

# Formalizing three types of mixed A/ $\bar{A}$ agreement \*

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## 1 Introduction

- This research examines a typology of movement that has A and  $\bar{A}$  properties. I show that the variation we see can be explained by different probe specifications, introducing the notions of conjunctively and disjunctively satisfied probes.
  - A body of recent work has demonstrated the existence of syntactic positions/operations that show a mix of A and  $\bar{A}$  properties (Pesetsky and Torrego 2001; Aldridge 2004, 2008; Bennett 2009; Legate 2011; Aldridge 2017; Erlewine 2018; Bossi & Diercks 2019).
  - Various names for combined probes include ‘composite’, ‘fused’, ‘complex’, ‘mixed’, and others.
- I will adopt the featural view of phrasal movement (Van Urk 2015)
  - (1) Featural view of phrasal movement:  
Differences between movement types derive from independent properties of the feature(s) involved in Agree.
- Thus, the distinction between A and  $\bar{A}$  movement is simply the features the relevant probes are specified for.
  - This is contrast to a view in which A and  $\bar{A}$  movement are fundamentally different types of movement which target distinct positions (e.g. Chomsky 1981, 1995; Mahajan 1990; Déprez 1990; Miyagawa 2010).
- I examine various instances of mixed A/ $\bar{A}$  movement and propose three distinct types:
  1. **Two probes on one head** [SAT: A] [SAT:  $\bar{A}$ ]
    - *Behavior*: The two probes typically target one phrase with [A, $\bar{A}$ ] but can target two phrases, each with a relevant feature.
    - *Languages*: Kipsigis (Bossi & Diercks 2019) (also found in Dinka Bor (Van Urk 2015))
  2. **Conjunctive Satisfaction** [SAT: A and  $\bar{A}$ ]
    - *Behavior*: Only phrases with both features [A, $\bar{A}$ ] are targeted. Elements with one or the other do not satisfy the probe.
    - *Languages*: Ndengeleko (own field work) (also found in Khanty (Colley & Privoznov 2020))
  3. **Disjunctive Satisfaction** [SAT: A or  $\bar{A}$ ]
    - *Behavior*: The highest element with either [A] or [ $\bar{A}$ ] satisfies the probe:  $\bar{A}$  probing for the closest DP (Aldridge 2004, 2008; Brannon & Erlewine 2020b)
    - *Languages*: Austronesian, Mayan, Inuit (Aldridge 2004, 2008 and many others)
- To account for the last two types, I introduce the notions of conjunctive and disjunctive satisfaction.
  - Satisfaction condition: features cause the probe to stop probing (Deal 2015, 2020)
  - I propose that satisfaction conditions can be specified for at least two features, specified as conjunctive (and) or disjunctive (or).
- These notions extend to patterns of  $\phi$  agreement, providing support for this view.

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## Roadmap

- §2 Two probes on one head
- §3 Conjunctive satisfaction
- §4 Disjunctive satisfaction
- §5 Extension to other domains
- §6 Conclusion

## 2 Two probes on one head

### 2.1 Overview

- The main defining behavior of this type of mixed A/ $\bar{A}$  movement:  
If the  $\bar{A}$  element does not have the relevant A feature, two movements take place (highest  $\bar{A}$  element and highest A element).

(2) [SAT:A], [SAT: $\bar{A}$ ]

- Evidence for two probes on one head is found in Kipsigis.
  - ▷ Kipsigis is a Kalejin language of Kenya.
  - ▷ All data come from Bossi & Diercks 2019.

### 2.2 Kipsigis discourse driven word order

- Bossi & Diercks (2019) identify an after-verb position as the structural position for discourse prominence, indicated with the [ $\delta$ ] feature.<sup>1</sup>

- (3) a. S Kii- $\emptyset$ -goo-chi **ngo** <sub>$\delta, D$</sub>  Kibet kitabut?  
PST-3SG-give-APPL who Kibet book  
'Who gave Kibet a book?' Bossi & Diercks (2019, 8)
- b. DO Koo- $\emptyset$ -goo-chi **nee** <sub>$\delta, D$</sub>  Chepkoech Kibet?  
PST-3SG-give-APPL what Chepkoech Kibet?  
'What did Chepkoech give Kibet?' Bossi & Diercks (2019, 8)
- c. IO Kii- $\emptyset$ -goo-chi **ngo** <sub>$\delta, D$</sub>  Chepkoech kitabut?  
PST-3SG-give-APPL who Chepkoech book  
'Who did Chepkoech give a book?' Bossi & Diercks (2019, 8)

- Bossi & Diercks also observe that this discourse position is only for nominals (elements with [D]).
- This restriction is illustrated by comparing temporal adverbs, which have the nominal property of functioning as a subject shown in (4), and manner adverbs, which cannot.

- (4) Koo beetut nemie amut.  
PST day good yesterday  
'Yesterday was a good day.' Bossi & Diercks (2019, 9)

<sup>1</sup>For Ndengeleko data abbreviations include: 1,2,3 etc = noun class 1, noun class 2, noun class 3 etc, 1SG = first person singular, 2SG = second person singular, APPL = applicative, AUX = auxiliary, FV = final vowel, OM = object marker, POSS = possessive SM = subject marker. For all other data: 1 = first person, 2 = second person, 3 = third person, A=Set A (ergative and possessive) agreement, B= Set B (absolutive) agreement, AP=antipassive, DAT = dative, DIR=directional, DS=directional suffix, EXCL = exclusive, GEN = genitive, INCL = inclusive, LOC = locative, OBJ = object, NEG = negation, NF = nonfinite, NPST = nonpast, PART = participant, PASS = passive, PAT=patient, PFV = perfective, PL = plural, POT=potential, PROX=proximate aspect, PST = past, QUANT = quantifier, RN=relational noun, SG = singular

- Only temporal adverbs (nominal) can appear in the discourse prominent position after the verb:

(5) # $[\text{Koo-}\emptyset\text{-min}]_V$  **komie** $_{\delta}$  lagok bandek.  
 PST-3PL-plant well children maize  
 Int: 'The children planted the maize WELL.'

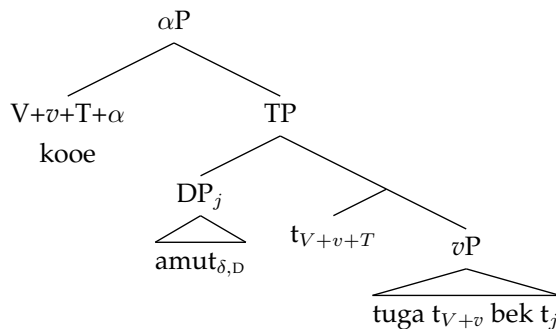
Bossi &amp; Diercks (2019, 9)

(6)  $[\text{Koo-}\emptyset\text{-e}]_V$  **amut** $_{\delta,D}$  tuga bek.  
 PST-3PL-drink yesterday cows water  
 'The cows drank water YESTERDAY.'

Bossi &amp; Diercks (2019, 9)

- Bossi & Diercks analyze the discourse prominent position as Spec,TP and the landing site of the verb as the functional projection above TP:

(7) Structure of (6)



- Though a single nominal with  $[\delta]$  moves to TP, instances of non-nominal discourse prominence lead to two movements.

### 2.3 Two movements

- » If a non-nominal is discourse prominent, the D and  $\delta$  features are found on separate elements within the domain of the probes on  $T^0$ .

(8) Non-nominal discourse prominence in Kipsigis

$[_{TP} \quad T^0 [\text{SAT}:\delta][\text{SAT}:D] \quad [ \quad [D] \quad [ \delta ] ] ]$

- In Kipsigis, this configuration is created when a manner adverb (non-nominal) like *komie* 'well' is discourse prominent.
- In these cases, the focused adverb is not immediately after the verb, but in a "secondary" after-verb position. The subject (highest nominal) immediately follows the verb.

(9)  $[\text{Koo-}\emptyset\text{-min}]_V$  lagok $_D$  **komie** $_{\delta}$  bandek.  
 PST-3PL-plant children well maize  
 'The children planted the maize WELL.'

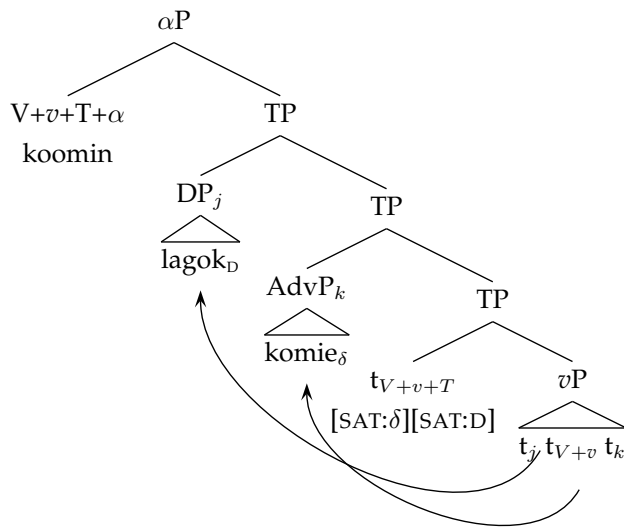
Bossi &amp; Diercks (2019, 18)

- Following Bossi & Diercks, I take this fact to indicate two movement operations.

- In Bossi & Diercks' analysis, the  $[\delta]$  probe goes first, and it has an EPP feature than can only be checked by  $[D]$ , prompting a second movement.

- Departing from their analysis, I argue that this reflects two separate probes on T.

(10) Two movements in Kipsigis (structure adapted from Bossi & Diercks (2019, 18))



(11) [Koo-∅-min]<sub>V</sub> lagok<sub>D</sub> **komie**<sub>δ</sub> bandek.  
 PST-3PL-plant children well maize  
 'The children planted the maize WELL.'

Bossi & Diercks (2019, 18)

## 2.4 When [D] and [δ] are found together

- When a discourse prominent nominal is present, one movement takes place.

(12) Nominal discourse prominence in Kipsigis

[<sub>TP</sub> T<sup>0</sup> [SAT:δ][SAT:D] [ [D,δ] ... ]]

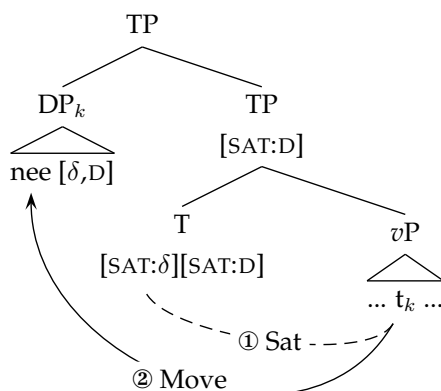
(13) DO Koo-∅-goo-chi **nee**<sub>δ,D</sub> Chepkoech Kibet?  
 PST-3SG-give-APPL what Chepkoech Kibet?  
 'What did Chepkoech give Kibet?'

Bossi & Diercks (2019, 8)

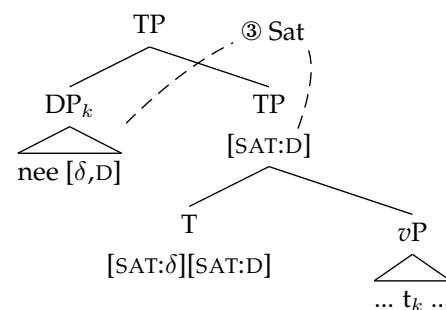
- How do two independent probes seem to act 'together' to move one element?

▷ Cyclic Agree (Rezac 2003, Béjar & Rezac 2009): when a head reprojects to an intermediate position, an unsatisfied probe on the given head will reproject as well.

(14) [SAT:δ] is satisfied by and moves DP



(15) [SAT:D] reprojects



- Derivational steps with crucial timing:
  - Merge: T is merged with two probes
  - 1. Agree: The [SAT: $\delta$ ] probe probes first and is satisfied by *nee* [ $\delta$ ,D].
  - 2. Move: *nee* [ $\delta$ ,D] moves to Spec,TP
    - The intermediate TP created by movement of *nee* [ $\delta$ ,D] carries the [SAT:D] probe.
    - The [SAT:D] probe's new c-command domain includes *nee* [ $\delta$ ,D]
  - 3. Agree: *nee* [ $\delta$ ,D] which satisfies the [SAT:D] probe.
    - (Move: String vacuous movement of *nee* [ $\delta$ ,D] to Spec,TP.)
- ▷ This two independent probe mixed A/ $\bar{A}$  system of movement can be found in Dinka Bor cyclic movement through *v*P as well (Van Urk 2015).

### 3 Conjunctive satisfaction

#### 3.1 Overview

- The main defining behavior of this type of mixed A/ $\bar{A}$  movement:  
If the  $\bar{A}$  element does not have the relevant A feature, the construction is ruled out. Both features must be found together to satisfy the probe.

(16) [SAT: A **and**  $\bar{A}$ ]

- Evidence for conjunctive satisfaction is found in Ndengeleko.
  - ▷ Ndengeleko is an endangered Bantu language spoken in Tanzania.
  - ▷ All Ndengeleko data not cited come from my own fieldwork in the Rufiji region of Tanzania between 2017-2019.

#### 3.2 Structural focus position

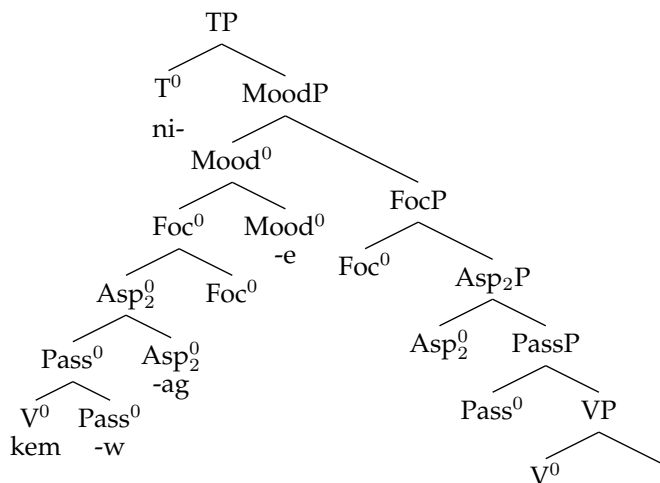
- The baseline word order in Ndengeleko is S-V-DO-IO-X.

(17) Hadiya<sub>S</sub> [a-m-pakul-i-a]<sub>V</sub> mbaa<sub>DO</sub> Kusokuwa<sub>IO</sub> pa-ki-inza<sub>LOC</sub>.  
 Hadiya 1.SM-1.OM-serve-APPL-FV 9.rice Kusokuwa 16-7-kitchen  
 'Hadija is serving Kusokuwa rice in the kitchen'

- I assume that the verb root moves to the edge of the verbal domain (Julien 2002), which Myers (1990) dubs Mood<sup>0</sup>. Heads between V<sup>0</sup> and Mood<sup>0</sup> appear as suffixes in reverse merge order:

(18) Ni-kem-w-ag-e...  
 1SG-call-PASS-IMP-FV  
 'I was being called...'

## (19) Ndengeleko clause structure



» Focused elements appear in a dedicated structural position which is linearly immediately following the verb. The pattern is illustrated with subject, indirect object, and adverbial *wh*- words in (20).

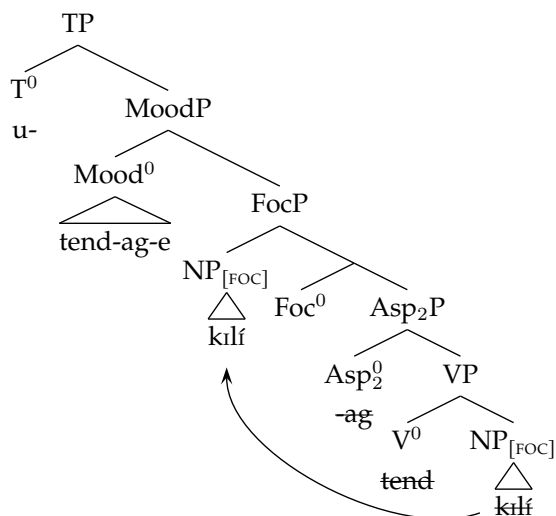
- (20) a. S [A-teleka]<sub>V</sub> **nyai**?  
1SM-cook who  
'Who is cooking?'
- b. IO [U-m-pa-ya]<sub>V</sub> **nyai** kilyó?  
1.SG.SM-1OM-give-APPL who food  
'Who are you giving food to?'
- c. Adv Halima [a-a-lenga]<sub>V</sub> **líniki** itunguu?  
Halima 1SM-PST-peel when onions  
'When will Halima peel onions?'

- I follow Aboh (2007) and Van der Wal (2006) in positing a low FocusP immediately below the final landing site of the verb.<sup>2</sup>

- (21) [U-tend-ag-e]<sub>V</sub> **kílf**?  
2SG-do-IMP-FV what  
'What were you doing?'

<sup>2</sup>This focus position has been referred to as the immediately after verb position (IAV) and is commonly found in Bantu languages (Watters 1979, Hyman & Polinsky 2009, Hyman 2010 for Aghem, Buell 2005 for Zulu; and Van der Wal 2009 for Makhuwa).

(22) Low focus movement



### 3.3 Focus movement is restricted to nominals

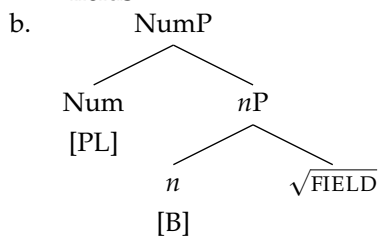
- The main diagnostic for nominals is the presence of a noun class marker.
  - ▷ Carstens (2005) analyzes noun classes in Bantu as the combination of grammatical gender and number.

Table 1: Noun Class is Number and Gender

	Singular	Plural
Gender A	Noun Class 1	Noun Class 2
Gender B	Noun Class 3	Noun Class 4
Gender C	Noun Class 5	Noun Class 6
Gender D	Noun Class 7	Noun Class 8
Gender E	Noun Class 9	Noun Class 10

- ▷ Van der Wal & Fuchs (2019) analyze Bantu noun class prefixes as the joint spell out of  $n$  and Num (following Kramer 2015).

(23) a. mi-gũnda  
4-field  
'fields'



c. mi  $\longleftrightarrow$  [Num:PL, $n$ :B]  
gũnda  $\longleftrightarrow$   $\sqrt{\text{FIELD}}$

- Thus, we establish that noun class markers indicate the presence of  $[n]$ , the morphological reflex of an  $n$  projection.

#### 3.3.1 Adverbs are nominals

- Subjects and objects clearly possess noun class prefixes and are therefore nominal.

- Unlike Kipsigis, both manner and temporal adverbs are nominal as well, as they appear with noun class prefixes<sup>3</sup>

Table 2: Noun class prefixes on adverbs

<b>li-iso</b>	5-yesterday
<b>li-ino</b>	5-today
<b>ma-alabu</b>	6-tomorrow
<b>bw-iso</b>	14-well
<b>ka-ndende</b>	12-slowly

▷ In addition, temporal adverbs can be possessed, further suggesting their nominal status.<sup>4</sup>

(24) li-iso y-aake  
5-yesterday 9-1.POSS  
'the previous day' lit: 'its yesterday'

(25) ma-alabu y-aake  
6-tomorrow 9-1.POSS  
'the next day' lit: 'its tomorrow'

- Locative phrases include a locative noun class prefix which Van der Wal & Fuchs analyze as an additional *n* with locative gender stacking on top of the NumP.

(26) a. pa-ki-inza  
16-7-kitchen  
'in the kitchen'

b.

```

graph TD
    nP1[nP] --- n1[n]
    nP1 --- NumP1[NumP]
    n1 --- LOC["[LOC]"]
    NumP1 --- Num1[Num]
    NumP1 --- nP2[nP]
    Num1 --- SG["[SG]"]
    nP2 --- n2[n]
    nP2 --- nP3["√KITCHEN"]
    n2 --- D["[D]"]
  
```

c. pa ↔ [*n*:LOC]  
ki ↔ [Num:SG,*n*:D]  
inza ↔ √KITCHEN

### 3.4 Conjunctive satisfaction: [FOCUS and *n*]

- I adopt an interaction/satisfaction theory of Agree in which probes have two specifications (Deal 2015):
  - ▷ Interaction condition: the set of features that a probe copies back.
  - ▷ Satisfaction condition: the set of features that causes a probe to stop probing.

» Specification of the probe on  $\text{Foc}^0$  in Ndengeleko:<sup>5</sup>

[SAT: FOCUS and *n*]

<sup>3</sup>This is found across Bantu as well; see Cope 1957 and Mathonsi 2001.

<sup>4</sup>In the adverbial possessive contexts, the agreement on the possessor is always *y-*, which Strom (2013) shows is the agreement for gender [E] which collapses the sg/pl distinction and is called class 9/10. She also shows that borrowed words tend to show class 9/10 morphology and agreement. I take from this that class 9/10 represent default noun classes, and that the agreement in (24) and (25) is thus default agreement.

<sup>5</sup>The interaction condition simply must include FOCUS and *n*.



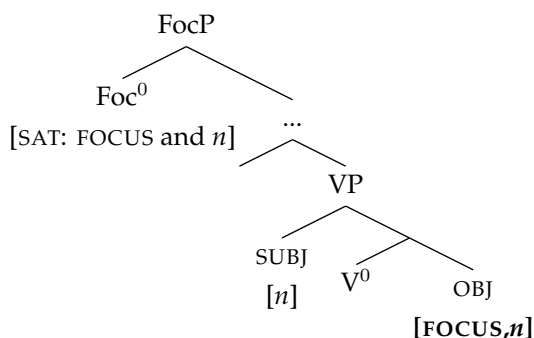
### 3.5 Only focused nominals satisfy the probe

- Evidence for conjunction of [SAT: FOCUS and  $n$ ]:
  - $\chi[n]$ : **Non-focused** nominals are skipped.
  - $\chi$ [FOCUS]: **Non-nominal** focused elements are skipped.
  - $\chi$  []: The absence of any focused nominal is ungrammatical.

#### 3.5.1 Skipping of a non-focused nominal

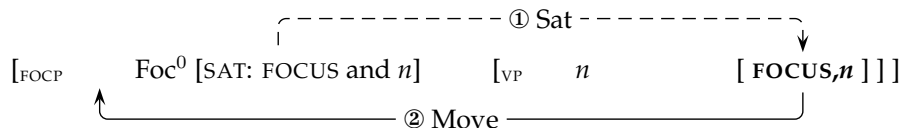
- Intervening nominals without an  $\bar{A}$  feature do not interfere with the probe. The probe will continue probing until it finds a focused nominal.
- Direct object focus illustrates this configuration:

(27) Direct object focus



(28) Habiba<sub>n</sub> [a-telek-a]<sub>V</sub> kɪlɪ<sub>FOC,n</sub>?  
 Habiba 1.SM-cook-FV **what**  
 'What is Habiba cooking?'

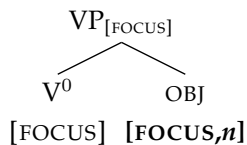
(29) Skipping of non-focused nominals



#### 3.5.2 Skipping of a focused non-nominal

- When a non-nominal bears a focus feature, it does not satisfy the probe.
  - VP focus illustrates this non-nominal focus.
- In cases of VP focus, I assume each element in the VP bears a focus feature (similar proposals are given in Kenesei 1993, 1998 for VP focus).

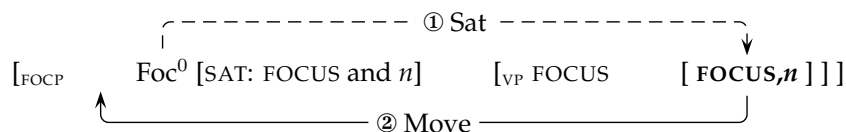
(30) VP focus



- In VP focus, the **direct object** is the target for focus movement.
  - The VP is the constituent in focus, but the object is the only focused *nominal*.<sup>6</sup>

- (31) VP focus
- a. Habiba [a-tend-a]<sub>V</sub> kilí?  
Habiba 1.SM-do-FV what  
'What is Habiba doing?'
- b. [A-pul-a]<sub>V,FOC</sub> ngóbô<sub>FOC,n</sub>.  
1.SM-wash-FV 9.clothes  
'Shes WASHING CLOTHES.'

- (32) Skipping of focused non-nominal V<sup>0</sup>

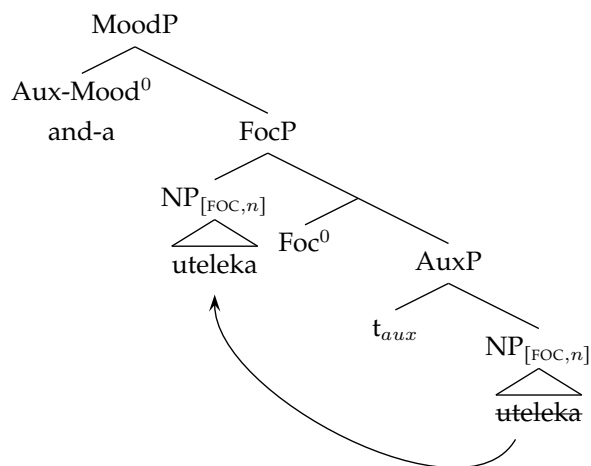


### 3.5.3 No focused nominal

- In verb focus, there is no focused nominal
  - The verb must be nominalized and move immediately after an auxiliary verb.<sup>7</sup>
  - This is a novel analysis of so called 'disjoint' verb forms in Bantu (see Van der Wal (2016) for an overview of the phenomenon).

- (33) *Nandóteleká pilau*.<sup>8</sup>
- a. [N-and-á]<sub>V</sub> ú-telek-a pilau.  
[1SG.SM-AUX-FV]<sub>V</sub> 15-cook-FV rice.  
'I am COOKING rice.'

- (34) Nominalized verb focus



<sup>6</sup>This constitutes an example of 'anti-pied-piping' from Brannon and Erlewine (2020a) in which the element that is moved is a sub-constituent of the element which hosts the relevant feature.

<sup>7</sup>The (*k*)*u*- noun class 15 prefix creates the infinitive form of the verb, allowing the nominalized verb to be in subject position and trigger class 15 subject agreement on the main verb.

<sup>8</sup>Strom (2013) shows that the final vowel *a* and the nominalizing (noun class 15) prefix *u* undergo fusion, pronounced as *o*. Accepting Strom's analysis of *o*, verb focus forms will appear throughout the paper in this underlying structural representation, though the reader should know that *a-u* sequences are pronounced as *o*.

- Constructions which lack any focused element are also ungrammatical in Ndengeleko.

(35) \*[N-delek-a]<sub>V</sub>.  
1SG.SM-cook-FV  
Int: 'I am cooking.'

(36) No satisfaction in (35):

$\bar{A}$  --- ~~X~~ No Satisfaction ---  $\rightarrow$   
 $\uparrow$   
<sub>[FOCP]</sub> Foc<sup>0</sup> [SAT: FOCUS and *n*]      [<sub>VP</sub> S<sub>n</sub>      [V      ]]]

- I follow Preminger (2014) and others by assuming that Agree as operation can fail without crashing the derivation.

▷ The derivation crashes in (35) because nothing was moved and Spec,FocP is left empty.

(37) EPP on Spec,FocP: The specifier of FocP must be filled.

▷ In order to express intransitive verbs, they must be nominalized and appear immediately after an auxiliary verb, creating the same structure as verb focus:

(38) [N-and-á]<sub>V</sub>      **ú-telek-a.**  
[1SG.SM-AUX-FV]<sub>V</sub> **15-cook-FV.**  
'I am COOKING.'

- This, then, lays out a three way Agree-Movement-EPP relationship in which the specifications of each can vary:

▷ **Agree** establishes dependencies and copies back features (that may end up being spelled out as agreement).

⊙ *Ndengeleko* Foc<sup>0</sup>: [SAT: FOCUS and *n*]

▷ **Movement Instructions:** A probe's instructions about which element to move.

⊙ *Ndengeleko* Movement instructions on Foc<sup>0</sup>: Move the element which meets the satisfaction condition.

▷ **EPP:** A requirement (filter) that a position cannot be empty.

⊙ *Ndengeleko* EPP on Foc<sup>0</sup>: Spec,FocP cannot be empty.

» The conjunctive satisfaction system of A/ $\bar{A}$  movement can also be found in Khanty, where [TOPIC and  $\phi$ ] must be found together, which Colley & Privoznov (2020) refer to as a "composite  $\phi$ /TOP probe".

## 4 Disjunctive satisfaction

- The main defining behavior of this type of mixed A/ $\bar{A}$  movement:  
If an A-only element intervenes between the probe and the  $\bar{A}$  element, agreement with  $\bar{A}$  element is blocked.

(39) [SAT: A **or**  $\bar{A}$ ]

- Disjunctive satisfaction can account for a generalization from Aldridge (2004,2008) regarding syntactic ergativity:<sup>9</sup>

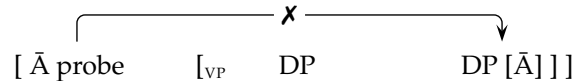
(40)  $\bar{A}$  probing for the closest DP:  
An  $\bar{A}$  probe can be specified to target the closest accessible DP.

<sup>9</sup>Brannon & Erlewine (2020b) extend the Aldridge generalization to non-ergative languages.

(41) Closest DP: grammatical



(42) Intervening DP: ungrammatical



- Evidence for this type of restriction comes from certain languages which show syntactic ergativity.

– In many ergative languages (e.g. in Mayan, Austronesian, and Inuit families), only absolutes can undergo  $\bar{A}$  extraction (see Deal 2016 for an overview).

(43)  $\checkmark$  Intransitive subject extraction Mam (England 2017)

- a. Ma chi b'eet xiinaq.  
PROX B3PL walk men  
 'The men walked.'
- b. **Aa xiinaq** ma chi b'eet.  
DEM men PROX B3PL walk men  
 'It was the men who walked'

(44)  $\checkmark$  Transitive object extraction Mam (England 2017)

- a. Ma chi kub' ky-tzyu-'n xiinaq cheej.  
PROX B3PL DIR A3PL-grab-DS men horse  
 'The men grabbed the horses.'
- b. **Aa cheej** ma chi kub' ky-tzyu-'n xiinaq.  
DEM horse PROX B3PL DIR A3PL-grab-DS men  
 'It was the horses that the men grabbed.'

(45) \*Transitive subject extraction Mam (England 2017)

- \***Aa xiinaq** ma chi kub' ky-tzyu-'n chej.  
DEM men PROX B3PL DIR A3PL-grab-DS horse  
 Intended: 'It was the men who grabbed the horses.'

(46)  $\checkmark$  Antipassive to extract transitive subject Mam (England 2017)

- Aa xiinaq** ma chi tzyuu-n ky-i'j chej.  
DEM men PROX B3PL grab-AP A3PL-RN:PAT horse  
 Intended: 'It was the men who grabbed the horses.'

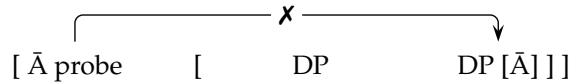
- In the "standard" theory of syntactic ergativity, the absolutive object moves to a structural position above the ergative subject (Deal 2016).<sup>10</sup>



- This creates an intervening DP between an  $\bar{A}$  probe and the ergative subject.

<sup>10</sup>Examples of this type of analysis: Campana 1992, Murasugi 1992, Ordóñez 1995, Bittner and Hale 1996, Coon et al. 2014, Assmann et al. 2015, Levin 2018, and Coon et al. 2020.

(48) Intervening absolutive DP

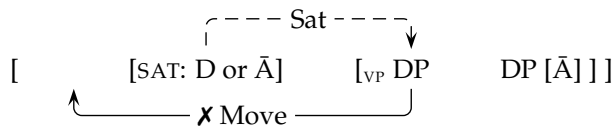


- A puzzling question: why would an  $\bar{A}$  probe be restricted to the closest DP?
  - Recent work in Mayan has adopted various answers to this question (Levin, 2018; Coon, Baier, and Levin, 2020).
- I propose that the  $\bar{A}$  probe in these cases is **disjunctively satisfied**:

(49) The most local instance of *either* [D] or [ $\bar{A}$ ] will satisfy the probe: [SAT: D or  $\bar{A}$ ]

- Movement instructions
  - The [SAT: D or  $\bar{A}$ ] probe in Mayan only moves elements with  $\bar{A}$ .

(50) Satisfaction without movement



- The DP in (50) satisfies the probe but cannot be moved. I propose this is because it lacks an  $\bar{A}$  feature.

(51)  **$\bar{A}$  satisfaction-movement generalization:**  
 $\bar{A}$  probes can only move  $\bar{A}$  elements.

- Accounting for the ungrammaticality: EPP
  - Recall: the focus position in Ndenengeleko came with an EPP: leaving it empty resulted in ungrammaticality
  - We must say the same for the construction in (50): movement is infallible (the  $\bar{A}$  position has an EPP feature).
- » Brannon & Erlewine (2020b) account for non-ergative subject-only extraction restrictions with the same generalization from Aldridge:  $\bar{A}$  probing for the closest DP. These cases are further examples of disjunctive A/ $\bar{A}$  satisfaction.

## 5 Conjunctive and disjunctive satisfaction in $\phi$ agreement

### 5.1 Conjunctive satisfaction in Mi'gmaq

- » A probe with a conjunctive satisfaction condition can be found in  $\phi$  agreement as well.
- Coon & Bale (2014) show that in Mi'gmaq (Eastern Algonquian), Infl agrees with the subject *u* unless there is a first or second person plural (PART-PL) argument, which then control Infl agreement.<sup>11</sup>

<sup>11</sup>If both arguments are PART-PL, Infl agree with 1PL. This hierarchy can be captured by stacking two probes above the subject (below Infl). The closest probe attracts 1PL and the higher probe attracts PART-PL (both with conjunctive satisfaction conditions). If the clause contains no PART-PL, Infl agrees with the subject.

(52) Infl agreement pattern in Mi'gmaq (Coon & Bale 2014, 93)

SUBJECT	>	OBJECT
PART-PL		{ 1, 2, 3, 3PL }
SUBJECT	>	OBJECT
{ 1, 2, 3, 3PL }		PART-PL

(53) PART-PL subject

- a. Mu nemi-a-w-**gw**-ig.  
 NEG see-3OBJ-NEG-1INCL-3PL  
 'We<sub>INCL</sub> don't see them.'

(Coon & Bale 2014, 89)

(54) PART-PL object

- a. Mu nem-u'ln-u-**oq**.  
 NEG see-2.OBJ-NEG-2PL  
 'I don't see **you**<sub>PL</sub>.'

(Coon & Bale 2014, 95)

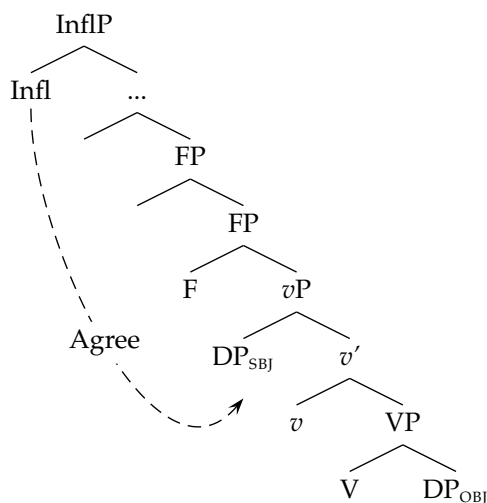
- Participant or plural features alone are not enough to trigger Infl agreement with the object. (No data is provided on what happens in (1,2,3>3PL).

- (55) Mu nem-i'li-w-**g**.  
 NEG see-1OBJ-NEG-3  
 'She doesn't see me.'

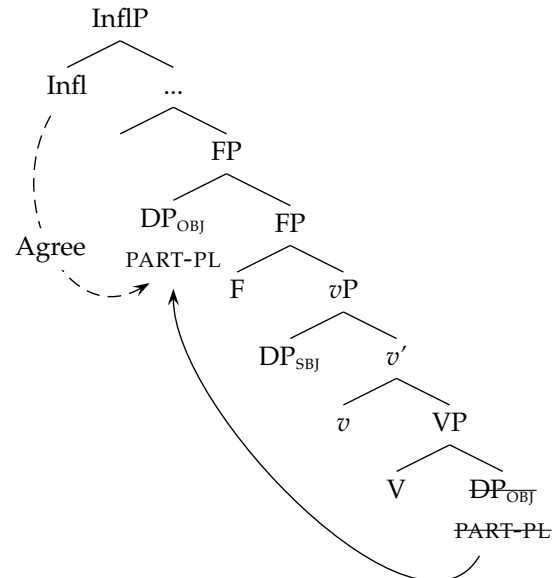
(Coon & Bale 2014, 89)

- Coon & Bale (2014) account for the pattern by positing movement of an argument with specific features above the subject. This argument becomes the most local to Infl for agreement (trees adapted from example 45, page 98).

(56) Mi'gmaq subject agreement (1,2,3,3PL)



(57) Mi'gmaq object agreement (PART-PL)



- Coon & Bale propose separate person and number probes above  $vP$  which search and find goals independently, but must communicate to only move one 'best match'.
- We can formalize this aspect of agreement in Mi'gmaq as a conjunctive satisfied probe on F:

(58) [SAT: PART and PL]

## 5.2 Disjunctive satisfaction in Äiwoo

- Roversi (2020) argues that a disjunctive  $\phi$  probe is present in Äiwoo.
  - Either a second person feature (ADDR) or a plural feature (AUG) will halt the probe.
- The verb can agree with both the subject and object as in (59), where the subject is 1st person singular and (60) where the subject is 3rd person singular.

(59) a. i-togulo-**nee-mu**  
PFV-hit-1SG-2SG  
'I hit you.'

b. i-togulo-**nee-mi**  
PFV-hit-1SG-2PL  
'I hit you (pl.).'

(60) a. i-togulo-**gu-mu**  
PFV-hit-GU-2SG  
'(S)he hit you.'

b. i-togulo-**gu-i**  
PFV-hit-GU-3PL  
'(S)he hit them.'

- If the subject is either second person or plural, verbal agreement is only with the subject.

(61) a. i-togulo-**mu** iu  
PFV-hit-2sg 1SG  
'You hit me.'

b. i-togulo-**ngopu** iumu  
PFV-hit-1pl 2SG  
'We hit you.'

c. i-togulo-**i** iungopu  
PFV-hit-3pl 1PL  
'They hit us.'

- When the probe in Äiwoo reaches either ADDR or AUG the search is halted (the probe is satisfied). The remaining pronominal argument is spelled out at a pronoun.

▷ Roversi writes the probe in Äiwoo as:

(62) Probe responsible for agreement:  
[SAT: ADDR  $\vee$  AUG]

- Similar evidence can be found in patterns of  $\phi$  agreement in Svan, for which Bondarenko & Zompì (2020) argue that the highest  $\phi$  probe is satisfied by [PART] or [PL].

## 6 Conclusion

- In this presentation, I identified three types of mixed A/ $\bar{A}$  movement:

### 1. Two probes on one head [SAT: A] [SAT: $\bar{A}$ ]

- *Behavior*: The two probes typically target one phrase with [A, $\bar{A}$ ] but can target two phrases, each with a relevant feature.
- *Languages*: Kipsigis (Bossi & Diercks 2019) (also found in Dinka Bor (Van Urk 2015))

## 2. Conjunctive Satisfaction [SAT: A and $\bar{A}$ ]

- *Behavior*: Only phrases with both features [A, $\bar{A}$ ] are targeted. Elements with one or the other do not satisfy the probe.
- *Languages*: Ndengeleko (own field work) (also found in Khanty (Colley & Privoznov 2020))

## 3. Disjunctive Satisfaction [SAT: A or $\bar{A}$ ]

- *Behavior*: The highest element with either [A] or [ $\bar{A}$ ] satisfies the probe:  $\bar{A}$  probing for the closest DP (Aldridge 2004, 2008; Brannon & Erlewine 2020b)
- *Languages*: Austronesian, Mayan, Inuit (Aldridge 2004, 2008 and many others)

- The notions of conjunctive and disjunctive satisfaction extend to patterns of  $\phi$  agreement, providing support for this view.
- Traditional implementations of Agree which model probes as uninterpretable features (Chomsky 1995, 2001) do not have the built-in machinery to account for the full variation we see in probe structures.
  - ▷ By contrast, the typology is captured nicely in the interaction/satisfaction model of Agree (Deal 2015).

## References

- Aboh, E. O. 2007. Leftward focus versus rightward focus: the Kwa-Bantu conspiracy. *SOAS WPiL*, 15, 81–104.
- Aldridge, E. 2004. Ergativity and word order in Austronesian languages. Doctoral dissertation, Cornell University, Ithaca, NY.
- Aldridge, E. 2008. Generative approaches to ergativity. *Language and Linguistic Compass: Syntax and Morphology* 2:966–995.
- Aldridge, E. 2017.  $\phi$ -feature competition: A unified approach to the Austronesian extraction restriction. In *Proceedings of the 52nd meeting of the Chicago Linguistics Society (CLS)*, ed. Orest Xherija Jessica Kantarovich, Tran Truong, volume 52. Chicago Linguistic Society.
- Assmann, A, D. Georgi, F. Heck, G. Muller, and P. Weisser. 2015. Ergatives move too early: On an instance of opacity in syntax. *Syntax* 18:343–387.
- Baier, N. B. 2018. Anti-Agreement Doctoral dissertation, University of California, Berkeley.
- Béjar, S., and M. Rezac. 2009. Cyclic Agree. *Linguistic Inquiry* 40:35–73.
- Bennett, W. G. 2009. Two subject asymmetries in Defaka focus extraction. New Brunswick, NJ: Rutgers University, ms.
- Bittner, M., and K. Hale. 1996. Ergativity: towards a theory of a heterogeneous class. *Linguistics Inquiry* 27:531–604
- Bondarenko, T., & Zoppi, S. 2020. Leftover Agreement: Spelling Out Kartvelian Number. Handout of talk given online at *GLOW*.
- Bossi, M., & Diercks, M. 2019. V1 in Kipsigis: Head movement and discourse-based scrambling. *Glossa: a journal of general linguistics*, 4(1). *Linguistic Inquiry* 27:531–604.
- Brannon, K. & Erlewine, M. 2020a. Anti-pied-piping [lingbuzz/005351](https://lingbuzz/005351)
- Brannon, K. & Erlewine, M. 2020b.  $\bar{A}$ -probing for the closest DP. [lingbuzz/005211](https://lingbuzz/005211).
- Buell, L. C. 2005. *Issues in Zulu Morphosyntax*. Ph. D. thesis, University of California, Los Angeles.
- Campana, M. 1992. A movement theory of ergativity. Doctoral Dissertation, McGill University, Montreal.
- Carstens, V. 2005. Agree and EPP in Bantu. *Natural Language and Linguistic Theory* 23: 219-279.
- Chomsky, N. 1981. *Lectures on government and binding*. Foris.
- Chomsky, N. 1995. *The minimalist program*. MIT Press.
- Chomsky, N. 2001. Derivation by phase. In *Ken Hale: A Life in Language*, ed. M. Kenstowicz, 152. Cambridge, MIT Press.
- Colley J. & Privoznov, D. 2020. On the topic of subjects: composite probes in Khanty. *Proceedings of the 50th annual meeting of the North East Linguistic Society (NELS)*. UMass Amherst: GLSA Publications.
- Coon, J., & Bale, A. 2014. The interaction of person and number in Migmaq. *Nordlyd*, 41(1), 85-101.
- Coon, J., Pedro, P. M., & Preminger, O. 2014. The role of case in A-bar extraction asymmetries: Evidence from Mayan. *Linguistic Variation*, 14(2), 179-242.
- Coon, J., Baier, N., & Levin, T. 2020. Mayan Agent Focus and the Ergative Extraction Constraint: Facts and Fictions Revisited. Manuscript.



- Cope, A. T. 1957. The grammatical structure of Zulu. *African Studies*, 16(4), 210-220.
- Deal, A. R. 2015a. Interaction and satisfaction in  $\phi$ -agreement. In *Proceedings of NELS 45*, eds. Thuy Bui and Deniz Ozyildiz, 179-192. Amherst: GLSA.
- Deal, A. R. 2015b. Interaction and satisfaction in  $\phi$ -agreement. Handout of talk presented at Interaction of Grammatical Building Blocks colloquium, Universitat Leipzig.
- Deal, A. R. 2016. Syntactic ergativity: Analysis and identification. *Annual Review of Linguistics* 2:1–21.
- Demuth, K. & Mmusi, S. 1997. Presentational focus and thematic structure in comparative Bantu. *Journal of African Languages and Linguistics*, 18:1–19.
- Déprez, V. 1989. *On the typology of syntactic positions and the nature of chains*. Doctoral dissertation, MIT.
- England, N. C. 2017. Mam. In *The Mayan Languages*. Ed. by Judith Aissen, Nora England, and Roberto Zavala Maldonado. Routledge.
- Erlewine, M. Y. 2018. Extraction and licensing in Toba Batak. *Language*, 94(3):662-697.
- Halle, M., and A. Marantz 1993. "Distributed Morphology and the Pieces of Inflection, in K. Hale and S. Keyser, eds., *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, MIT Press, Cambridge, MA, 111-176.
- Hyman, L. M., & Polinsky, M. 2009. Focus in Aghem. UC Berkeley and Harvard University.
- Hyman, L. M. (2010). Focus marking in Aghem: Syntax or semantics. The expression of information structure: A documentation of its diversity across Africa, 95-116.
- Julien, M. 2002. *Syntactic Heads and word formation*. Oxford University Press, Oxford.
- Kenesei, I. 1998. Adjuncts and arguments in VP-focus in Hungarian. *Acta Linguistica Hungarica*, 45(1), 61–88.
- Kenesei, I. 1993. A minimalist program for the syntax of focus. Unpublished manuscript, University of Szeged and University of Delaware.
- Kramer, R. (2015). *The morphosyntax of gender* (Vol. 58). Oxford University Press.
- Legate, J. A. 2011. Under-inheritance. Paper presented at (NELS) 42, University of Toronto.
- Levin, T. 2018. K'ichean syntactic ergativity: Locality and intervention in A'-movement. Manuscript, National University of Singapore.
- Mahajan, A. 1990. *The A/ $\bar{A}$ -distinction and movement theory*. Doctoral dissertation, MIT.
- Mathonsi, N. N. 2001. Prepositional and adverb phrases in Zulu: a linguistic and lexicographic problem. *South African Journal of African Languages*, 21(2), 163-175.
- Miyagawa, S. 2010. *Why Agree? Why Move?* MIT Press.
- Murasugi, K. 1992. Crossing and nesting paths: NP movement in accusative and ergative languages. Doctoral Dissertation, Massachusetts Institute of Technology.
- Myers, S. 1990. *Tone and the structure of words in Shona*. New York: Garland.
- Ordóñez, Francisco. 1995. The antipassive in Jacalteco: A last resort strategy. *Catalan Working Papers in Linguistics* 4:329–343.
- Pesetsky, D., Torrego, E. 2001. T-to-C movement: Causes and consequences. *Current Studies in Linguistics Series*, 36, 355–426.
- Preminger, O. 2014. *Agreement and its failures* (Vol. 68). MIT Press. Cambridge, MA.
- Rezac, M. 2003. The fine structure of cyclic Agree. *Syntax*, 6(2), 156-182.
- Roversi, Giovanni. 2020. How to satisfy probes: person/number hierarchy effects in Äiwoo. In *Proceedings of NELS 50*, ed. Mariam Asatryan, Yixiao Song, and AyanaWhitmal, volume 3, 99–112.
- Strom, E. 2013. The Ndengeleko language of Tanzania. PhD dissertation: University of Gothenburg.
- Ordóñez, Francisco. 1995. The antipassive in Jacalteco: A last resort strategy. *Catalan Working Papers in Linguistics* 4:329-343.
- van der Wal, J., & Fuchs, Z. 2019. Gender on n in Bantu DP structure: from root-derived nominals to locatives.
- van der Wal, J. 2006. The disjoint verb form and an empty Immediate After Verb position in Makhuwa. *ZAS Papers in Linguistics*, 43, 233-256.
- van der Wal, J. 2009. *Word order and information structure in Makhuwa-Enahara*. Utrecht: LOT.
- van der Wal, J. 2016. What is the conjoint/disjoint alternation? Parameters of crosslinguistic variation. *The conjoint/disjoint alternation in Bantu*. Berlin, 14-60.
- van Urk, C. 2015. A uniform syntax for phrasal movement: A case study of Dinka Bor (Doctoral dissertation, Massachusetts Institute of Technology, Department of Linguistics and Philosophy).
- Watters, J. 1979. Focus in Aghem. In: L. Hyman (ed.) *SCOPE 1 Aghem Grammatical Structure*. Los Angeles: University of Southern California.