

Two types of “composite” probes *

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1 Introduction

- While many agreement and movement phenomena seem to target one feature there are many other cases in which the Agree operation seems to target more than one feature.

(1) $[X^0 \text{ uF} \dots [Y_{P_F}]]$ Agree search: 1 feature

(2) $[X^0 \text{ uFuG} \dots [Y_{P_{F,G}}]]$ Agree search: 2 features

- One domain of phenomena that exemplify this is in the case of mixed A/ \bar{A} movement (van Urk 2015).
- The challenge in this literature has been using the traditional Agree model (Chomsky 2001) to neatly account for agreement which targets both an A feature and an \bar{A} feature at the same time.

» I propose that there are two types of mixed A/ \bar{A} phenomena.

– Type I: **conjunctive satisfaction**.

▷ True composite agreement in which one relevant probe is satisfied only by the conjunction of the two features [X] and [Y].

– Type II: **two probes**.

▷ Two independent probes are located together on one syntactic head. Each probe has a separate satisfaction condition: [X] for probe 1 and [Y] for probe 2.

- While the two types show similar behavior in configurations like (2), they come apart when the two relevant features are found on distinct elements.

*I would like to show my deep gratitude to all of the Ndengleko speakers who I worked with including Habiba Kiongoli, Shanti Mzou, and Saidi Kusokuwa, with special thanks to the late Amiri Kiongoli (*twabónagana tena, babu*). I would also like to thank Nico Baier, Madeline Bossi, Amy Rose Deal, Emily Drummond, and Peter Jenks as well as various audiences at UC Berkeley and LSA 2019 for helpful discussion and feedback at various stages of this project.

(3) $[X^0 \text{ uFuG} \dots [Y_{P_F}] \dots [Z_{P_G}]]$

- Type I probes are not satisfied in these configurations.
 - ▷ Evidence for Type I probes primarily comes from Ndengleko (Bantu) focus movement. Elements must bear both [*n*] and [FOCUS] together in order to undergo focus movement.
- Given the configuration in (3), Type II probes will result in Agree with each element separately. If movement is involved, **both** elements undergo movement.
 - ▷ Evidence for Type II probes comes from Dinka Bor (van Urk 2015) and Kipsigis (Bossi & Diercks 2019). In both languages, the configuration in (3) leads to two moved elements.
- I implement this analysis with Deal’s (2015) interaction/satisfaction model of Agree.
 - ▷ Probes come with a **satisfaction condition**: the set of features that causes a probe to stop probing.
 - ▷ This gives us a neat way to specify that Type I probes have a **conjunctive** satisfaction condition.
- This analysis can extend to cases of ϕ -only agreement in which person and number features are sought together by one probe (Mi’gmaq; Coon & Bale 2014, Äiwoo; Roversi 2019).
- Thus, Agree for more than one feature seems to be a broader property of language that this theory accounts for.

Roadmap

§2 Ndengleko Focus Movement

§3 Type I: conjunctive satisfaction

§4 Type II: two probes

§5 Extension to other domains

2 Ndengeleko

★ The focus position in Ndengeleko requires both [FOCUS] *and* [n]

2.1 Structural focus position

- Evidence for Type I conjunctive satisfaction primarily comes from 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.

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

(4) Hadiya_S [a-m-pakul-i-a]_V mbaa_{DO} Kusokuwa_{IO}
 Hadiya 1.SM-1.OM-serve-APPL-FV 9.rice Kusokuwa
 pa-ki-inza_{LOC}.
 16-7-kitchen
 ‘Hadiya is serving Kusokuwa rice in the kitchen’

- » Focused elements appear in a dedicated structural position which is linearly immediately following to the verb.¹ SV = subject voice,

(5) In response to ‘Who is singing?’
 a. V-S [Ba-yɪmba]_V a-míséembe.
 2SM-sing 2-boy
 ‘BOYS are singing.’
 b. *S-V *A-míséembe [ba-yɪmba]_V.
 2-boy 2SM-sing
 ‘BOYS are singing.’

(6) In response to ‘Who are you giving food to?’

a. V-IO-DO [Ni-m-pa-y-a]_V Nádyá ki-lyó.
 1SG.SM-1.SM-give-APPL-FV Nadya 7-food.
 ‘I’m giving NADYA food.’
 b. #V-DO-IO #[Ni-m-pa-y-a]_V ki-lyó Nádyá.
 1SG.SM-1.SM-give-APPL-FV 7-food Nadya.
 ‘I’m giving NADYA food.’

(7) In response to ‘When is Habiba cooking rice?’

a. V-ADV-DO Habíba [a-teleka]_V lííno mbáa.
 Habiba 1.SM-cook today rice
 ‘Habiba is cooking rice TODAY.’
 b. #V-DO-ADV #Habíba [a-teleka]_V mbáa lííno.
 Habiba 1.SM-cook rice today
 ‘Habiba is cooking rice TODAY.’

(8) In response to ‘Where is Habiba cooking rice?’

a. V-LOC-DO Habiba [a-telek-a]_V pa-kíinza mbáa.
 Habiba 3SG.SM-cook-FV 16-kitchen rice
 Habiba is cooking rice in the kitchen.
 b. #V-DO-LOC #Habiba [a-telek-a]_V mbáa pa-kíinza.
 Habiba 3SG.SM-cook-FV rice 16-kitchen
 Habiba is cooking rice in the kitchen.

- The direct object is immediately after the verb in the baseline *and* when focused.

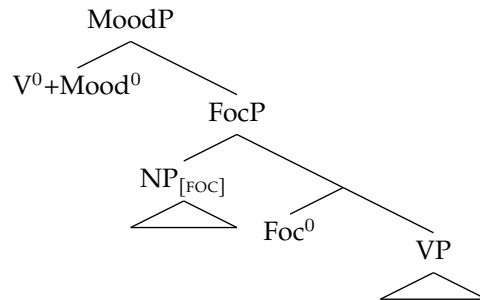
(9) In response to ‘What are you giving to Nadya?’

a. V-DO [Ni-m-pa-ya]_V ki-lyó Nadyá.
 1SG.SM-1.OM-give-APPL-FV 7-food Nadya.
 ‘I’m giving Nadya FOOD.’

- This position is often called the “Immediately After the Verb” (IAV) position (Watters 1979), I take this to be a structural position, Spec,FocP, immediately below the final landing site of the verb (Aboh 2007, van der Wal 2006, see Baker & Collins’ 2006 ‘FP’).

¹For 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, DAT = dative, EXCL = exclusive, GEN = genitive, INCL = inclusive, LOC = locative, OV = object voice, OBJ = object, NEG = negation, NF = nonfinite, NPST = nonpast, PART = participant, PASS = passive, PFV = perfective, PL = plural, PST = past, QUANT = quantifier, SG = singular

(10) Low Focus Projection



2.2 Focus movement is restricted to nominals

- The main diagnostic for nominals is the presence of a noun class marker.
 - ▷ Van der Wal & Fuchs (2019) analyze Bantu noun class prefixes as the joint spell out of *n* and Num
 - ▷ They follow Kramer (2015) in positing *n* as the locus of grammatical gender and Num as locus of grammatical number
 - ▷ Bantu noun class markers spell out gender and number together

- (11) a. i-tuungu
8-onion
'onions'
- b.
-
- ```

graph TD
 NumP --> Numpl
 NumP --> nP
 nP --> nD
 nP --> ONION[√ONION]

```
- c.  $i \leftrightarrow [\text{Num}_{pl}, n_D]$   
tuungu  $\leftrightarrow \sqrt{\text{ONION}}$

## 2.2.1 Nominals are very common

- The subjects, objects, adverbs, and locative phrases in (5-9) are all nominal because they include a noun class prefix.<sup>2</sup>

<sup>2</sup>I take the name *Nadya* to be a nominal despite lacking a noun class marker.

- Manner and temporal adverbs include noun class prefixes (This is found across Bantu as well; see Cope 1957 and Mathonsi 2001).

- (12) **li-iso** 'yesterday', **li-ino** 'today', **ma-alabu** 'tomorrow', **bw-iso** 'well', **ka-ndende** 'slowly'

- ▷ In addition, temporal adverbs can be possessed, further suggesting their nominal status.

- (13) liiso y-aake  
yesterday 9-1.POSS  
'the previous day' lit: 'its yesterday'

- (14) maalabu y-aake  
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* stacking on top of the NumP.

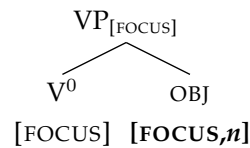
- (15) a. pa-ki-inza  
16-7-kitchen  
'in the kitchen'
- b.
- 
- ```

graph TD
    nP --> nloc
    nP --> NumP
    NumP --> Numsg
    NumP --> nP
    nP --> nD
    nP --> KITCHEN[√KITCHEN]
  
```
- c. pa $\leftrightarrow [n_{loc}]$
ki $\leftrightarrow [\text{Num}_{sg}, n_D]$
inza $\leftrightarrow \sqrt{\text{KITCHEN}}$

2.2.2 Evidence for nominals: VP focus

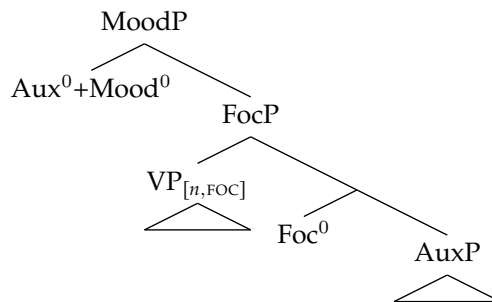
- In cases of VP focus, I assume each element in the VP bears a focus feature.

- (16)



- We could imagine an instance where the entire VP moved to the focus position and an auxiliary construction is used, schematized below (see §2.2.3).

(17) Unattested VP in Spec,FocP



- ▷ Instead, if the entire VP is new information, as in the context in (18), only the object appears in the IAV structural focus position.

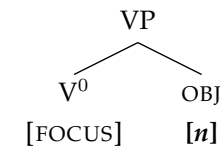
- (18)
- Habiba [a-tend-a]_V kílí?
Habiba 1.SM-do-FV what
'What is Habiba doing?'
 - [A-pul-a]_V ngubô.
1.SM-wash-FV 9.clothes
'Shes **washing clothes**.'
 - Weyuu, [a-sulus-a]_V igoombô.
No, 1.SM-rinse-FV 8.dish
No, she's **rinsing dishes**.'

- ▷ While both the verb and object bare a focus feature, the verb phrase is unable to meet the requirements of the probe.

2.2.3 Verb focus

- If the object is not in focus, we are left with one focused non-nominal and one non-focused nominal:

(19)



- In these cases, the verb **must become nominal**

- ▷ The feature [FOCUS] is not enough for the verb to appear in Spec,FocP.³
- ▷ A verb must appear with the noun class marker / nominalizing prefix (k)u-.⁴

(20) [N-and-á]_V *(ú)-telek-a pilau.
[1SG.SM-AUX-FV]_V 15-cook-FV rice.
'I am COOKING rice.'

- ▷ This prefix allows verbs to be subjects and to be possessed.

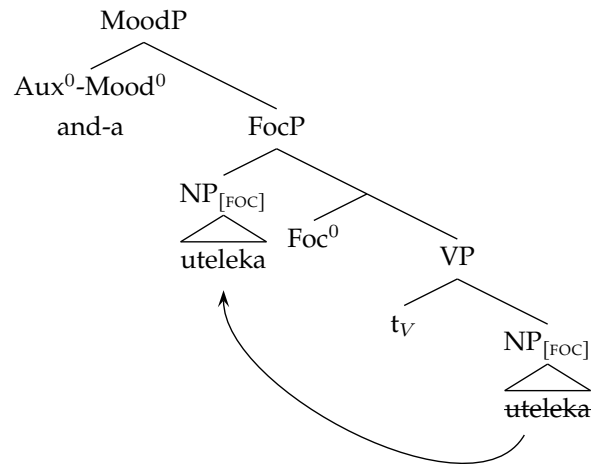
(21) (K)u-telek-a kw-aake ku-nog-ike.
15-cook-FV 15-POSS.3SG 15-be.good-PFV
'Her cooking is good.'

- ▷ In these clauses, a dummy auxiliary verb takes subject inflection and moves to Mood while the nominalized verb moves to Spec,FocP.

³Likewise, the *n* feature is not enough for the object to move to Spec,FocP.

⁴Ndengeleko does not tolerate vowel hiatus that results from the underlying structure given in (19). Instead, the /a/ and the /u/ fuse and become [o]: *nandóteleka*. Strom 2013 also analyzes the [o] as a fusion between [a] and [u] in this context.

(22) Nominalized verb focus



• Interim summary:

- ▷ Focused elements in Ndengeleko appear in a structural position immediately adjacent to the verb.
- ▷ All focused elements must be nominals and thus bear [*n*].

3 Type I conjunctive satisfaction

3.1 Assumptions and Framework

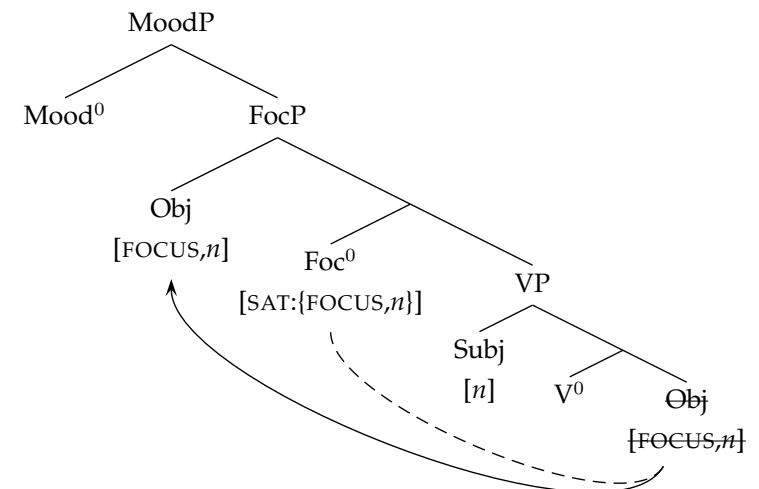
- I take as a starting assumptions:
 - ▷ The focus position in Ndengeleko is the result of syntactic movement.
 - ▷ Movement is built on an Agree relationship between a probe and a goal.
- The above data suggest that the features that the relevant probe is looking for is the conjunction of [FOCUS] and [*n*].
- To formalize this probe, I adopt Deal’s (2015) interaction/satisfaction theory of Agree in which probes have two specifications:
 - ▷ Interaction condition: the set of features that a probe copies back.

- ▷ Satisfaction condition: the set of features that causes a probe to stop probing.

3.2 Probe specifications

- » The probe on Foc searches its domain and moves the highest goal that meets the satisfaction condition.
 - ▷ Probe specification (setting aside the interaction condition)
 - ⊙ [SAT: FOCUS and *n*]
 - ▷ **Satisfaction condition:** Both [FOCUS] and [*n*] must be found together.
- Sample derivation of a focused nominal (see (9)).

(23) Object focus



3.3 Evidence for conjunction: one feature without the other is not enough

- » What happens when the two features are not found together?

- Found separately: focused intransitive verb

(24) * [Foc⁰ ... [[Subj_{*n*}] ... [[Verb_{*loc*}]]]]

- We might expect both the nominal and the verb to be moved since they each have a feature in the probes satisfaction condition. This is not the case.

- (25) a. *[Ba-and-a]_V **yɪmba**_{FOC} a-míséembe_n
 2SM-aux-FV sing 2-boy
 Intended: ‘The boys are SINGING.’
 b. *[Ba-and-a]_V a-míséembe_n **yɪmba**_{FOC}
 2SM-aux-FV 2-boy sing
 Intended: ‘The boys are SINGING.’

- ▷ As we saw, these cases require the verb be nominalized so that [FOCUS] and [n] are found together:

- (26) a. A-míséembe_n [ba-and-a]_V **ú-yɪmba**_{FOC}
 2-boy 2SM-aux-FV 15-sing
 ‘The boys are SINGING.’

- Only one: unfocused intransitive verb

- (27) *[Foc⁰ ... [[Subj_n] ... [[Verb]]]]

- We might expect just the nominal to move, but this necessarily puts a focus interpretation on the subject.

- (28) #[Ba-yɪmba]_V **a-míséembe**.
 2SM-sing 2-boy
 Intended: ‘Boys are singing.’
 Meaning: ‘BOYS are singing.’

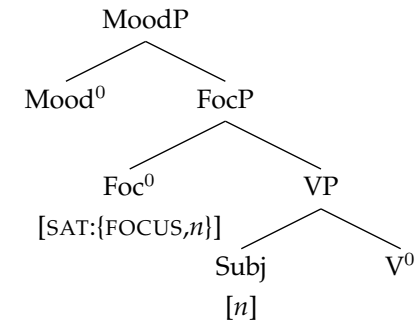
- If nothing is moved, this leaves Spec,FocP empty. Surprisingly, leaving this focus position empty results in ungrammaticality.

- (29) *[N-delek-a]_V.
 1SG.SM-cook-FV
 Int: ‘I am cooking.’

- We can appeal to an EPP feature on Spec,FocP to account for the ungrammaticality (29).

- In configurations without a focused nominal, like in (29), the probe on Foc⁰ fails to be satisfied.

- (30) Failed Satisfaction



- I follow Béjar (2003) and Preminger (2014) in that Agree as operation can fail without crashing the derivation.

- ▷ The derivation crashes in (29) because nothing was moved and Spec,FocP is left empty. The EPP condition was not met and the derivation is ruled out.

- ▷ The auxiliary construction is used instead.

- (31) [N-and-á]_V **ú-telek-a**.
 [1SG.SM-AUX-FV]_V 15-cook-FV.
 ‘I am COOKING.’

- This, then, lays out a three way Agree-Movement-EPP relationship:

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

- ⊙ The probe on Foc⁰: [SAT: FOCUS and n]

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

- ⊙ Movement instructions on Foc⁰: Move the element which meets the satisfaction condition.

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

- ⊙ EPP on Foc⁰: Spec,FocP cannot be empty.

- » Type I conjunctive satisfaction summary:
 - ▷ A single probe searches its domain and will only stop probing if it reaches an element with exactly two features.
 - * Probe specification in Ndengeleko: Sat: [FOCUS and *n*]
 - ▷ If the two features are not found together, satisfaction is not obtained.
 - * The focus position in Ndengeleko has a strict EPP and thus forces focused elements to be nominals to fill the position.
 - ▷ This Type I conjunctive satisfaction system of A/ \bar{A} movement can be found in Khanty as well (Colley & Privoznov 2019; see Appendix A).

4 Type II: two probes

- ★ Key empirical difference with two probes: if the two features are found separately, both of the elements move.

4.1 Kipsigis discourse driven word order

- Kipsigis is a Kalenjin language of Kenya with verb initial word orders.
- Similar to Ndengeleko, Bossi & Diercks (2019) identify an after-verb position as the structural position for focus.⁵

(32) S Kii- \emptyset -goo-chi **ngo** Kibet kitabut?
 PST-3SG-give-APPL who Kibet book
 ‘Who gave Kibet a book?’

(33) DO Koo- \emptyset -goo-chi **nee** Chepkoech Kibet?
 PST-3SG-give-APPL what Chepkoech Kibet?
 ‘What did Chepkoech give Kibet?’

(34) IO Kii- \emptyset -goo-chi **ngo** Chepkoech kitabut?
 PST-3SG-give-APPL who Chepkoech book
 ‘Who did Chepkoech give a book?’

⁵This position is licit for other types of information structure beyond ‘focus’ and for this reason Bossi & Diercks label the relevant feature [\emptyset]. I will use the feature [FOCUS] here for simplicity.

- Bossi & Diercks also observe that this focus position is only for nominals (elements with [D]).

- ▷ Manner adverbs (non-nominals) cannot appear in the focus position.

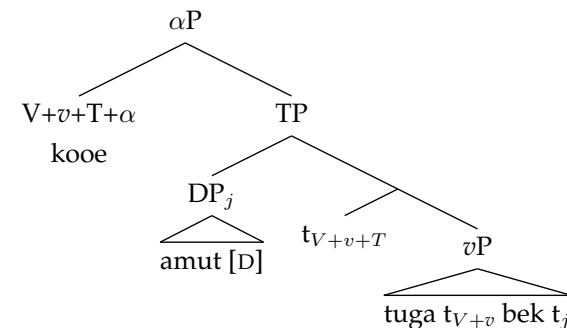
- (35) a. #[Koo- \emptyset -min]_V **komie** lagok bandek.
 PST-3PL-plant well children maize
 Int: ‘The children planted the maize WELL.’
 b. #[Koo- \emptyset -min]_V **komie** bandek lagok.
 PST-3PL-plant well maize children
 Int: ‘The children planted the maize WELL.’

- ▷ Temporal adverbs (nominals) can appear in the focus position.

- (36) a. [Koo- \emptyset -e]_V **amut** tuga bek.
 PST-3PL-drink yesterday cows water
 ‘The cows drank water YESTERDAY.’
 b. [Koo- \emptyset -e]_V **amut** bek tuga.
 PST-3PL-drink yesterday water cows
 ‘The cows drank water YESTERDAY.’

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

(37) Structure of (36-a)



- Though the position seems to require a \bar{A} feature and an A feature, it does not reflect a Type I conjunctively satisfied probe.

4.2 Two movements

» If a non-nominal is in focus, the A and \bar{A} features are found on separate elements.

(38) $[X^0 \dots [[YP_D] \dots [[ZP_{FOC}]]]]$

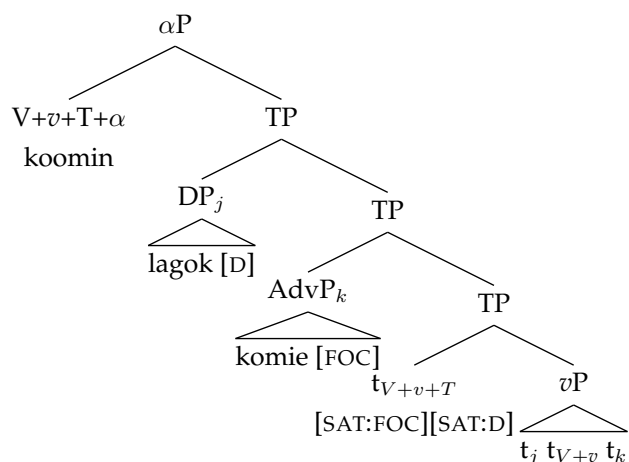
- In Kipsigis, this configuration is created when a manner adverb (non-nominal) like *komie* ‘well’ is in focus.
- In these cases, the focused adverb is not immediately after the verb, but in a “secondary” after verb position. The subject (highest nominal) immediately follows the verb.

(39) $[Koo-\emptyset\text{-min}]_V \text{lagok}_D \text{komie}_{FOC} \text{bandek.}$
 PST-3PL-plant children well maize
 ‘The children planted the maize WELL.’

▷ Compare (39) to the ungrammatical Ndengeleko counterparts in (26).

- I follow Bossi & Diercks in taking this fact to indicate two movement operations and I argue that this reflects two separate probes on T.

(40)



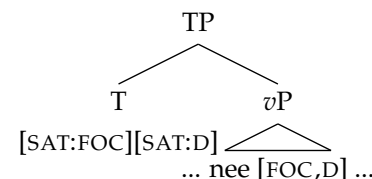
4.3 When [D] and [FOCUS] are found together

- When a nominal is focused, only that focused nominal moves, as we have seen in (32)-(34) and (36).

(41) DO Koo- \emptyset -goo-chi **nee** Chepkoech Kibet?
 PST-3SG-give-APPL what Chepkoech Kibet?
 ‘What did Chepkoech give Kibet?’

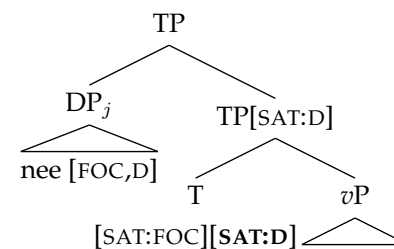
- The question is how two independent probes seemingly act ‘together’ to move one element.
 - ▷ A single movement step can still be accounted for with two separate probes.
 - ▷ Cyclic expansion of probes (Rezac 2003): when a head reprojects to an intermediate position, an unsatisfied probe on the given head will reproject as well.

(42) T merges with two probes



- In the tree in (42), (representing the structure of (41)) the [SAT:FOC] probe initiates its search first, finds the focused object, and moves it.
- Then, we can say that the D probe reprojects to the intermediate TP node.

(43)



- Given the structure in (43), the focused subject is in the search domain of the D probe.
 - ▷ I propose that the D probe is satisfied by the moved focused object
 - ▷ The movement instructions (to move that which satisfies a probe to its specifier) are met without any further movements.
- » Summary of Type II: two probes
 - ▷ Two independent probes are situated on the same head, X. If one probe moves an element Y to Spec,XP, Y becomes the highest element in the second probe's domain.
 - * For Kipsigis, this leads to the focus and D probes seeming to be satisfied together.
 - ▷ If the two features are found separately, each probe enters into an Agree relationship with the element with the respective feature.
 - * In the case of non-nominal focus in Kipsigis, both the highest nominal and the focused element are moved to the structural ‘focus’ position.
 - ▷ This Type II (two probe) system of mixed A/ \bar{A} movement can be found in Dinka Bor as well (van Urk 2015; see appendix B).

5 Extension of the analysis: other Type I probes

5.1 Conjunctive satisfaction in Mi’gmaq

- » A probe with a conjunctive satisfaction condition can be found in ϕ agreement as well.
- Coon & Bale (2014) show that ϕ agreement on Infl in Mi’gmaq (Eastern Algonquian) shows an interesting interaction between person and number.
- While the pattern is highly complex, generally Infl agrees with the subject unless there is a first person plural element in the clause anywhere, in which Infl agrees with the 1PL argument.

- (44) 1PL subject
- a. Mu nemi-a-w-**gw-ig**.
NEG see-3OBJ-NEG-**1INCL**-3PL
‘We_{INCL} don’t see them.’
- (45) 1PL object
- a. Mu nem-ugsi-w-**gw**.
NEG see-3>PART.PL-NEG-**1INCL**
‘He doesn’t see us.’

- First person alone on the object is not enough to trigger Infl agreement.

- (46) Mu nem-i’li-w-g.
NEG see-1OBJ-NEG-3
‘She doesn’t see me.’

- We can formalize this aspect of agreement in Mi’gmaq as a conjunctive satisfaction condition:

- (47) [SAT: SPKR and PL]

- Coon & Bale (2014) account for the pattern by positing separate person and number probes which search and find goals independently, but must communicate to only move one ‘best match’.

5.2 Disjunctive satisfaction in Äiwoo

- In Äiwoo, we see a case where two features are relevant for Agree, yet they do not need to be found together: whichever feature is found first will halt the probing process (Roversi 2019).
- Instead of a conjunctive satisfaction condition, the probe in Äiwoo suggests a disjunctive satisfaction condition.
- The final agreement slot can agree with both the subject and object as in (48), where the subject is 1st or 3rd person singular.

- (48) 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).'
- c. i-togulo-**gu-mu**
PFV-hit-GU-2SG
'(S)he hit you.'
- d. 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.

- (49)
- 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 a second person argument ([PART]) or a plural ([PL]) the search is halted (the probe is satisfied).

▷ The probe in Äiwoo can be written as in (50).

- (50) Probe responsible for Infl agreement:
[SAT: PART or PL]

5.3 Uniting conjunctive and disjunctive satisfaction

- In both Mi'gmaq and Äiwoo, one probe specifies two features in its interaction condition.
 - ▷ Mi'gmaq: the two features are only favored when they appear together (conjunctively).
 - ▷ Äiwoo: one feature alone is just as favored as the other feature found alone (disjunction).

- Thus, we see examples of conjunctive and disjunctive satisfaction in the same domain of ϕ -agreement.
- Crucially, these two cases are alike in that they are examples of single probes which list more than one feature in the satisfaction condition.

6 Conclusion

- I propose two distinct ways of capturing the broad idea of “composite” probing.
 - Type I: One (1) single probe, Two (2) features
 - ▷ Characteristics
 - * When the features are found together: one element moves
 - * When the features are found separately: the probe fails to be satisfied
 - ▷ Evidence
 - * In the A/ \bar{A} bar domain, we see that Ndengleko focus movement requires both [FOCUS] and [*n*].
 - * In the ϕ domain, we have seen Mi'gmaq (where person and number features must be found conjunctively) and Äiwoo (where person and number features can be found disjunctively).
 - Type II: Two (2) probes on one (1) single head
 - ▷ Characteristics
 - * When two features are found together: one element moves
 - * When two features are found separately: two elements move
 - * Examples in the A/ \bar{A} bar domain: Kipsigis focus movement
- When considering ‘mixed’ agreement, we need to specify how many probes are present, and how the features must be arranged to halt probing.
- Traditional implementations of Agree which model probes as uninterpretable features don't have the built-in machinery to account for the variation we see in probe structures.
 - ▷ By contrast, the typology is captured nicely in the interaction/satisfaction model of Agree (Deal 2015).

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A Khanty (Type I: conjunctive satisfaction)

★ In Khanty, only nominals can moved to the \bar{A} subject position, suggesting a Type I conjunctive satisfaction probe.

- Khanty (Finno-Ugric group, Uralic) is an SOV language in which subjects are marked nominative (null) and agree with the verb (Colley & Privoznov 2019).

- (51) a. **mun** nawrem-em-a maw ma-s-ew
we kid-1sg-dat candy give-PST-1PL
'We gave candy to my kid.'
- b. **maw-y-am** masa-jen-en nawrem-em-a
candy-PL-1SG Masha-2SG-LOC kid-1SG-DAT
ma-s-i-jet
give-PST-PASS-3PL
'My candy was given by (your) Masha to my kid.'

Colley & Privoznov show that movement to subject position has both A and \bar{A} properties.

A.1 A properties

- Only nominals (DPs) may become the subject. Agents, themes, recipients (52), and low applicatives (53), can all become subjects.
- (52) nawrem-et masa-jen-en maw-en ma-s-i-jet
kid-PL Masha-2SG-LOC candy-LOC give-PST-PASS-3PL
'(Your) Masha gave candy to our kids.' Lit.: 'Our kids were give by (your) Masha by candy.'
- (53) nawrem-et masa-jen-en masinaj-en wer-s-a-jet
kid-PL Masha-2SG-LOC car-LOC make-PST-PASS-3PL
'(Your) Masha fixed the kids (their) cars.' Lit.: 'The kids were fixed by (your) Masha by cars.'
- Non-nominals may not become subjects. These include high applicatives, direction (55), path (55), and location adverbs.

- (54) a. Masa-jen skola-ja man-s
Masha-2SG school-dat go-PST[3SG]
‘(Your) Masha went to the school.’
b. *skola masa-jen-en man-s-a
school Masha-2SG-LOC go-PASS[3SG]
Lit.: ‘The school was gone to by (your) Masha.’

- (55) a. skola-ja tam jos-et-en jenk-y-uw
school-DAT this road-PL-LOC go-NPST-1PL
‘We go to school by these roads.’
b. *tam jes-et skola-ja jenk-y-a-jet
this road-PL school-DAT go-NPST-PASS-3PL
Lit.: ‘These roads are gone to school (by us).’

- The other A properties include the lack of weak crossover effects and the ability to effect case and agreement.

A.2 \bar{A} properties

- The two \bar{A} properties of subject position in Khanty are
 - ▷ subjects must be topics
 - ▷ movement to subject position can skip an intervening nominal
- Colley & Privoznov propose that the passive head in Khanty has a composite ϕ /TOP probe
 - ▷ When ϕ and TOP are found separately, the passive head does not move both elements, it simply results in ungrammaticality like in (55)-b.
 - ▷ Thus, I propose that the ‘composite’ probe in Khanty is Type I conjunctive satisfaction probe:

- (56) Khanty probe on Pass⁰:
[Int: F, Sat: { ϕ ,TOP}]

B Dinka (Type II: two probes)

- ★ In Dinka, the relevant features for the edge of vP are ϕ and \bar{A} . If the two features are found separately, both of the elements move.

B.1 The pattern

- In Dinka, a V2 effect is found at the edge of transitive verb phrases, so that the first XP in the verb phrase must be a DP in the absolutive case. Van Urk (2015) proposes that this reflects leftward movement of an object to Spec- vP for case licensing.⁶

- (57) Yiin be [_{vP} **miir** tiiN].
you FUT.SV [_{vP} giraffe see.NF]
‘You will see a giraffe.’

- (58) Ayen a-ce. [_{vP} **cuin** caam [_{PP} ne. paal]].
Ayen 3S-PREF.SV [_{vP} food eat.NF [_{PP} P knife]]
‘Ayen has eaten food with a knife.’

- (59) Ayen a-ce. [_{vP} **cuin** caam akol].
Ayen 3S-PREF.SV [_{vP} food eat.NF afternoon]
‘Ayen has eaten food in the afternoon.’

- Importantly, adverbs and PPs cannot appear there.

- (60) *Ayen a-ce [_{vP} [_{PP} ne paal] **cuin** caam].
Ayen 3S-PREF.SV [_{vP} [_{PP} P knife] food eat.NF]
‘Ayen has eaten food with a knife.’

- (61) *Ayen a-ce [_{vP} akol **cuin** caam].
Ayen 3S-PREF.SV [_{vP} afternoon food eat.NF]
‘Ayen has eaten food in the afternoon.’

- Spec, vP is also the intermediate landing site for successive cyclic movement driven by A-bar features in Dinka.

⁶The data here are given without certain diacritics, see van Urk (2015) for correct data formatting.

- ▷ Van Urk shows that this movement is also tied to case-licensing of DPs.
- ▷ When an adjunct (which lacks D and the need for case) is \bar{A} extracted, it moves through vP , as evidenced by it leaving a resumptive pronoun

(62) Ye toony ke dii [_{CP} cii Bol [_{vP} ke **cuin**
 be pots QUANT.PL how [_{CP} PRF.OV Bol.GEN [_{vP} 3PL **food**
 thaal]]?
 cook.NF]]
 ‘How many pots has Bol cooked food with?’

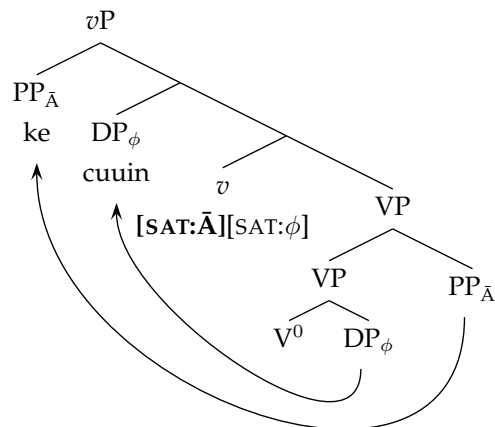
- In these constructions, the DP object must also move to Spec, due to the ϕ probe.

(63) Ye toony ke dii [_{CP} cii Bol [_{vP} ke **cuin** thaal
 be pots QUANT.PL how [_{CP} PRF.OV Bol.GEN [_{vP} 3pl **food** cook.NF
]]
]]
 ‘How many pots has Bol cooked food with?’

B.2 Analysis

- I analyze the ϕ and \bar{A} probes on v as being distinct.
- Each probe moves an element with the respective targeted feature.

(64) \bar{A} adjunct extraction in Dinka



- Just like in Kipsigis, we can appeal to cyclic expansion of probes (Rezac 2003) to understand why only one element moves in a typical case:

(65) \bar{A} DP satisfies both probes in Dinka

