When object movement splits the noun phrase

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1   Introduction

- Assumption about natural language: material that belongs together semantically will stay together syntactically (Contiguity Principle (1) / Principle of Iconic Distance / Behagel's First Law (Behagel 1932)))

(1)   **Contiguity principle**
      "material that is contiguous at one step in the derivation (that is, e.g., merged as a single phrase) should remain contiguous unless other principles force a violation of contiguity."
      (Fanselow & Ćavar 2001, cited in Fanselow and Ćavar 2002)

- **discontinuous noun phrases (DPs)** are (apparent) departures from the Contiguity principle: they show syntactic separation between head noun (N) and modifier (Mod)[1]

(2)   Context: 'Did three boys hit you?'
      Ma'! **X-ch'úuppal-o'ob** jats'-ik-en   **óox-túul=i'**.
      NEG F-girl-PL   hit-INCMPL-B.1SG three-CL.AN=LOC
      'No! Three GIRLS hit me.'   (Yucatec Maya, Skopoteas et al. 2020:628)

- Explanation in literature: discontinuous DP constructions such as (2) arise due to difference in discourse status (information structural/IS features) between noun and modifier; split in syntax iconically reflects split in IS status
- Commonly analysed as derived via A'-movement to clausal left periphery
- Today's talk: Investigation into a crosslinguistically rare kind of discontinuous DP construction in Tunen (Bantu, Niger-Congo), which I argue is derived through formally-conditioned (i.e. not IS-driven) A-movement to a position within the verbal domain

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Talk outline

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[1]Throughout the handout, I indicate the noun and modifier using boldface. See the Abbreviations section at the end of the handout for glossing conventions. For field data on Tunen, I provide a phonetic transcription on line 1 and phonological transcription on line 2 (/.../); French translations as agreed with consultants, English translations added. The form ID from the Tunen Dative OLD database (to be archived late 2023) is given in square brackets alongside the consultant initials, e.g. [JO 542] = form id 542, by consultant JO.

2 Background

2.1 Discontinuous DPs crosslinguistically

(3) **Defining discontinuity**:
  "the dislocation of elements in a discontinuous noun phrase involves the separation of the head noun from its determiner, article, quantifier, or an adjective modifying it"

  (Fanselow and Féry 2006)

- NB: I use 'modifier' to refer to any element that semantically modifies the noun (without committing to them being the same syntactically, e.g. head or phrasal); I assume the DP hypothesis (Abney 1987 *et seq.*) and thus use 'DP' to refer to the maximal projection of the noun phrase
- Two types of analyses of discontinuous DPs crosslinguistically:
    1. Head noun and modifier are **base-generated in separate DPs** (discontinuity is only apparent)
    2. Discontinuity arises from **movement** of head noun or modifier (A'-movement to left periphery; **subextraction** or **copy+deletion** approach)
- Discontinuous DPs are reported to be a low frequency strategy – e.g. Louagie and Verstraete 2016 typological overview of work on 100+ Australian languages find that only 1-5% of noun phrases are discontinuous,[2] with such constructions limited to particular discourse functions, namely contrastive focus
- Study of discontinuity linked to earlier work on "nonconfigurational" syntax (e.g. Hale 1983 on Warlpiri); how do we model the interaction between grammatical role and discourse role? (See Kerr et al. 2023 for arguments for a continuum rather than a dichotomy, applied to Bantu)

2.2 Tunen

- Tunen: Bantu (Niger-Congo) language spoken in central Cameroon at the borderlands with non-Bantu Bantoid (Guthrie code A44, ISO 639-3 code tvu)
- My PhD thesis (Kerr in prep.): "Tunen syntax and information structure"; description and analysis of the interaction between syntax and IS in Tunen, based on 2 fieldwork stays in Cameroon (+ secondary data)
- Tunen has remarkable syntax: the only Bantu language with consistent OV basic word order (Dugast 1971; Bearth 2003; Mous 1997, 2003, 2005, 2014; Kerr to appear), of disharmonic S-Aux-O-V-X type
- Tunen also has discontinuous DPs, again a construction rarely reported in Bantu (Van de Velde 2022:909)

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[2]Note that the percentage of modified noun phrases in general is not stated.

- According to Mous (1997, 2003), discontinuous DPs in Tunen arise when there is contrastive focus on the modifier

(4) mè-ná   **ìmìtə̀**   **yè** mʷə̀nífí índí **mè-ŋéŋ** ò   hɛ̀lɔ́bátɔ̀
     1SG-HOD.PAST 9:calabash 9:of 6:water give:H 9-big   LOC 19:child
     'I gave the BIG water calabash to the child.' (Mous 1997:133; Mous 2003:305)

⇒ Expect discontinuous DPs to be infrequent, patterning with contrastive focus on modifier

3   Empirical study on Tunen

3.1   Methodology

- Bantu Syntax and Information Structure (BaSIS) project methodology for data collection; controls the IS context (update of Questionnaire on Information Structure (QUIS) Skopeteas et al. 2006) (Van der Wal 2021)
- Fieldwork sessions conducted in Ndikiniméki/Yaoundé, Cameroon (2 x 3.5 months), using French as metalanguage, 8 consultants of which 3 main consultants, age range 30-70, male and female speakers, mostly Ndiki dialect

3.2   Findings

3.2.1   IS context

- Expectation from literature: Discontinuous DPs when there is contrastive focus on the nominal modifier (as in Mous 1997, 2003)
- Methodology: Test a range of IS contexts using BaSIS methodology stimuli (Van der Wal 2021) + compare with natural speech data
- (In fact: Discontinuous DPs only became a research topic when testing IS more generally and finding them come up in unexpected discourse contexts...)

Focus on modifier only

(5) Context: "How many people do you see?" (+ picture)   (information focus on modifier)
     mɛ́ ndɔ **bɛndɔ** sinə **báfandɛ**.   (S-O-V-Mod)
     /mɛ   ᴴndɔ **bɛ-ndɔ**   sinə **ba-ᴴfandɛ́**/
     SM.1SG PRS 2-person see 2-two
     'Je vois deux personnes.'
     'I see two people.'   [JO 542]

(6) Context: Someone thinks you gave the small calabash to the child. (corrective focus on mod)
     bɔ́ɔ, mɛ ná **imítə́** indiə **mɛŋéŋ** ɔ hɛlɔ́batɔ, (tátá ɔ mɛ́ᵗtɛ́tɛ́).
     /bɔ́ɔ mɛ   ná   ɛ-mítə́   índíə́ mɛŋéŋa ɔ   hɛ-lɔ́batɔ tátá ɔ   mɛ́ᴸtɛ́tɛ́a/
     no   SM.1SG PST2 7-calabash give big   PREP 19-child not PREP small
     'Non, j'ai donné la grande calebasse à l'enfant, (pas la petite)'
     'No, I gave the big calabash to the child, (not the small one).'   [EE+EB 1833]

Focus on whole DP (N+Mod)

(7) a. Context: 'What do you see?'
mɛ́ ndɔ **túnoni** sinə **tɔ́lál**.
/mɛ   ᴴndɔ **tɔ-ᴴnoni** sinə **tɔ-ᴴlálɔ́**/
SM.1SG PRS   13-bird   see   13-three
'Je vois trois oiseaux.'
'I see three birds.'   [EO, 397]

  b. Context: A governor visits the school. Someone asks 'What did he give to the children?'
a ná baná **bɛkɔa** índíə́kín **biənyi**.
/a   ná   ba-ná   **bɛ-kɔa** índíə́kíné **bɛ-ənyi**/
SM.1 PST2 2-child 8-thing give.APPL 8-many
'Il a donné beaucoup de choses aux enfants.'
'He gave out a lot of things to the children.'   [JO 2329]

⇒ Here, there is a mismatch between scope of focus (N+Mod) and syntax (split between N+Mod); discontinuous DP construction is not explained by distinction in IS between N and Mod

Predicate-centred focus

(8) a. Context: "Do you see two birds?"
ɛ́ɛ, mɛ́ ndɔ **tunoní** sinə **tɔ́fandɛ**.
/ɛɛ mɛ   ᴴndɔ tɔ-noní   sinə tɔ-ᴴfandɛ/
yes SM.1SG PRS   13-bird   see   13-two
'Oui, je vois deux oiseaux.'
'Yes, I see two birds.'   [EO 1408]

  b. (ɛ́ɛ,) mɛ ná **imitə yə mwənífí** indi **mɛŋέŋ** ɔ hɛlɔ́batɔ.
/ɛ́ɛ mɛ   ná   ɛ-mítə́   yɛ   ma-nífə́ indiə mɛŋέŋa ɔ   hɛ-lɔ́batɔ/
yes SM.1SG PST2 7-calabash ASSOC.7 6-water give   big   PREP 19-child
'(Oui,) j'ai donné la grand calebasse (de l'eau) à l'enfant.'
(Yes,) I gave the large calabash of water to the child.'   [EE+EB 1830; cf Mous 2003]

⇒ Discontinuous DP construction even when neither N nor Mod is within scope of focus
Example from natural dialogue (9b):

(9) Context: PM instructs EO in the QUIS map task.

  a. (ɔ) ɛnɔ́mɛ ɔyέá yέ ndɔ ákána ɛndɛndélɛ **miɔkɔ́** yέ lɛ **έlál**.
/ɔ   ɛ-nɔ́mɛ ɔyέá yɛ   ᴴndɔ ákána ɛndɛndélɛ **mi-ɔkɔ́**   yέ   léá **ɛ-ᴴlálɔ́**/
PREP 7-road REL.7 SM.7 PRS   leave   straight_on 9.chicken SM.9 be   9-three
'Sur la route qui va tout droit il y a trois poules.'
'The road that goes straight on has three chickens.'   [PM 686]

  b. ɔ   ná   **miɔkɔ́**   bɔ́ŋɔ́ **έlálɔ́**?
/ɔ   ná   **mi-ɔkɔ́**   bɔ́ŋɔ́ **ɛ-ᴴlálɔ́**/
SM.2SG PST2 9.chicken find   9-three
'Tu as trouvé les trois poules?'
'Have you found the three chickens?'   [PM, 687]

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    c.   mɛná **miɔkɔ́** bɔ́ŋɔ́ **í - í - ínisə**

       /mɛ   ná   **mi-ɔkɔ́**   bɔ́ŋɔ́   **ɛ-ᴴnisə**/

       SM.1SG PST2 9.chicken find   9-four

       'J'ai trouvé qu- qu- quatre poules'

       'I've found f- f- four chickens.'   [EO 688]

Thetics

- According to Isaac (2007) study of 6 Tunen texts from the Dugast (1975) corpus, discontinuous DPs can also introduce new discourse referents and are found in thetic constructions
- Found in fieldwork study with discontinuous modification of subjects:

(10)   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.

    a.   mba **bɛndɔ** bá báka háha **balal**, yatɛ́ bá ndɔ kɛ?

       /mba **bɛ-ndɔ**   ba ba-aka haha **ba-lalɔ**, yatɛ ba   ᴴndɔ kɛa/

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

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

       'But there are three people here, what are they doing?'   [EO, 581]

    b.   Context: After concluding the explanation.

       mhm. ɔ́ꜛhá **bɛndɔ** bá ndɔ wɛɛ́ya sinə **balal**.

       /mhm ɔhá   bɛ-ndɔ   ba   ᴴndɔ wɛ́ɛya sinə **ba-lálɔ́**/

       mhm   for.that 2-person SM.2 PRS   PRON.1 see   2-three

       'Mhm. C'est pour ça que trois gens le regardent.'

       'Mhm. That's why three people are looking at him.'   [PM 597]

- cf Schultze-Berndt (2022) on proposal that discontinuous modification of subject DPs can be used as an iconic expression of theticity (as monolithic information packaging)[3]

Interim summary

- Contrary to expectation, discontinuous DPs in Tunen are compatible with multiple IS contexts, not just contrastive focus on the modifier
- → the construction is pragmatically-neutral

3.2.2   What can be split?

- What syntactic restrictions are there on what material can be split?
- To do: Test different nominal modifiers

3.2.2.1 Quantifiers, numerals, adjectives
- Seen already: quantifiers (7b), numerals (5), (7a), (8a), adjectives (6), (8b)

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[3]Note however that the Tunen examples are not so restricted in terms of intransitivity and predicate type as in Schultze-Berndt (2022)'s proposal - so this is not a complete explanation of the Tunen data.

3.2.2.2 Relative clauses modifying objects

- In addition to numeral and quantifier modifiers and adjectives, relative clauses modifying objects are frequently discontinuous (11, 12), although they can also be continuous before the verb (O-[Rel]-V; (13)) or continuous after the verb (V-O-[Rel]; (14)).

(11)   mɛná **wááyɛ́ múɔ́ndu** siəkin **ɔwánákáná ɔ bulí na móto**, tátá wɔ́n.

/mɛ-ná   **wááyɛ́ mɔ-ɔ́ndu** siəkinə **ɔwá-á-ánákáná   ɔ   bɔ-lí   na**
SM.1SG-PST2 DEM.1 1-woman see   REL.1-SM.1.REL-leave PREP 14-work with

móto   tátá wɔ́ni
6.motorcycle not 1.other

'J'ai vu la femme qui est allée au travail avec le moto, pas l'autre.'
'I saw the woman who went to work by motorbike, not the other one.' [PB 2019]

(12)   mɛka ámɛ **yáyɛ́á ibəŋuluəkə yí búsíɛ́** siəkinə **ɔyɛ́á á⁺ná ɔnd**, [...]

/mɛ-ka   amɛ   **yayɛa   ɛ-bəŋuluəkə yɛ   busiə   siəkinə ɔyɛa**
SM.1SG-PST3 PRON.1SG PRON.POSS.1 7-car   ASSOC.7 14.front see   REL.7

a-na   ɔndɔ/
SM.1-PST3 buy

'Moi j'avais vu la première véhicule qu'il a acheté, [..]'
'I myself saw the first vehicle he bought, [...]   [PM 1084]

(13)   (nɛɔfɛ́nɛ) Mɔ́tinə aná **bɛlábɔ́néá bikimə** {ʔɔkɔlɔkɛn} **ɔbéá yamíá inyɔ́ an⁺á tálɛ́áká** naánɛkɔla {ɔkɔlɔkɛn(a)} (nɛɔfɛ́n).

/(nɛɔfɛ́nɛ) Mɔ́tinə a-ná   **bɛ-lábɔ́néá bɛ-kimə** {ɔkɔlɔkɛna} **ɔbéá yamíá inyɔ́**
(today)   Martin SM.1-PST2 8-food   8-all   {taste}   REL.8 my 1.mother

a-ná   tálɛ́á-aka naánɛkɔla {ɔkɔlɔkɛna} (nɛɔfɛ́nɛ)/
SM.1-PST2 cook-DUR yesterday {taste}   (today)

'Martin a goûté (aujourd'hui) toute la nourriture que ma mère a cuisiné hier.'
'Today, Martin has tasted all the food that my mother cooked (yesterday).' [PM 498]

(14)   bál(ɛ) utíbíniə **ɛbɔ́ka ɔyɛ́á mwití aná fálɛ́**.

/ba-lɛa ɔ-tibiniə   **ɛ-bɔka ɔyɛa mwiti a-na   falɛa/**
SM.2-be INF-observe 7-place REL.7 DEM.1 SM.1-PST2 tumble

'Ils sont en train d'observer l'endroit du la personne a degringolé.'
'They're looking at the place the guy fell.'   [PM 582]

- I suggest following Isaac (2007) that the variability in attachment of the relative clause may be related to independent factors such as prosodic weight. Given that relative clauses are frequently analysed as extraposed (see e.g. Ross 1967; Culicover and Rochemont 1990; Francis 2010), discontinuous relative clauses may thus be derived by a different syntactic mechanism than the discontinuous numeral, quantifier and adjective modifiers
- Alternatively, an extraposition account as given for relatives could be extended to other modifiers - cf Cinque (2010) on analysis of adjectival expressions in Romance as reduced relative clauses

3.2.2.3 Can't split 'how many?'
- 'how many' (postnominal) cannot be split; noun and question word must be contiguous:

(15) a.   *ɔ ndɔ **tunoni** sin **tɔnɛa**?

    /ɔ   ᴴndɔ **tɔ-noni** sinə **tɔ-nɛa**/

    SM.2SG PRS   13-bird   see   13-how_many

    Intd.: 'Combien de oiseaux vois-tu?'

    Intd.: 'How many birds do you see?'   [EO, 1402]

    b.   ***tunoni** ɔ ndɔ sin **tɔnɛa**?

    /**tɔ-noni** ɔ   ᴴndɔ sinə **tɔ-nɛa**/

    13-bird   SM.2SG PRS   see   13-how_many

    Intd.: 'Combien de oiseaux vois-tu?'

    Intd.: 'How many birds do you see?'   [EO, 1403]

    c.   **túnɔni tɔ́nɛ́á** ɔ ndɔ sin?

    /**tɔ-nɔni tɔ-nɛa**   ɔ   ᴴndɔ sinə/

    13-bird   13-how_many SM.2SG PRS   see

    'Combien de oiseaux vois-tu?'

    'How many birds do you see?'   [EO, 226]

- This inability to split 'how many?' can be explained from the more general requirement for wh-questions to be ex-situ in Tunen (see Kerr in prep.)

3.2.2.4 Can't split the associative
- Tunen has Bantu associative construction (aka genitive/connective), of form N-Assoc-N
- Cannot split the associative Assoc-N from the head N, regardless of IS context:[4]

(16)   Context: "Which member of Marie's family did the teacher meet at the school?"

    a.   ***yɛ́ Malíá** múlə́liə aka **inyə** nyánána (u isukul).

    /**yɛ**   **Malíá** mɔ-lə́liə a-ka   inyə   nyánáná ɔ   ɛ-sukúlu/

    ASSOC.9 1.Maria 1-teacher SM.1-PST3 9.mother meet.RECIP PREP 7-school

    Intd.: 'Le maître a rencontré [la mère]FOC de Marie à l'école.'

    Intd.: 'The teacher met Maria's [mother]FOC at the school.'   [JO 2652]

    b.   *múlə́liə aka **inyə** nyánána **yɛ́ Malíá**. [JO 2655]

    c.   *múlə́liə aka **yɛ́ Malíá** nyánána **inyə**. [JO 2654]

(17)   Context: Correction of falsehood 'The teacher met Johannes' father."

    a.   *bɔ́ɔ! mulə́liə aka **isə** nyánána **yɛ Malíá**.

    /bɔ́ɔ mɔ-lə́liə a-ka   **isə**   nyánáná **yɛ**   **Malíá**/

    no   1-teacher SM.1-PST3 ASSOC.9 9.father meet.RECIP 1.Maria

    'Non ! C'est le père [de Maria]FOC que le maître a rencontré.'

    'No! The teacher met [Maria's]FOC father.'   [JO.71.85]

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[4]I thank the late Gisbert Fanselow for providing a draft version of the SFB 1287 project C08/CHAOS questionnaire, from which these stimuli were taken.

b. *bɔ́ɔ! muléliə aka **yɛ Malíá** nyánána **isə**.
/bɔ́ɔ mɔ-léliə a-ka   **yɛ   Malíá** nyánáná   **isə**/
no   1-teacher SM.1-PST3 ASSOC.9 1.Maria meet.RECIP 9.father
'Non ! C'est le père [de Maria]_FOC que le maître a rencontré.'
'No! The teacher met [Maria's]_FOC father.'   [JO.71.86]

- Only contiguous orders were accepted, either the in-situ OV order (18) or fronting or clefting of the entire noun phrase:

(18) a. Context: 'Which member of Marie's family did the teacher meet?'
múléliə aka **inyə yɛ́ Malíá** nyánána (u isukul).
/mɔ-léliə a-ka   **inyə   yɛ   Malíá** nyánáná   ɔ   ɛ-sukulu/
1-teacher SM.1-PST3 9.mother ASSOC.9 1.Maria meet.RECIP PREP 7-school
'Le maître a rencontré [la mère]_FOC de Marie.'
'The teacher met Maria's [mother]_FOC.'   [JO 2651]

b. Context: Correction of falsehood 'The teacher met Johannes' father.
bɔ́ɔ! muléliə aka **isə yɛ Malíá** nyánan.
/bɔ́ɔ mɔ-léliə a-ka   **isə   yɛ   Malíá** nyánáná/
no   1-teacher SM.1-PST3 9.father ASSOC.9 1.Maria meet
'Non ! C'est le père [de Maria]_FOC que le maître a rencontré.'
'No! The teacher met [Maria's]_FOC father.'   [JO.71.84]

c. Context: Same as previous.
bɔ́ɔ! Isə yɛ Malíá muléliə aka nyánán.
/bɔ́ɔ **isə   yɛ   Malíá**   mɔ-léliə a-ka   nyánáná/
no   9.father ASSOC.9 1.Maria1-teacher SM.1-PST3 meet
'Non ! C'est le père [de Maria]_FOC que le maître a rencontré.'
'No! The teacher met [Maria's]_FOC father.'   [JO.71.79]

- The lack of ability for associatives to split is interesting in relation to their structural analysis (I assume they are PP complements)
- As they cannot split, I leave them aside for today's purposes...

3.3   Summary of findings

- Discontinuous DPs are found across discourse contexts; not limited to contrastive focus on the modifier (*contra* Mous 1997, 2003); Table 1
- Quantifiers, numerals, adjectives (and relative clauses) can be split; associatives cannot, nor 'how many; Table 2

- The discontinuous DP construction in Tunen can be summarised as S-Aux-O-V-Mod
- Note that Tunen discontinuous DPs are **pull splits** (i.e., the order of noun and modifier is the same as in contiguous DPs; see next section), as opposed to **inverted splits** (Fanselow and Ćavar 2002)

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IS context	Discon. allowed?
Focus on modifier only	Y
Focus on whole DP (N+Mod)	Y
Predicate-centred focus	Y
Thetics/new discourse referents	Y

Table 1: IS contexts in which S-Aux-O-V-Mod discontinuous DPs are allowed in Tunen.

Obj modifier type	Discon. allowed?
Quantifiers	Y
Numerals	Y
Adjectives	Y
Relative clauses	Y
'how many'	N
Associatives	N

Table 2: Ability for different items to be discontinuous (NP-V-**Mod**) in Tunen.

4   Formal analysis

4.1   Analysis of contiguous DPs in Tunen

- To analyse discontinuous DPs, first need an understanding/analysis of the DP more generally
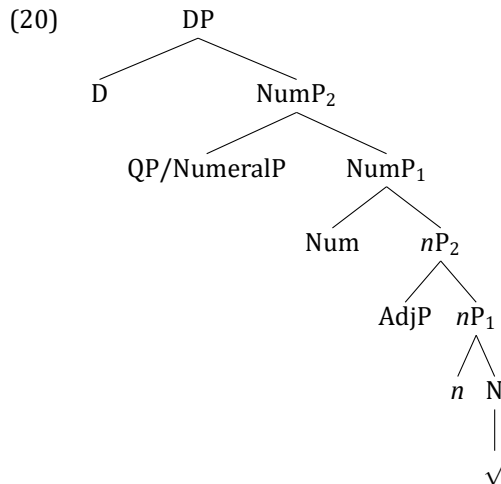- Tunen nominal modifiers have strict linear order:[5]

Det			
Dem			Num
Poss	Noun	Adj	Q
wh			

Table 3: Linear order of Tunen nominal modifiers (Kerr in prep.)

(19)   tɔɛ́yɛ tɔbanána tɔfítitiə tɔté↓té tɔ́fandɛ   **Dem N Adj Adj Num**

      /tɔ-ɛ́yɛ   tɔ-banána   tɔ-fítitiə   tɔ-tɛ́ᴸté   tɔ-ᴴfandɛ/

      13-DEM   13-banana   13-black   13-small   13-two

      'ces deux petites bananes noires'

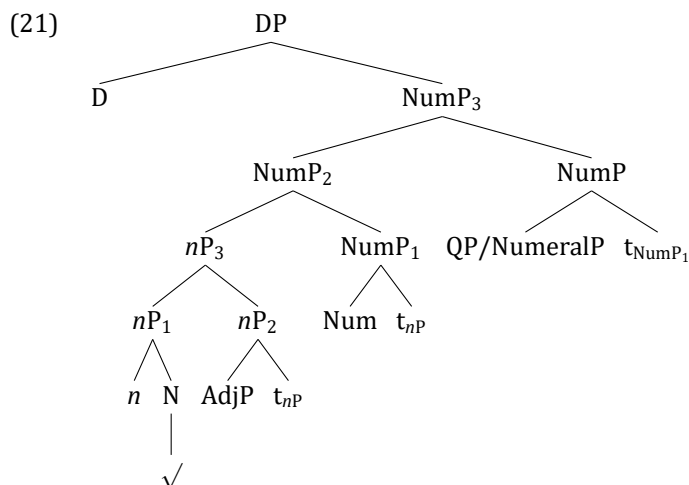   'these two small black bananas'   [JO, 844]

- I follow other work on Bantu syntax (see Fuchs and van der Wal 2022 and references therein) in taking Bantu noun class prefixes to be the realisation of gender on *n* (in interaction with Sg/Pl features on the individuating Num head)

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[5]The strict ordering restrictions in Tunen differ from other Bantu languages which have multiple different orders (see e.g. Van de Velde 2005). See also Kerr (in prep.) for discussion of (apparent) deviations in the form of Dem-N-Dem construction.

- As my data do not show variation between numerals and quantifiers, I assume both are adjoined at the same height (NumP) (as in other analyses of Bantu, e.g. Carstens 2008, 2017)
- As adjectives must be closer to the root, I assume they are adjoined lower, at the nP level (again following other analyses of adjectives in Bantu, e.g. Carstens 2008, 2017)
- Resultant base structure (assuming Spec-Head-Comp and left adjunction):

(20)

```
            DP
          /    \
         D     NumP₂
              /      \
      QP/NumeralP    NumP₁
                    /      \
                  Num      nP₂
                          /   \
                       AdjP    nP₁
                              /   \
                             n     N
                                   |
                                   √
```
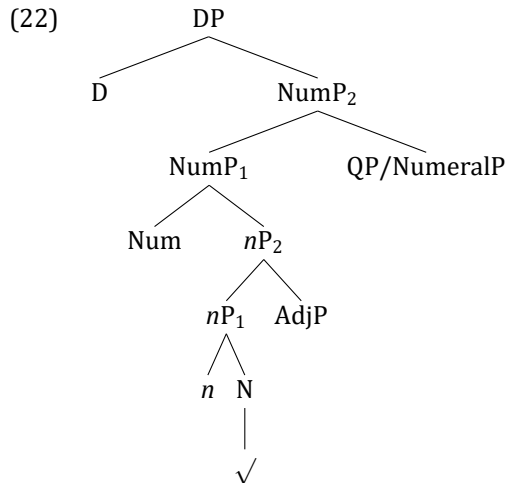
- Tunen's Dem-N-Adj-Num order is one of the predicted derivable possible orders from work on Universal 20 (Cinque 2005); one of the 8 homomorphic orders, commonly attested (Dryer 2018; Martin et al. 2020)
- Proposed universal hierarchy: Dem > Numeral > Adjective > N (Cinque 2005)
- Can derive Tunen's surface Dem-N-Adj-Num in Cinque's system[6] using roll-up movement stopping before D[7]

(21)

```
                    DP
                  /    \
                 D     NumP₃
                      /       \
                 NumP₂         NumP
                /     \       /      \
             nP₃     NumP₁  QP/NumeralP  t_{NumP₁}
            /   \    /   \
         nP₁   nP₂ Num  t_{nP}
        /  \   /  \
       n    N AdjP t_{nP}
            |
            √
```
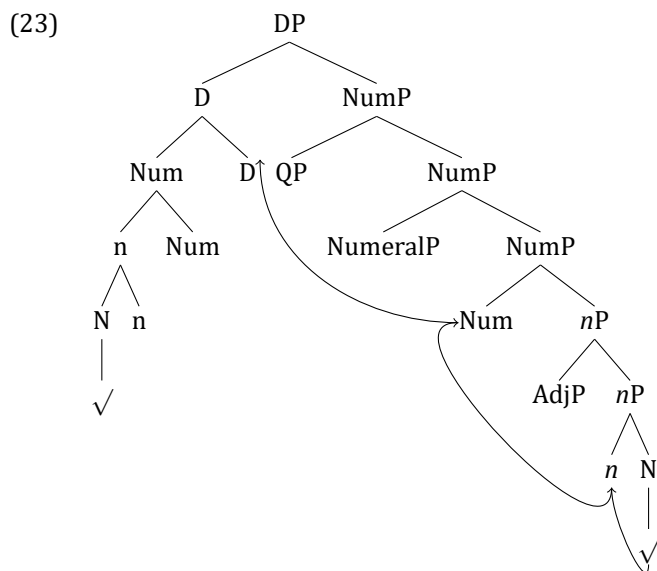
---

[6] i.e., working from a Dem > Numeral > Adjective > N underlying structure with no rightwards movement; no head movement, only phrasal movement (of an XP containing N), and a linearisation algorithm working by asymmetric c-command (Kayne 1994).

[7] NB: Strictly speaking, roll-up starts at the bottom (following the Start At The Bottom Generalization to avoid FOFC-violating structures; see e.g. Roberts 2019), meaning that N also rolls up over n. However, as n is taken to be the locus of the noun class morphology, it needs to be prefixal not suffixal; I simplify to avoid going into the details of this here.

- Alternatively, if right adjunction taken to be possible (departing from Kayne 1994), directly:

(22)

```
              DP
           ╱      ╲
          D        NumP₂
               ╱         ╲
           NumP₁         QP/NumeralP
          ╱     ╲
        Num      nP₂
              ╱      ╲
           nP₁       AdjP
          ╱  ╲
         n    N
              │
              √
```

- Alternatively, N-to-D head movement approach (cf Carstens 2017 on Swahili (G42, E. Africa), Bassong 2021 on Basaá (A43, Cameroon)):

(23)

```
                   DP
              ╱         ╲
            D            NumP
          ╱   ╲        ╱      ╲
       Num    D↑ QP          NumP
      ╱   ╲          ╱            ╲
     n    Num    NumeralP        NumP
    ╱  ╲                      ╱       ╲
   N    n                  →Num        nP
   │                              ╱        ╲
   √                           AdjP        nP
                                          ╱  ╲
                                         n    N
                                         ↑    │
                                              √
```

- But N-to-D head movement account in (23) faces 3 issues when applied to Tunen...
- **Issue 1:** This analysis works when D is silent, but in Tunen, I have argued that D can be filled by the specific indefinite determiner -^{H}mɔtɛ́ (> 'one') (Kerr 2020)
    - The N-to-D analysis predicts that -^{H}mɔtɛ́, analysed as D, would be postnominal, but it is **pre**nominal (Kerr 2020) (e.g. ɔ́mɔtɛ́ mɔndɔ 'a certain person')
    - To solve this, either depart from common approach to complex head formation (as in Julien 2002), leading to inconsistency in model; or reanalyse -^{H}mɔtɛ́ as phrasal, occupying SpecDP

- **Issue 2:** need to get linearisation with Adj preceding Num/Q;
  - solve by allowing both left and right adjunction (as in Carstens 2008, 2017) (NB: again, incompatible with Antisymmetry Kayne 1994):

(24)
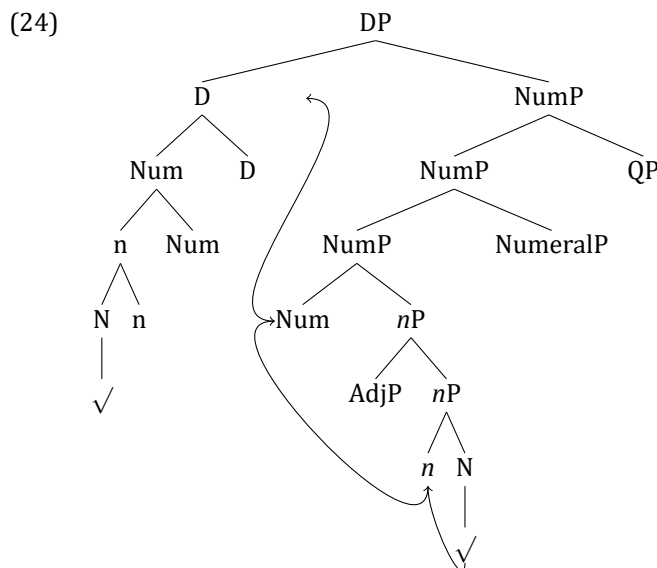
- **Issue 3:** Most relevant for today's discussion: This analysis predicts that the noun alone cannot be subextracted, as it is not a phrase (instead, it is a complex head)

4.2 Analysis of discontinuous DPs

4.2.1 Against an adverbial base-generation account

- Base-generation analysis: Head noun and modifier are base-generated separately (e.g. Bošković 2004 on Q-float in English)

(25)
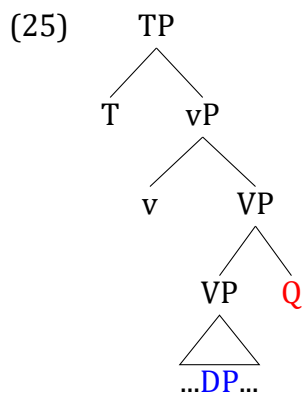
3 arguments against the adverbial analysis for Tunen modifiers:

- **Argument 1:** Discontinuously-placed modifiers in Tunen show noun class morphology matching the head noun, but adverbs in Tunen do not show noun class morphology:

(26)   a.   bɔ́ɔ́ní bɛndɔ bɔ́ɔ́ní bá ndɔ ɛŋganda bíínə **tɔfa ɛmbát**.

       /bɔ́ɔ́níə   ba-ndɔ   bɔ́ɔ́níə   bá   ᴴndɔ   ɛ-ŋganda   bíínə   **tɔfá**   **ɛmbáta**/
       DEM.DIST.2   2-person   DEM.DIST.2   SM.2   PRS   7-enganda   dance   quickly   too.much
       Les gens-là dansent l'enganda trop rapidement.'
       'Those people over there dance the enganda too quickly.' [EE+EB 1836]

   b.   Malíá a ná bɛlama ɔ́ndɔ **tɔfá**.

       /Malíá   a   ná   bɛ-lama   ɔ́ndɔ   **tɔfá**/
       1.Maria   SM.1   PST2   8-vegetable   buy   quickly
       'Maria a acheté des légumes vitement.'
       'Maria bought the vegetables quickly.'   [JO 2480]

- **Argument 2:** Discontinuous DPs in Tunen are not restricted to Q-float phenomena: adjectives (of clear qualificatory nature) can also be split, as seen in e.g. (6), (8b)[8]
- **Argument 3:** An adverbial account predicts the modifier semantically modifiers the event, rather than the noun alone. Field data suggest that this is not the actual semantics of these constructions in Tunen: e.g. the discontinuous DP subject from the QUIS discourse task (using a cartoon picture stimulus of three men by a tree) involves the numeral 'three' (27). This relates to a plural nominal referent and a single seeing event, rather than three seeing events.

(27)   Context: After concluding the explanation.
      mhm. ɔ́ᵻhá **bɛndɔ** bá ndɔ wɛɛ́ya sinə **balal**.

      /mhm   ɔhá   bɛ-ndɔ   bá   ᴴndɔ   wɛ́ɛya   sinə   **ba-lálɔ́**/
      mhm   for.that   2-person   SM.2   PRS   PRON.1   see   2-three
      'Mhm. C'est pour ça que trois gens le regardent.'
      'Mhm. That's why three people are looking at him.'   [PM 597]

⇒ Evidence against an adverbial adjunction account for Tunen discontinuous DPs

4.2.2   A note on subextraction versus copy+delete

- Copy+Deletion analyses proposed instead of subextraction due to differences in island effects
- However, Tunen discontinuous DPs are crucially formed by A, not A'-movement - and so A'-related island effects are not relevant → subextraction remains a contender

4.2.3   Proposal

- The basic idea: Discontinuity arises in Tunen as a side-effect of the independent mechanism of object movement; i.e. formally-driven A-movement of the object to the SpecVoiceP position
- For discontinuous DPs, the modifier gets stranded in-situ
- To illustrate, let's start with the model of the basic word order in Tunen...

---

[8]The adverbial analysis could still apply for the quantifiers/numeral cases, with a different analysis then needed for adjectives. For metatheoretical reasons of parsimony, I do not adopt such an analysis as the null hypothesis; if the data can be derived through one analysis, that is preferable.
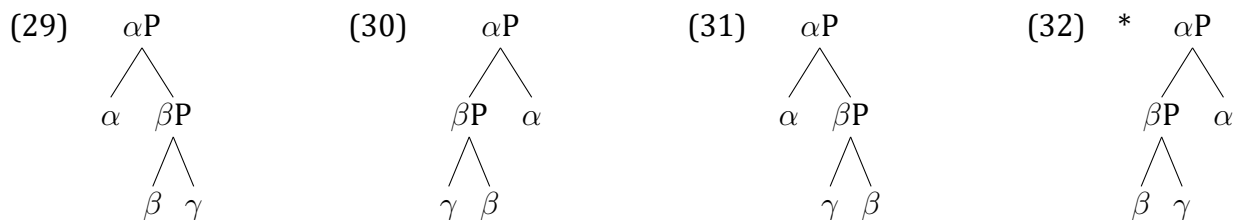
5　Discussion

5.1　Derivations of disharmony

- This section: Introduce Tunen clausal syntax and the mechanism of object movement; extend to capture the discontinuous DP data, which has implications for choosing between the models
- Tunen has disharmonic clausal syntax (i.e. mixed clausal headedness), of form C-T-O-V (S-Aux-O-V), in main and embedded clauses, across TAM contxts, e.g. (28):

(28)　Context: You walk into a room and see a broken window. Someone announces:
Biə́lɛ a ná itúbə́ san.

/Biə́lɛ	a	ná	ɛ-túbə́	sánɛ/
1.Pierre	SM.1	PST2	7-window	break
Subj	SM	TAM	O	V

'Pierre a cassé la fenêtre.'
'Pierre broke the window.'　　　　　　　　　　　　　　　　　　　[EE+EB 1669]

- This head-initial over head-final configuration is the only possible type of disharmonic structure according to the Final Over Final Condition (Biberauer et al. 2014; Sheehan et al. 2017)

(29)　αP　　　　　(30)　αP　　　　　(31)　αP　　　　　(32)　*　αP

(29): αP → α, βP; βP → β, γ
(30): αP → βP, α; βP → γ, β
(31): αP → α, βP; βP → γ, β
(32): αP → βP, α; βP → β, γ

- Tunen's Aux-O-V order can be taken as an instantiation of the possible disharmonic structure (31), with TP substituted for αP and VP for βP, as follows:

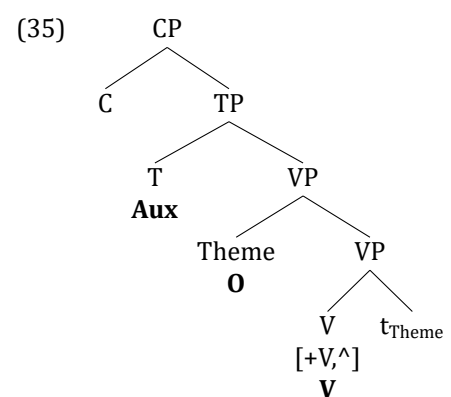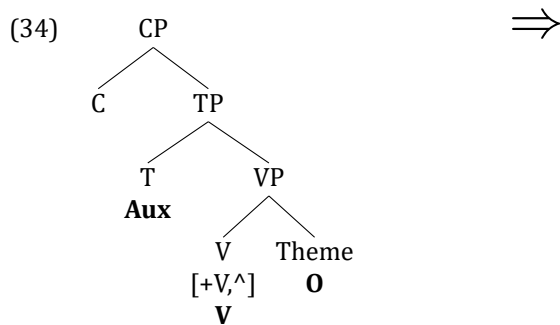(33)　TP → T (Aux), VP; VP → DP (O), V
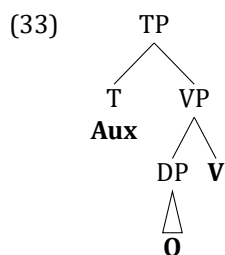
- How should Tunen's disharmonic S-Aux-O-V-X word order be derived?
- Three relevant approaches from literature I look at in my thesis:
  - **Analysis type 1:** Roll-up movement (as applied to Aux-O-V in FOFC literature on Germanic embedded clauses)
  - **Analysis type 2:** Base-generation of OV (as applied to Aux-O-V in West African languages)
  - **Analysis type 3:** Verbal head movement (as applied to the verbal domain in other Bantu) + object movement
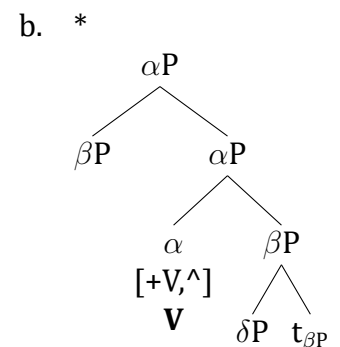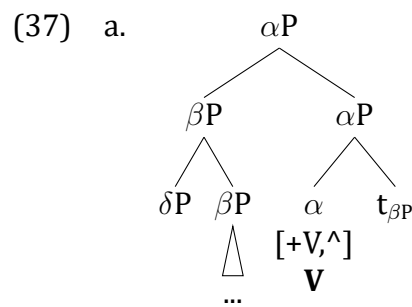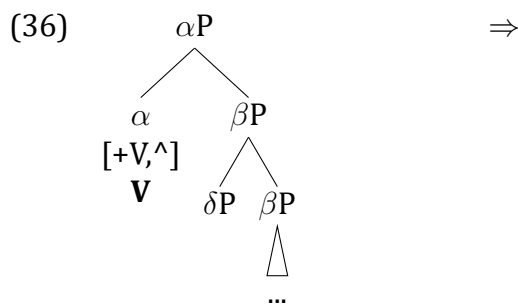
- I rule out analysis type 2 on the basis of incorrect linearisation of extended verb forms[9]
- Discontinuous DPs provide a test case between analysis type 1 and analysis type 3

5.1.1 Analysis type 1: Roll-up

- Work in literature on FOFC has proposed that disharmonic word order is driven by ^-feature on some but not all of the heads within the relevant Extended Projection, from an underlyingly head-initial structure (Spec-Head-Comp)
- Aux-O-V derived when heads up to and excluding T have ^-feature:

(34)
```
            CP
          /    \
         C      TP
              /    \
             T      VP
            Aux    /   \
                  V    Theme
               [+V,^]    O
                  V
```

$\Rightarrow$

(35)
```
            CP
          /    \
         C      TP
              /    \
             T      VP
            Aux   /     \
               Theme     VP
                 O      /   \
                       V    t_Theme
                    [+V,^]
                       V
```

- The issue for deriving S-Aux-O-V-Mod disharmonic DPs: the ^-feature triggers movement of the whole complement; cannot strand the modifier:

(36)
```
          αP
        /    \
       α      βP
     [+V,^]  /   \
       V   δP    βP
                 △
                 ...
```

$\Rightarrow$

(37) a.
```
            αP
          /    \
        βP      αP
       /  \    /   \
     δP   βP  α    t_βP
          △ [+V,^]
          ...  V
```

b. *
```
              αP
            /    \
          βP      αP
                /   \
               α     βP
            [+V,^]  /   \
               V   δP   t_βP
```

- There are other issues with applying the roll-up account to Tunen, which I won't cover today for space reasons (see discussion in thesis re: adjunct position and verbal morphology)
- What's relevant for today: Existence of discontinuous DPs in Tunen is an argument against the roll-up analysis of Aux-O-V disharmony in Tunen (would require extra mechanisms, e.g. extraposition)

Analysis type 3: Verbal head movement + object movement

- Bantu is well-known for having highly agglutinative verb forms, with inflectional prefixes and derivational suffixes (Bearth 2003)[10]

---

[9]Base-generation of OV is ruled out already under certain metatheoretical approaches, e.g. Kayne (1994)'s Antisymmetry, where all structures are underlyingly Spec-Head-Comp (versus e.g. Haider 2010, 2013's Binary Branching Conjecture, which explicitly allows base-generation of head-final structures). See Sande et al. (2019) for the application of a base-generation analysis to the derivation of Aux-O-V disharmony in West African languages.

[10]NB: Tunen is an outlier in having a split in predication, with the inflectional morphemes separate phonological words from the verb stem due to the intervention of the object (but note they are still pre-stem, as in other Bantu).

- Many authors have proposed short verb movement in Bantu, i.e. movement of V to a head between *v* and Asp (i.e., lower than T), picking up the derivational suffixes (see e.g. Buell 2005; Carstens 2005; Myers 1990; Ngonyani and Githinji 2006; Julien 2002; Van der Wal 2009, 2022)
- Such structures linearise as VO (as all other Bantu languages are VO!); the analysis must be modified for Tunen by object movement in order to get the correct OV surface order
- As object movement in Tunen is not constrained by IS, TAM, definiteness, incorporation, or embedded/matrix clause status (Kerr to appear, in prep.), I analysis the object movement as conditioned by a formal movement trigger (i.e., not IS-conditioned, e.g. by a Givenness or δ-feature)
- Based on arguments from verbal morphology, subject pronouns, and adverb placement, I propose that (i) Tunen has verbal head movement like other Bantu, but it stops at *v* (not Asp, as in other Bantu), and (ii) the landing site of the object is SpecVoiceP:

(38)
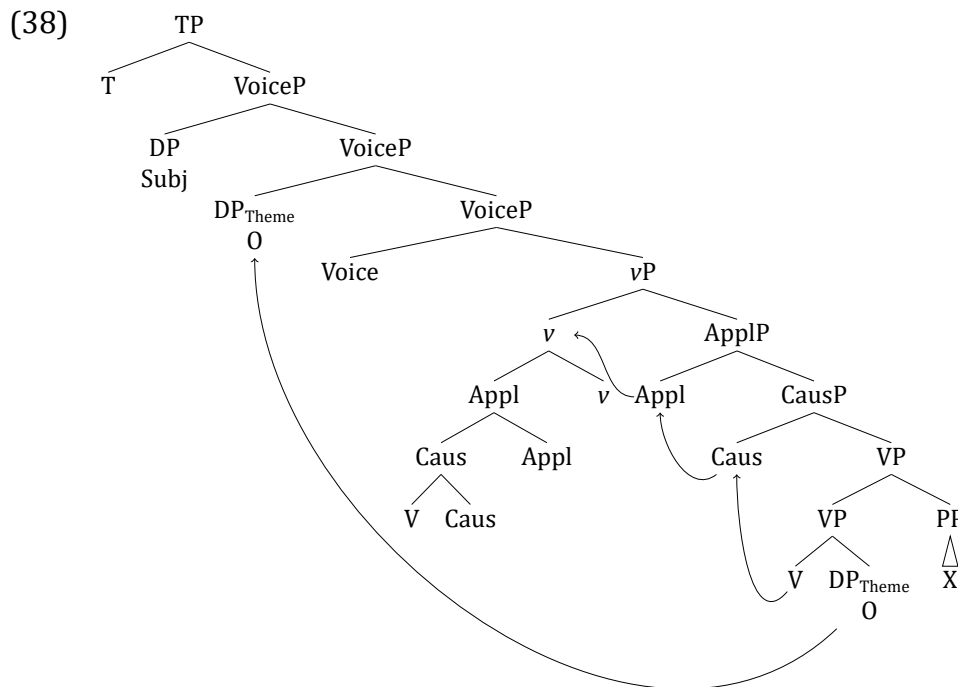
- This model captures the basic S-Aux-O-V-X word order - now we need to extend it to discontinuous DPs
- I argued above against an adverbial analysis of modifiers in which they are base-generated outside the DP as adverbial adjuncts
- Turning to movement analyses, there are 2 options: Copy+Deletion, and subextraction
- In Copy+Deletion approach, would have a copy of the full DP structure in SpecVoiceP at Spell-Out, as below:

(39)
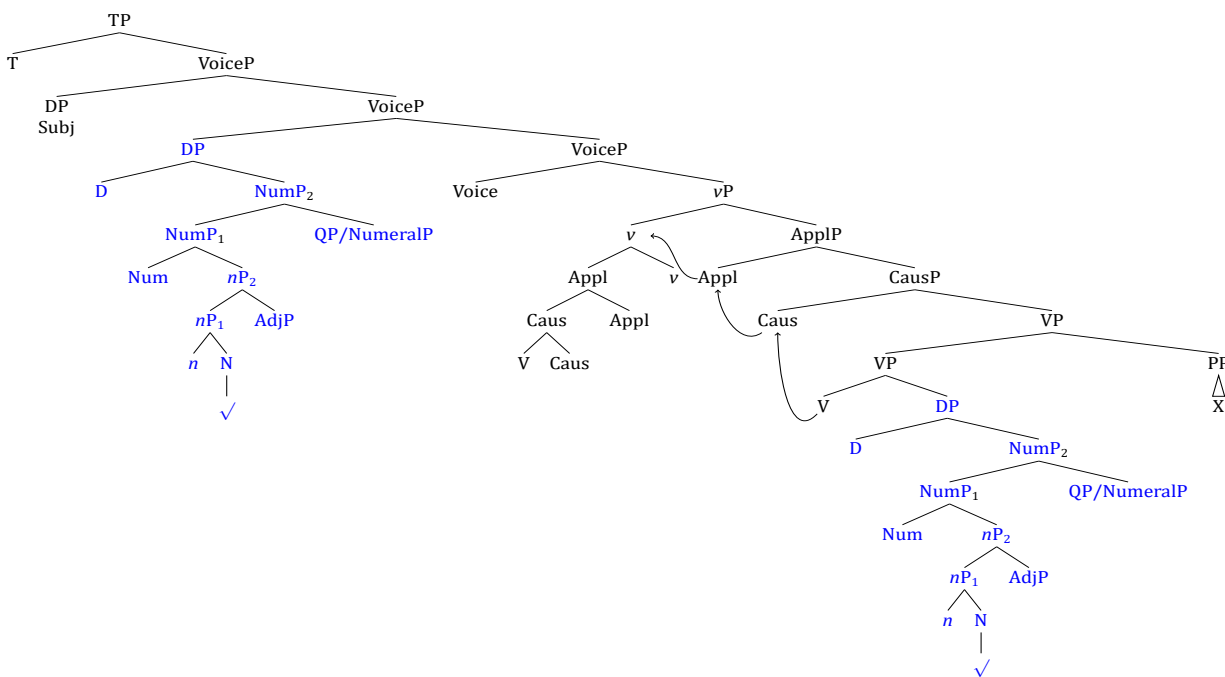
- The Copy+Deletion approach requires ellipsis at PF to avoid pronouncing noun and modifier in both DPs; the Tunen S-Aux-O-V-Mod construction should be derivable following constraints on ellipsis (assumption: only constituents can elide (e.g. as formalised with [E]-feature))
- For lower DP, can elide the nP constituent to leave only the modifier
- But for upper DP, what needs to be elided is not a constituent $\rightarrow$ problem for Copy+Deletion
- Subextraction analysis alternative: only a sub-XP of the DP A-moves to SpecVoiceP:

(40)
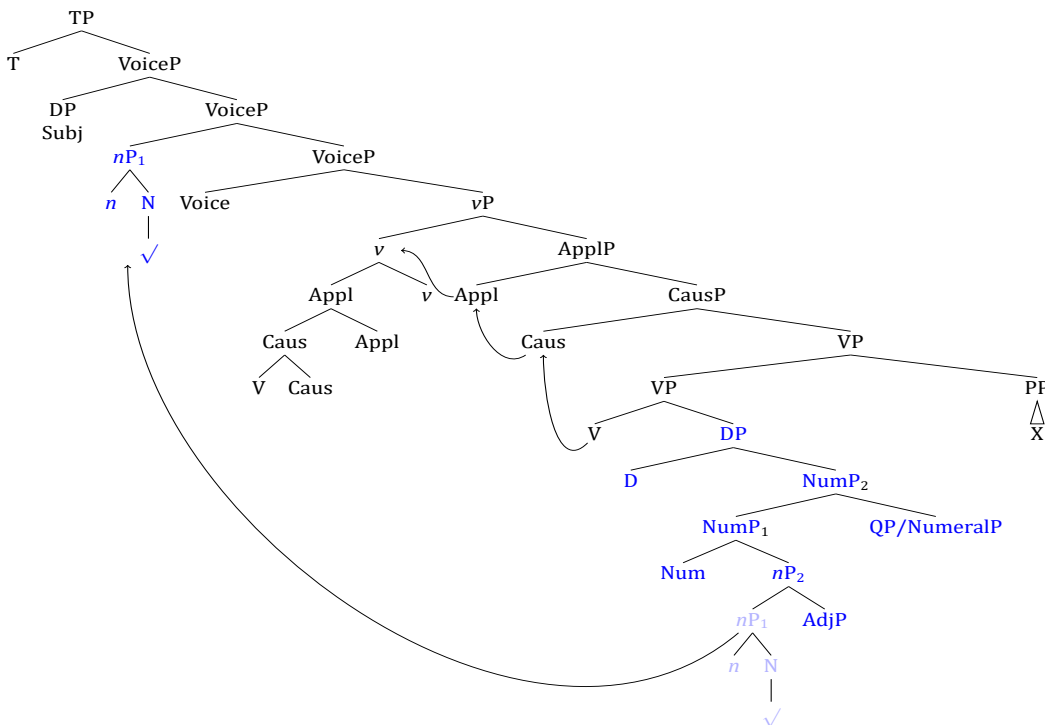
- The advantages of this movement approach:
    - Accounts for the S-Aux-O-V-Mod discontinuous DP construction through the independently-motivated mechanism of object movement
    - Aside from the word order, the verbal head movement + object movement analysis fits with analyses of the verbal domain in closely-related Bantu languages and correctly derives Tunen's verbal morphology; the presence of discontinuous DPs can be related to Tunen's recent innovation of OV order (Mous 2005, Kerr to appear)

5.2   Discussion/topics for further research

5.2.1   The details of the model

- Need to show how a Probe can find and attract a lower XP within the DP as Goal; this requires a general model of Probe-Goal relations in Tunen
- Need to allow optionality for maximal DP projection vs lower XP projection
    - NB: Some consultants dislike S-O-Mod-V constructions; others consider them grammatical. This could be related to a change in progress (given that OV syntax is innovative in Tunen; Mous 1997, Kerr to appear)
    - See also Kerr (in prep.) on S-V-O-Mod constructions: analysis 1: these have DP in-situ (but then how is it licensed?), analysis 2: these are derived through extraposition

5.2.2   Testing predictions re: multiple modifiers

- The movement analysis makes predictions about what can be split: accounts for adjectives, numerals and quantifiers all being possible; can be extended to cover associatives
- My fieldwork tested postnominal modifiers, as Tunen discontinuous DPs are always pull splits (i.e., matching the order of noun and modifier in contiguous DPs)
- ...but interaction between postnominal modifiers and prenominal modifiers (demonstrative/determiner/possessive pronoun) is important in order to test the analyses
- Specifically, the analysis currently predicts S-Aux-NP-V-D-Adj, rather than S-Aux-D-NP-V-Adj is possible (as prenominal modifiers do not form a constituent with the NP to the exclusion of adjectives/numerals/quantifiers)

    $\rightarrow$ needs to be tested empirically

- The analysis also makes predictions about multiple postnominal modifiers: (40) should allow N Adj ... Q but not e.g. N Q ... Adj, because only the former can be derived through movement of a phrasal constituent of the DP
- On subextraction account, it is problematic if non-constituents can be split; movement is expected to target an XP constituent containing N
- For Copy+Deletion, the issue relates to the mechanism of ellipsis (e.g. constituent deletion vs linear deletion)

    $\rightarrow$ again, needs to be tested empirically... further research needed!

5.2.3   Accounting for subject splits

- This talk has focussed on discontinuous DPs with objects (S-Aux-**O**-V-**Mod**)

- But we also saw examples with discontinuous modification of subject DPs, at least with quantifiers/numerals (e.g. (27))
- Issue for analysis: Tunen subjects taken to be base-generated in SpecVoiceP (Kerr in prep.; (40)), so any modifier of a subject DP is predicted to be linearised preverbally (NB: preverbal linearisation is indeed possible in Tunen, but discontinuous structures are also found)
- Empirical Q: can other modifiers (adjectives) be split for subjects? Note that all the examples seen have been with quantifier ('all') or numeral
- If no, and only quantifiers/numerals could be split, then these constructions may be analysed differently from those with adjectives (cf Q-float)
- If yes: More problematic for the analysis as presented here...

6   Conclusion

- Tunen (Bantu, Niger-Congo) has a crosslinguistically unusual type of discontinuous DP of form S-Aux-**O**-V-**Mod**, found with quantifiers/numerals/adjectives
- I show from field data that this construction is pragmatically-neutral, i.e. compatible with multiple IS contexts (not just focus on the modifier, *contra* expectation from prior literature)
- I propose that the discontinuous DP constructions arises as a side-effect of the innovation of disharmonic OV basic word order in Tunen, derived synchronically via formally conditioned A-movement of the object to SpecVoiceP
- I suggest that this can result in a discontinuous DP structure when only a subpart of the DP is moved to SpecVoiceP → object movement splits the noun phrase
- The discontinuous DP construction has implications for the analysis of Tunen clausal syntax: it provides evidence against a FOFC-style roll-up approach to the derivation of S-Aux-O-V-X word order in Tunen and supports a verbal head movement + object movement analysis

Acknowledgements

Glosses and abbreviations

Glosses: 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; DEM = demonstrative; DUR = durative; EMPH = emphatic (pronoun); FUT = future tense; H = high tone; HOD.PAST = hodiernal past tense; INF = infinitive; L = low tone; LOC = locative; NEG = negation; PST1 = first-degree past tense (just now); PST2 = second-degree past tense (hodiernal); PST3 = third-degree past tense (yesterday);POSS = possessive; PREP = preposition; PRON = pronoun; PROX = proximal; PRS = present tense; RECIP = reciprocal; REL = relative (marker); SM = subject marker; TAM = tense/aspect(/mood) marker

Abbreviations: Adj = adjective; Assoc = associative (=genitive, connective); Aux = auxiliary; C = complementiser node (pragmatic domain); DO = direct object; DP = determiner phrase; FOFC = Final Over Final Condition; Gen = genitive;

IO = indirect object; IS = information structure; Mod = modifier; O = object; Q = quantifier; S = subject; T = tense node (inflectional domain); TAM = tense/aspect/mood; TP = tense phrase (inflectional domain); V = verb; X = other (non-S/O arguments and adjuncts)

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