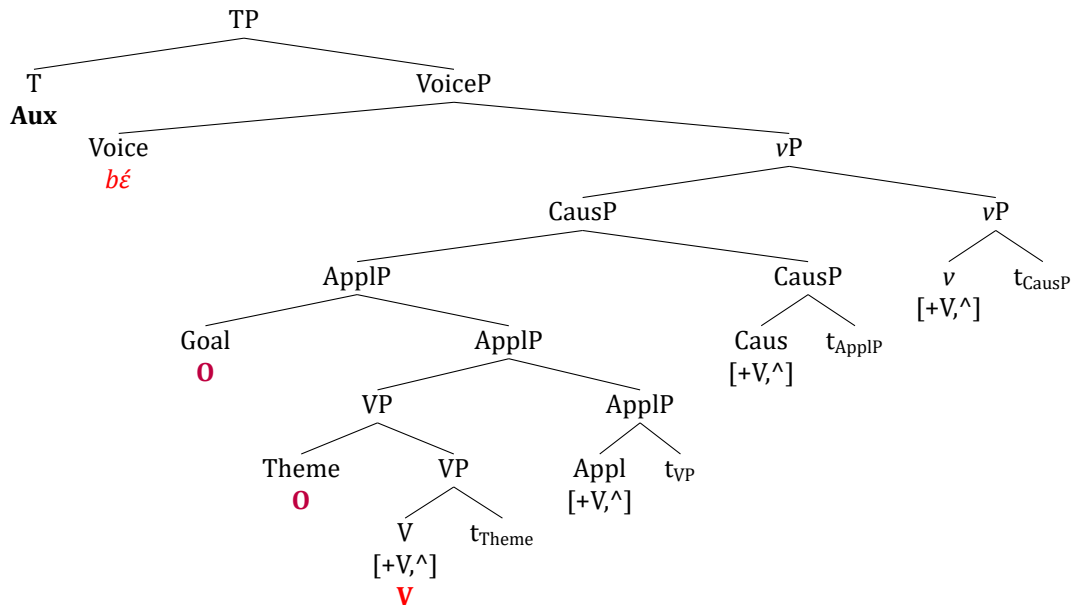
### 4.1 Challenge 1: Deriving Bantu verbal morphology

- How do we get derivational suffixes and the Voice marker *bé* as a prefix?
- Challenge: Getting *bé* middle to attach as a prefix on V when O intervenes

- (52) a. *neáyéá ni kúnyiə né móhókí neléndo mianjó bíhíki.*  
 /neáyéá né kúnyiə né ma-hókí ne-le'ndo mianjóá  
 POSS.PRON.1.5 ASSOC.5 teach ASSOC.5 6-language SM.5-NEG-PRES POSS.PRON.EMPH.1SG  
**bé**-hikiə/  
 MID-like  
 'Sa façon d'enseigner les langues ne me plaît pas.'  
 ('I don't like the way she teaches languages.' lit. 'Her way of teaching languages doesn't please me.')
- b. *a-ná búáyé bólmó bé-kénd-ák-án-éná wéya bémwət.*  
 SM.1-PST2 POSS.PRON.1.14 14.load MID-walk-DUR-RECIP-APPL PRON.1 self  
 'He carried his load himself' (Mous 2008:309, adapted)



(53)



## 4.2 Challenge 2: Aux-O-V with O-V-X

- Like many of the other OV languages in West/Central Africa, and unlike most other Aux-O-V languages outside of Africa, Tunen has S-Aux-O-V-X word order, where X refers to obliques (prepositional objects, locative phrases, manner adverbs, time adverbials)

- (54) a. *mɛka ámɛ siəkinə na má'méá mǝ́sǝ máfandé máam!*  
 /mɛ-ka ámɛ siəkinə na ma-̂mɛa ma-ésǝ ma-fandé máama/  
 SM.1SG-PST3 PRON.1SG see with 6-POSS.PRON.1SG.6 6-eye 6-two DEM.PROX.6  
 'Moi j'ai vu avec mes propres yeux !', ('I saw (it) with my own two eyes!') [PM 1050]
- b. *muəndú ándɔ imíté túmbiə ɔ mɔn.*  
 /mɔ-əndú a-ndɔ ɛ-míté túmbiə ɔ mɔ-ná/  
 1-woman SM.1-PRES 7-calebash return PREP 1-child  
 'La femme remet la calebasse [à l'enfant]<sub>FOC</sub>.'  
 ('The woman returns the calebass [to the child]<sub>FOC</sub>.) [JO 1586]
- c. *bɛfɔŋɔ békáfámáka naáneɔla (ɔ) étɔbɔtɔb.*  
 /bɛ-fɔŋɔ bé-ka-fámá-aka naáneɔla ɔ ɛ-tɔbɔtɔb/  
 8-cow SM.8-PST3-arrive-DUR yesterday PREP 7-field  
 'Les vaches sont apparues dans le champ hier.' ('The cows appeared in the field yesterday.') [JO 2600]

- NB: This combination of Aux-O-V and O-V-X leads Gensler and Güldemann (2003); Güldemann (2008a) to argue for this word order as an 'Africa-specific quirk' of common genetic/areal origin, rather than independently innovated (though work by other authors argues for separate developments of this word order, see e.g. Hyman 2011)
- In terms of analysis:



c. okay. h́nící ́ndo aḡá tuəḡ ńe, o Bafea? ́ndo tuəḡ o Bafea?

/okay h́nící o-<sup>H</sup>ndo aḡá tuəḡ ńe o Bafea o-<sup>H</sup>ndo tuəḡ  
 okay.EN where SM.2SG-ORS PRON.2SG live then PREP Bafia SM.2SG-PRES live

o Bafea/  
 PREP Bafia

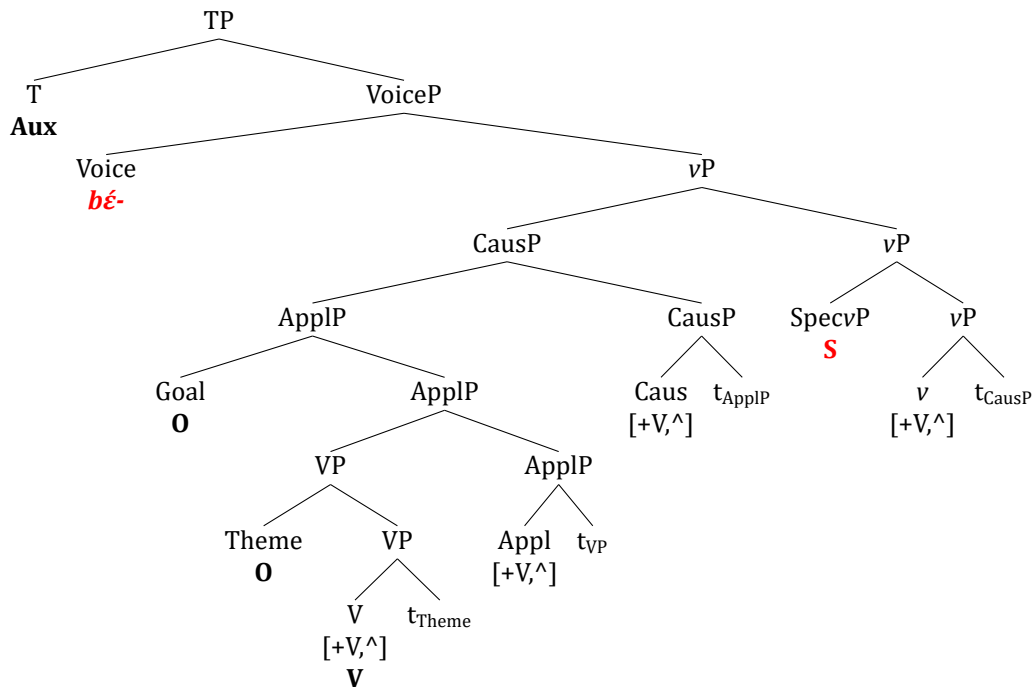
'Okay. Où resides-tu alors - à Bafia ? Résides-tu à Bafia ?'

('Okay. So where do you live - Bafia? Do you live in Bafia?')

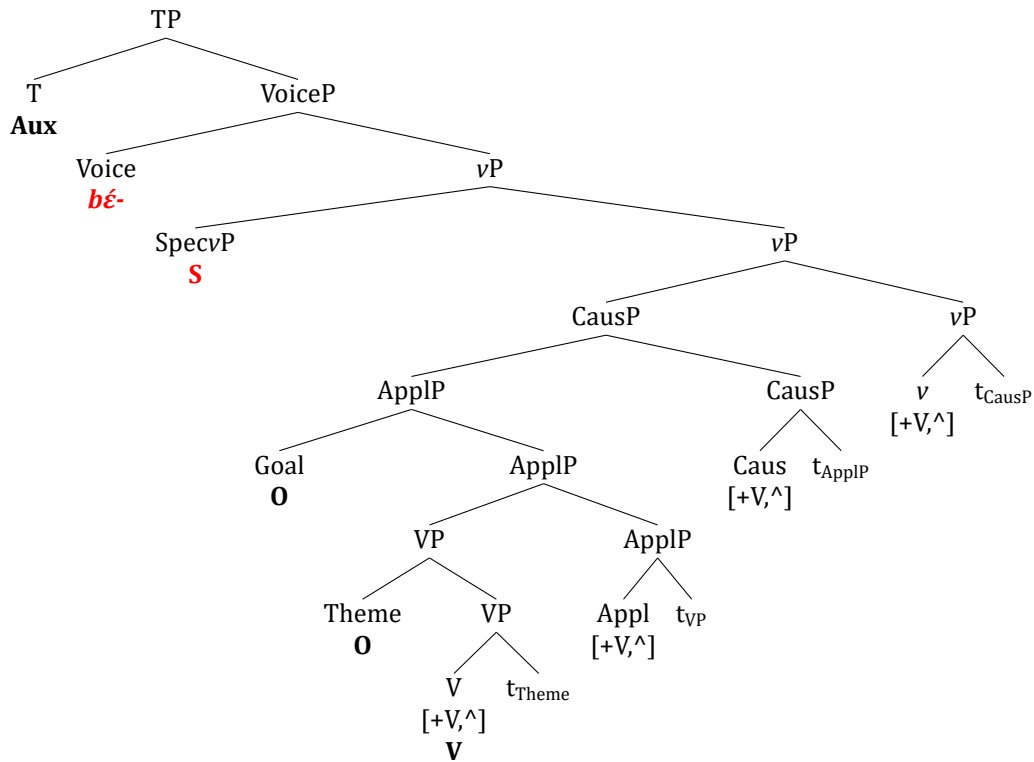
[PM 956]

- Need to get the right S-O-Voice-V order, with Voice head attaching to V as prefix (Challenge 1)
- Assume vPSH: subject base-generated in vP
- In head movement account, V+v form a head; specvP for subject
- In roll-up account, more complicated:
- We need two specifiers: SpecvP where subject is introduced, and SpecvP where CausP moves to
- Assume that either order of specifiers is possible
  - Order 1: Incorrectly puts object before in-situ subject (58)
  - Order 2: Incorrectly puts middle prefix before in-situ subject and object (59)
  - Both orders: Have intervening O (Challenge 1)
- Head movement account similarly has in-situ S intervening between Voice and V+v

(58)



(59)



#### 4.4 Challenge 4: Discontinuous DPs (O-V-Mod), V-O(-Mod) and \*/?O-Mod-V

- Tunen has discontinuous DPs of the construction S-Aux-O-V-Mod (60), found for numerals, quantifiers, adjectives, for objects and subjects

(60) Context: 'What do you see?'  
 méndɔ́ **túnɔ́ni** sinə **tólál**.  
 /mɛ́-ndɔ́ **tɔ́-nɔ́ni** sinə **tɔ́-lálɔ́**/  
 SM.1SG-PRES 13-bird see 13-three  
 'Je vois trois oiseaux.'  
 ('I see three birds.) [EO 225]

(61) Context: 'Do you see two birds?'  
 éɛ, méndɔ́ **tunóni** sinə **tófandɛ**.  
 /ɛɛ mɛ́-ndɔ́ **tɔ́-nóni** sinə **tɔ́-fandɛ**/  
 yes SM.1SG-PRES 13-bird see 13-two  
 'Oui, je vois deux oiseaux.'  
 ('Yes, I see two birds.') [EO 1408]

- While discontinuous DPs are often viewed as low-frequency constructions driven by difference in information structure of noun and modifier (e.g. Fanselow and Ćavar 2002 Contiguity Principle), in Tunen, this construction is common (across consultants) and pragmatically neutral  
 → No reason to motivate movement of Mod driven by IS features (unlike discontinuous DPs in other languages formed by A'-movement to clausal left periphery)
- Intuition: Mod is stranded in-situ, while O has moved higher via formal movement
- Issue: How to get this, if ^-driven movement always takes the whole complement?
- There are also examples where the modifier associates with the subject (62), again in various discourse contexts

(62) Context: QUIS dialogue task: EO has a picture from the end of a storyboard and must find out from PM (who has the rest of the storyboard) what happened before.

mba **bɛndɔ** bábáka háha **balal**, yaté bándɔ kɛ?

/mba **bɛ-ndɔ** bá-bá-aka háaha **ba-<sup>H</sup>lálɔ**, yaté bá-<sup>H</sup>ndɔ kɛa/

but 2-person 2-be-DUR here 2-three what SM.2-PRES do

‘Mais il y a trois personnes ici, que font-ils?’

‘But there are three people here, what are they doing?’

[EO, 581]

- NB: Corpus only has examples for numerals and quantifiers for subjects (for objects, some examples for adjectives as well)
- Q: are the subject splits the same construction, or are they floating quantifier constructions with modifier not base-generated in DP?

Morphological evidence (noun class agreement) and semantics argue **against** an adverbial account of such modifiers; ability for adjectives to be discontinuous also argues against adverbial account (as least for objects)

- A related issue: O-V-Mod is standard (60), V-O-Mod is accepted (63), and O-Mod-V is generally judged ungrammatical or reduced acceptability (64)

(63) Context: “How many people do you see?” (+ picture)

méndɔ sinə **bɛndɔ báfandɛ**.

/mɛ́-ndɔ sinə **bɛ-ndɔ ba-fandé**/

SM.1SG-PRES see 2-person 2-two

‘Je vois deux personnes.’

‘I see two people.’

[JO 541]

(64) Context: “How many people do you see?” (+ picture)

?méndɔ **bɛndɔ báfandé** sinə.

/mɛ́-ndɔ **bɛ-ndɔ ba-fandé** sinə/

SM.1SG-PRES 2-person 2-two see

‘Je vois deux personnes.’

‘I see two people.’

[JO 543]

- Why should O-Mod-V be ruled out, if this is just formal movement of V’s complement? Why not take the whole DP including the modifier?
- Why should movement be optional, resulting in both O-V-Mod and V-O-Mod orders with no clear IS difference?
- → could argue that V-O-Mod always involves extraposition (in parallel to treatment of Vs taking complement-initial embedded clauses in OV languages as always involving extraposition Biberauer et al. 2014:172)

## 5 Conclusion

- Aux-O-V is an interesting case of FOFC-compliant disharmonic word order, with various examples in Niger-Congo
- Tunen (Bantu, Cameroon) has Aux-O-V in combination with O-V-X as the canonical word order, which can be analysed alternatively as roll-up triggered by formal movement feature or a combination of V movement+object movement

- S-Aux-O-V-X is a crosslinguistically rare and disharmonic word order pattern found in West/Central Africa (with Aux-O-V found elsewhere, e.g. Germanic, South Sámi)

But the languages which have S-Aux-O-V-X differ in the exact type (e.g. nature of Aux, O; general headedness properties) - there are multiple S-Aux-O-V-X word orders<sup>s</sup>

⇒ Different formal derivations have been proposed to derive the different S-Aux-O-V-X word orders, reflecting different diachronic origins of this word order

### Summary of variation in analyses of Aux-O-V

- Is the VP underlyingly head-final (e.g. Guébie, Dafing) or head-initial (e.g. Gwari, Fongbe, Tunen, Nyokon)?
- Does V stay in-situ? (e.g. Guébie SAuxOV)
- Does V head-move to a low position (below T)? (= Makhuwa, Tunen(?))
- Does V move to T? (= Kru-type SVO/S-Aux-O-V-X alternation)
- Does V move to C (via T)? (= Germanic V2)
- Is there V or VP raising? (Kru, Makhuwa vs Germanic)
- Is there roll-up movement? (e.g. Germanic, Uralic)
- Is the object nominalised? (e.g. Fongbe)?
- Is there object movement?

Is object movement driven by information structure? (e.g. [-focus], Ewondo(?))

Is object movement driven by a formal feature only? (e.g. [+V]^, Tunen(?))

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## Glosses and abbreviations

**Glosses:** á = high-toned *a*; a = low-toned *a*; <sup>h</sup> = floating high tone; <sup>l</sup> = floating low tone; 1, 2, 3... = Bantu noun class marker; 1S(G), 1PL = 1st person singular, plural; 2S(G) = 2nd person singular; APPL = applicative; ASSOC = associative (=connective) marker; CAUS = causative; COP = copula; DEF = definite, DEM = demonstrative; DIM = diminutive; DUR = durative; EMPH = emphatic (pronoun); DJ = disjoint verb form; FOC = focus marker; FUT = future tense; FV = final vowel; INF = infinitive; IPF0 = imperfective “non-passe”; LOC = locative; MID = middle; NEG = negation; NOM = nominal; NMLZ = nominaliser; PASS = passive; PST1 = first-degree past tense (just now); PST2 = second-degree past tense (hodiernal); PST3 = third-degree past tense (yesterday); PERF = perfect; PFV = perfective PM = ?; PRES = present tense; PO = postposition; POSS = possessive; PREP = preposition; PRON = pronoun; PROX = proximal; RECIP = reciprocal; RED = reduplicant; REP = repetitive; SM = subject marker; TAM = tense/aspect(/mood) marker.

**Abbreviations:** Aux = auxiliary; C = complementiser node (pragmatic domain); Cop = copula; Comp = complement clause; Compl = complement clause; DO = direct object; DP = determiner phrase; EN = English; Gen = genitive; IO = indirect object; IS = information structure; MSB = Macro-Sudan Belt; mvt = syntactic movement; NOM = nominalised; O = object; PP = prepositional phrase; S = subject; T = tense node (inflectional domain); TP = tense phrase (inflectional domain); V = verb; V2 = verb-second, vP = verbal projection above VP and below voice domain, VP = verb phrase; X = obliques

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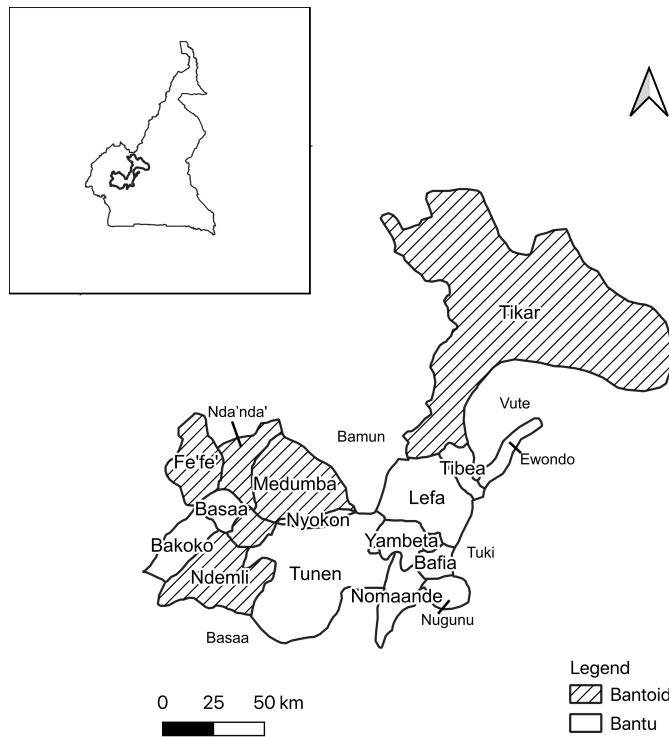
## Supplementary figures



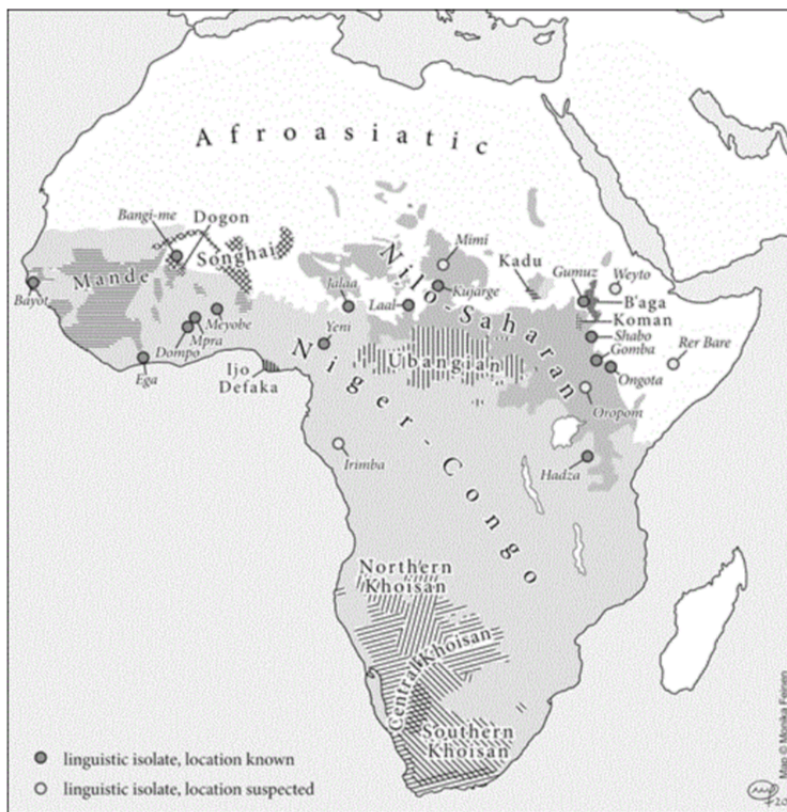
**Figure 3:** Photos with Tunen consultants from NdikiniMéki.



**Figure 4:** Map showing location of NdikiniMéki within Cameroon (Mbam, région du Centre).



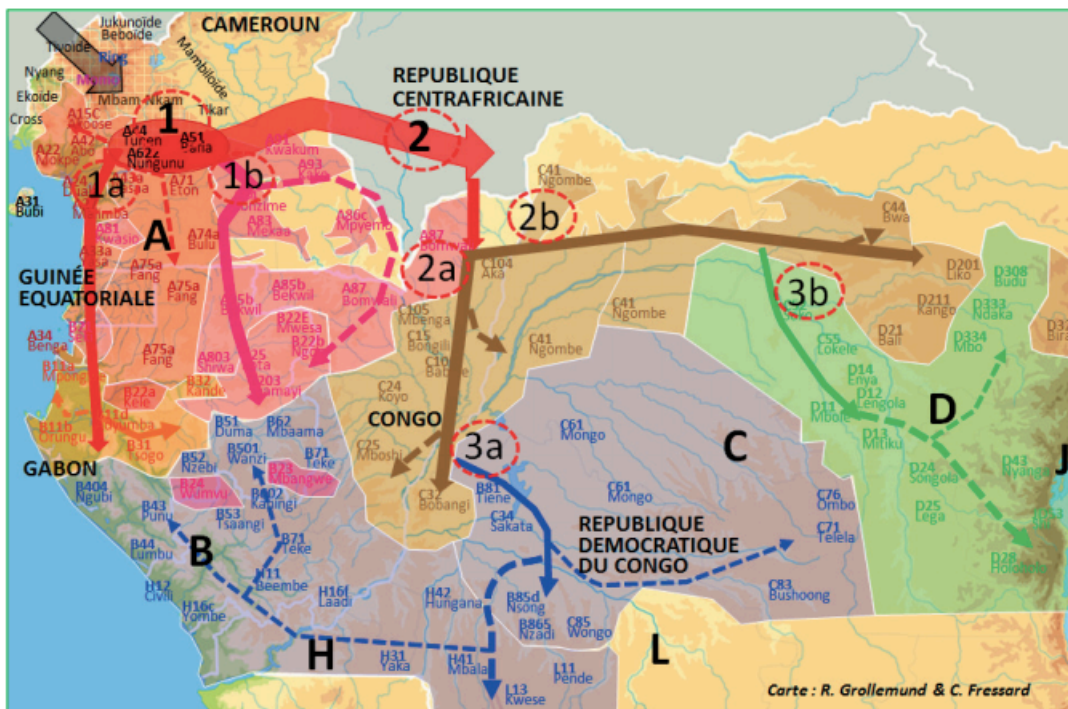
**Figure 5:** Map showing location of Tunen, Nyokon, and Ewondo as bordering non-Bantu Bantoid languages in Cameroon (Kerr submittedb).



**Figure 6:** Map showing Niger-Congo in relation to other language families in Africa (Good 2020).



**Figure 7:** Map showing distribution of Bantu languages across Sub-Saharan Africa © SIL 2001).



**Figure 8:** Example proposal of Bantu expansion from Cameroonian homeland close to the Mbam region where Tunen is spoken (Grollemund 2012:241).