

Incorporation as a Repair Mechanism: Evidence from the Turkana DP

Helene Streffer

Universität Leipzig

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Preview

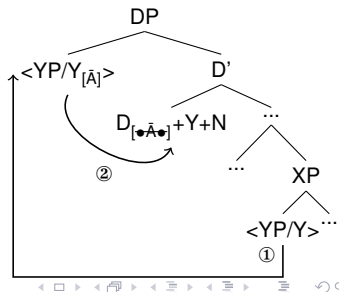
(1) Turkana

- a. η a-kile η a-di
F.PL-milk F.PL-some
'some milk'
- b. η a-di-kile
F.PL-some-milk

Two-step repair analysis

- ◇ Noun-initiality constraint
- ◇ Cyclic optimization of the DP
- ◇ Incorporation as a repair mechanism

(2)



Roadmap

1. Data

- ◇ The Puzzle
- ◇ Modifiers in the Prenominal Domain

2. Incorporation before Phonology

3. Analysis

4. The Clausal Domain in Dinka

- ◇ Data
- ◇ Van Urk's (2015) Analysis
- ◇ A Two-Step Repair Analysis

5. Conclusion

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Data

Turkana, Eastern Nilotic

- ◇ spoken in the North of Kenya
- ◇ 1,020,000 speakers (Eberhard et al., 2023)

Data in this talk

- ◇ If not otherwise indicated, the Turkana data come from own fieldwork with three consultants Janet Akuam, Amos Nakuwa Emoru and Geoffry Edapal to whom I am grateful for their valuable work as linguistic consultants.

Tone

- ◇ Turkana exhibits grammatical tone which distinguishes tense on verbs and case on nouns (Dimmendaal, 1983, 37).
- ◇ However, since in-depth research on tone in Turkana is still missing, I will leave tone aside for the moment. Accordingly, I have chosen not to transcribe tone in order to avoid misrepresenting the data.

Background

Noun-initiality

- (3) ηa-kine ηa-tʃɛ ηa-uni ηa-kɛŋ
 F.PL-goat F.PL-other F.PL-three F.PL-3SG.POSS
 ‘his three other goats’

Prefixed nominal gender marker

- (4) a. e-kile
 M.SG-man
 b. a-bɛɾʊ
 F.SG-woman
 c. ɪ-ŋɔq
 N.SG-dog

The Positions of Simple Quantifiers

- (5) a. a-bεrʊ a-tʃɛ (unmarked)
 F.SG-woman F.SG-other
 ‘another woman’
- b. a-tʃɛ-bεrʊ
 F.SG-other-woman
- c. *a-tʃɛ a-bεrʊ
 F.SG-other F.SG-woman

Note: a prenominal quantifier would violate noun-initiality

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The Complex Quantifier *-kidikidio*

- (6) a. $\eta a\text{-kipi}$ $\eta a\text{-}$ kidikidio (unmarked)
 PL-water PL-few
 ‘small amount of water’
- b. $*\eta a\text{-}$ kidikidio -kipi
 F.PL-few-water
- c. $\eta a\text{-}$ kidikidio $\eta a\text{-kipi}$
 F.PL-few F.PL-water

Numerals

- (7) a. $\eta\text{a-b}\acute{\text{e}}\text{r}$ $\eta\text{a-kan-k-omw}\acute{\text{a}}\text{n}$ (unmarked)
 F.PL-woman F.PL-five-LINK-four
 ‘nine women’
- b. * $\eta\text{a-kan-k-omw}\acute{\text{a}}\text{n-b}\acute{\text{e}}\text{r}$
 F.PL-five-LINK-four-woman
- c. $\eta\text{a-kan-k-omw}\acute{\text{a}}\text{n}$ $\eta\text{a-b}\acute{\text{e}}\text{r}$
 F.PL-five-LINK-four F.PL-woman

Nominal Possessors

- (8) a. $\eta\text{I-d}\epsilon$ a e-tuko (unmarked)
 PL-child of M.SG-zebra
 ‘children of a zebra’
- b. $t\text{ə-d}\epsilon\text{m-ara-I}$ e-tuko $\eta\text{I-d}\epsilon$
 3.SUBS-take-ITIVE-ASP M.SG-zebra PL-child
 ‘The children were taken away from the zebra’

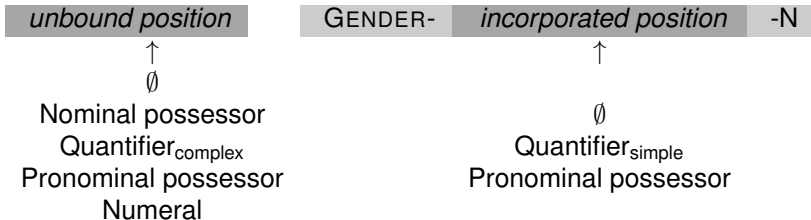
Pronominal Possessors

- (9) a. η a-ki η a-kon (unmarked)
 F.PL-ear F.PL-2SG.POSS
 ‘your ears’
- b. η a-kon-ki
 F.PL-2SG.POSS-ear
- c. η a-kon η a-ki
 F.PL-2SG.POSS F.PL-ear

Overview of the Prenominal Domain

- ◇ two positions
- ◇ most modifiers are restricted to one position except for pronominal possessors
- ◇ appearance of the complex quantifier, the numeral and the pronominal possessor in the unbound position looks like a violation of the general noun-initiality

(10) Modifiers in the Prenominal Domain



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Agreement I

In order to argue for incorporation, one has to show that **a-** in (13-b)...

☞ ...is the nominal gender marker...

(11) GEND_{NOMINAL}–Quantifier–Noun

✗ ...and not a modifier with regular agreement marking in front of a noun without a nominal gender marker.

(12) AGR–Quantifier Noun

- (13) a. a-bɛɾʊ a-tʃɛ
 F.SG-woman F.SG-other
 ‘another woman’
- b. a-tʃɛ-bɛɾʊ
 F.SG-other-woman

Agreement II

- ◇ Dimmendaal (1983, 217) notes a specific type of nominal concord called ‘restrictive agreement’.
- ◇ ‘Restrictive agreement’ distinguishes the form of the nominal gender marker from the agreement marker prefixed to modifiers.

- (14)
- a. a-bɛrʊ na-tʃɛ
 F.SG-woman F.RESTR-other
 ‘another woman’
- b. *na-tʃɛ bɛrʊ
 F.RESTR-other woman
- c. a-tʃɛ-bɛrʊ
 F.SG-other-woman

👉 The gender marking in front of the prenominal quantifier is the nominal gender marker.

👉 Thus, (14-c) shows incorporation of the quantifier into the noun.

The Absence of the Agreement Marker

Explanations for the absence of the agreement marker:

(i) No Agreement Node Inserted

- ◇ At the point where an agreement node would be inserted, the quantifier has already incorporated into the noun.
- ◇ (see the argument for morphological wordhood of Bulgarian denominal adjectives in Harizanov 2018)

(ii) Haplological Dissimilation Rule

- ◇ The agreement node of the moved quantifier and the adjacent node hosting the nominal gender marker would have nearly identical features.
- ◇ This could induce a haplological dissimilation rule sensitive to morphosyntactic features, which deletes the agreement node.
- ◇ The relevant domain for such a process has been argued to be a complex head (see Nevins 2012).

 Both explanations predict that the moved quantifier forms a complex head with the noun before phonology.

The Size of the Modifier

(15) Simple Quantifier

- a. ηa -kile ηa -di
 F.PL-milk F.PL-some
 ‘some milk’
- b. ηa -di-kile
 F.PL-some-milk

(16) Complex Quantifier

- a. ηa -kipi ηa -kidikidio
 PL-water PL-few
 ‘small amount of water’
- b. * ηa -kidikidio-kipi
 F.PL-few-water

(17) Modified Quantifier

- a. ηa -kile ηa -di tʃɪtʃɪk
 F.PL-milk F.PL-some somewhat
 ‘some small amount of milk’
- b. * ηa -di-tʃɪtʃɪk-kile
 F.PL-some-somewhat-milk

◇ complex material cannot appear in the incorporated position

👉 explanation: incorporation is a result of head movement which can only target single heads and not more complex material

Vowel Harmony

Prediction:

Phonological processes treat the incorporated element as already part of the noun.

[ATR]-Vowel Harmony in Turkana

- ◇ generally root-controlled if there is no strong suffix (Dimmendaal, 1983, 19-27)
- ◇ compounds do not exhibit vowel harmony (Dimmendaal, 1983, 192)
⇒ expected to see no vowel harmony with incorporation, either

- (18) a. e-kile ε-tʃε ye
 M.SG-man M.SG-other that
 ‘that other man’
- b. ε-tʃε-kile ye
 M.SG-other-man that

- ◇ The incorporated element interrupts the vowel harmony between the nominal gender marker and the noun.
 - ◇ The incorporated quantifier opens a new vowel harmony domain.
- ⇒ The nominal gender marker is not in the harmony domain of the noun anymore in (18-b).

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Overview

Explananda

- (i) two different positions in the prenominal domain
- (ii) the *unbound* postnominal appearance vs. *bound* prenominal appearance of the modifiers surfacing in the incorporated prenominal position
- (iii) the correct split between the modifiers which appear in the two different prenominal positions
- (iv) the twofold behavior of pronominal possessors who can appear in both positions

A Direct Movement Analysis

Movement in a direct movement analysis:

- ◇ some modifiers move via phrasal movement to SpecDP (the unbound prenominal position)
- ◇ while other modifiers move via head movement to D (the bound prenominal position)

Two major drawbacks:

- ◇ Long head movement from the base position of the modifier, which is a specifier of a functional projection in the nominal spine, violates locality constraints proposed for head movement (Travis, 1984; Koopman, 1984) (though see van Urk's (2015) analysis of fronted PP adjuncts in Dinka)
- ◇ This analysis requires an ad hoc stipulation to explain why some modifiers move via phrasal movement while others move via head movement induced by the same information structural feature.

A Two-Step Analysis

In a nutshell:

- ① All modifiers undergo regular phrasal movement induced by an $[\bar{A}]$ feature.
- ② This is followed by an optimization step where the derivation tries to adhere to the general noun-initiality.
 - Incorporation is a possible repair mechanism available for small elements.

Background Assumptions

- ◇ The nominal gender marker in Turkana is located on D.
 - ◇ see e.g. Dimmendaal (1983, 307) for similarity between nominal gender markers and demonstratives in Turkana
- ◇ Noun-initiality is derived through N-to-D movement (see, e.g., Carstens 2017 for N-to-D movement in Shona and Kouneli 2020 for Kipsigis).
- ◇ Phrases which consist only of one head are both maximal and minimal at the same time (assumption from Minimalism).
 - ◇ Locality restrictions on head movement (Travis, 1984; Koopman, 1984) predict that max/min elements can only be addressed as minimal, i.e. as a head, from a local viewpoint.
 - ◇ From a distant viewpoint, max/min elements will always be perceived as maximal, i.e. as a phrase.

Noun-initiality

NOMINALFIRST

There should be no non-nominal element in SpecDP.

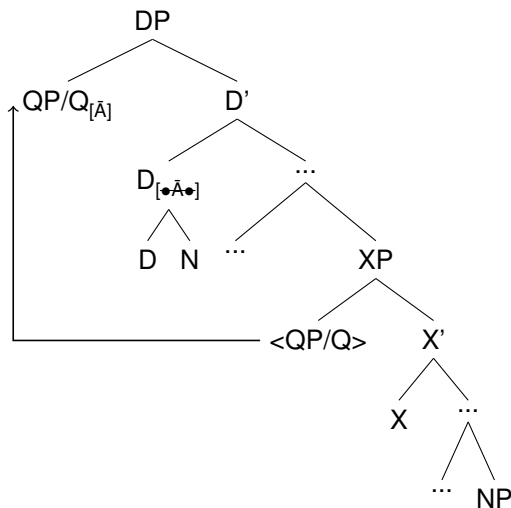
A restriction to nominals in the initial-position of the clausal domain has been proposed for:

- ◇ Dinka (Western Nilotic; South Sudan) in van Urk (2015)
- ◇ Kipsigis (Southern Nilotic; Kenya) in Driemel & Kouneli (2022)
- ◇ Turkana (Eastern Nilotic; Kenya) in Barabas-Weil (2022)

⇒ The strong preference for nominals in the initial position could be a general property of Nilotic languages.

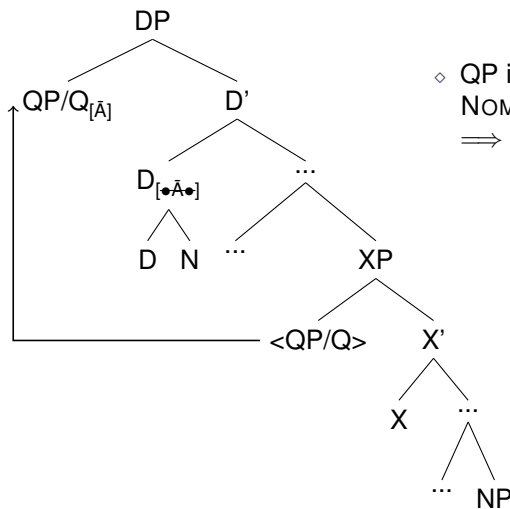
① Phrasal Movement

(19)



① Phrasal Movement

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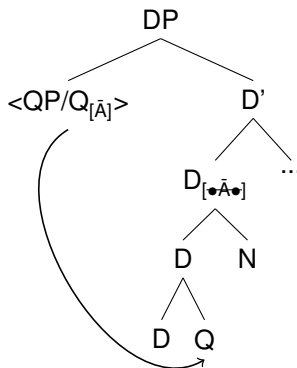
- ◇ QP in SpecDP violates the NOMINALFIRST constraint
 ⇒ optimization step

Optimization: ② Incorporation

Available repair mechanism for *max/min* elements: Incorporation

(For movement from the specifier position of a phrase XP to the head X of that phrase see Matushansky 2006.)

(20)

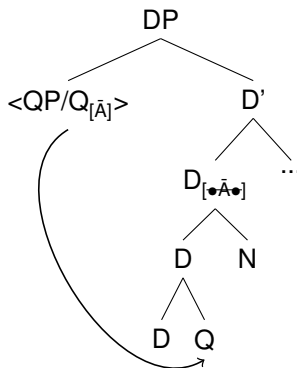


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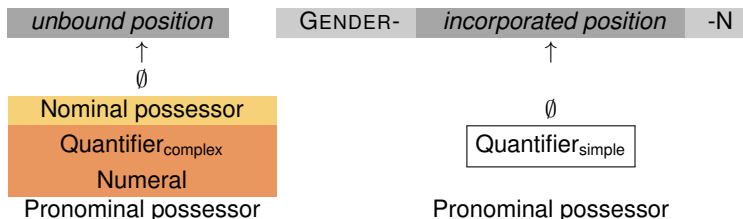
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- ◇ the quantifier is not in SpecDP anymore
- ◇ the NOMINALFIRST constraint is satisfied again

Optimization: No Repair

(21) *Modifiers in the Prenominal Domain*



No need for a repair with nominal elements like

- ◇ nominal possessors

No available repair for complex elements like

- ◇ complex quantifiers
- ◇ numerals

Strong and Weak Pronouns I

Barabas-Weil (2022)

- ◇ Turkana (VSO in the unmarked case) exhibits a preverbal focus position.
- ◇ Distinction between weak and strong pronouns:
Only the strong pronoun can appear in the preverbal position (22-b).
(both pronouns appear in the postverbal position (22-a))

(22) a. é-múdží (àjój/àj) ákírínj
1SG-eat I.NOM meat.ABS
'I am eating meat'

(Barabas-Weil, 2022)

b. ájój/*áj é-múdží ákírínj
I.ABS 1SG-eat meat.ABS
'I am eating meat'

(Barabas-Weil, 2022)

Strong and Weak Pronouns II

Strong and weak pronouns correspond to structures with different levels of complexity (see e.g. Déchaine & Wiltschko 2002).

- ◇ weak pronouns consist of a single head
- ◇ strong pronouns exhibit a complex structure

Strong vs. weak pronoun distinction is maintained with pronominal possessives.

- 👉 Pronominal possessors can appear in both the unbound and the incorporated pronominal position.
- ◇ weak pronouns incorporate
- ◇ strong pronouns stay unbound pronominally

Summary of the analysis

Explananda & Explanatia

- (i) two different positions in the prenominal domain
 - The repair is only available for max/min elements.
- (ii) the *unbound* postnominal appearance vs. *bound* prenominal appearance of the modifiers surfacing in the incorporated prenominal position
 - Theses are max/min elements and subject to the incorporation repair in the prenominal domain. There is no reason to undergo an incorporation repair in their postnominal position.
- (iii) the correct split between the modifiers which appear in the two different prenominal positions
 - The modifiers can be distinguished through structure (max vs. max/min elements).
- (iv) the twofold behavior of pronominal possessors who can appear in both positions
 - The weak vs. strong pronoun distinction is maintained with possessive pronouns.

Driving force for the repair: Strong preference for noun-initiality (NOMINALFIRST)

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Clause-Initial Position in Dinka

Dinka (Western Nilotic; South Sudan) has a V2 effect (van Urk, 2015, chapter 3).

- ◇ The clause-initial position is *restricted to nominals* which serve as a topic or focus.
- ◇ Subjects, Objects and Adjuncts can appear in front of the finite auxiliary/verb.
- ◇ Voice Morphology on the finite auxiliary/verb reflects the grammatical function of the topicalized noun phrase (SV= SUBJECT VOICE, OV = OBJECT VOICE, OBLV = OBLIQUE VOICE).

(23) Dinka word order template (van Urk, 2015, 60)

Topic	FiniteAux/Verb –	Subject	Object1 –	NonfiniteAux/Verb	Object2	Adjuncts
<i>Left periphery</i>		<i>Middle field</i>		<i>Right periphery</i>		

Clause-Initial Position in Dinka

- (24) a. *Áyén à-cé cuḡin câam nè pǎal.*
 Ayen 3S-PRF.SV food eat.NF P knife
 'Ayen has eaten food with a knife.'
- b. *Cuḡin à-cḡi Áyén câam nè pǎal.*
 Food 3S-PRF.OV Ayen.GEN eat.NF P knife
 'Food, Ayen has eaten with a knife.' (van Urk, 2015, 61)

- ◊ If the PP is topicalized to the clause-initial position, the preposition of the in-situ PP does not appear in front of the noun anymore.
- ◊ Instead, Oblique Voice morphology looks identical to the preposition (van Urk, 2015, 74).

- (25) *Pǎal à-cénè Áyén cuḡin câam.*
 knife 3S-PRF.OBLV Ayen.GEN food eat.NF
 'With a knife, Ayen has eaten food.' (van Urk, 2015, 61)

-nè and -è Allomorphs

- ◇ The allomorphs of the Oblique Voice *-nè* and *-è* are identical to the allomorphs of the preposition (van Urk, 2015, 74).

- (26) a. **Păal à-cénè** Áyèn cuîin câam.
knife 3S.PRF.OBLV Ayen.GEN food eat.NF
'With a knife, Ayen has eaten food.'
- b. **Păal à-céemè** Áyèn cuîin.
knife 3S-eat.OBLV Ayen.GEN food
'With a knife, Ayen is eating food.'

(van Urk, 2015, 61)

- (27) a. Áyén à-càm cuîin **nè** păal.
Ayen 3S-eat.SV food P knife
'Ayen is eating food with a knife.'
- b. Áyén à-càm cuîin **è** păal.
Ayen 3S-eat.SV food P knife
'Ayen is eating food with a knife.'

(van Urk, 2015, 74)

Nominal Possessors

- ◇ Nominal possessors are build with the preposition *nè/è*.
- ◇ If a nominal possessor is topicalized to the clause-initial position, one can observe the same pattern as in the adjunct examples before (van Urk, 2015, 75).

- (28) a. Wôok cé [DP tíŋ è Bôl] tîiŋ.
 1PL PRF.SV woman.CS P Bol.GEN see.NF
 'We have seen Bol's wife.'
- b. Wôok cé [DP tíŋ nè Bôl] tîiŋ.
 1PL PRF.SV woman.CS P Bol.GEN see.NF
 'We have seen Bol's wife.'
- c. Bôl à-céné wóok tîik tîiŋ.
 Bol 3S-PRF.OBLV 1PL.GEN woman see.NF
 'Bol, we have seen his wife.' (van Urk, 2015, 75-76)

Complex Preposition *kènè*

- One cannot get Oblique Voice or topicalization with the more complex preposition *kènè* (van Urk, 2015, 76).

(29) a. Bol à-thàt **kènè** Àyén.

Bol 3S-cook.SV with Ayen
'Bol is cooking with Ayen.'

b. ***Àyén** à-thèrè Bòl.

Ayen 3S-cook.OBLV Bol.GEN
'Bol is cooking with Ayen.'

(van Urk, 2015, 76)

Main Observations in Dinka

van Urk (2015)

- ◇ If a PP is topicalized, the DP inside the PP surfaces in the preverbal position while the preposition attaches to the finite verb.
 - 👉 nominal can surface in the initial position
 - 👉 non-nominal element incorporates into the next lower head
- ◇ PPs with complex prepositions cannot be topicalized.
 - 👉 complex non-nominal elements cannot incorporate

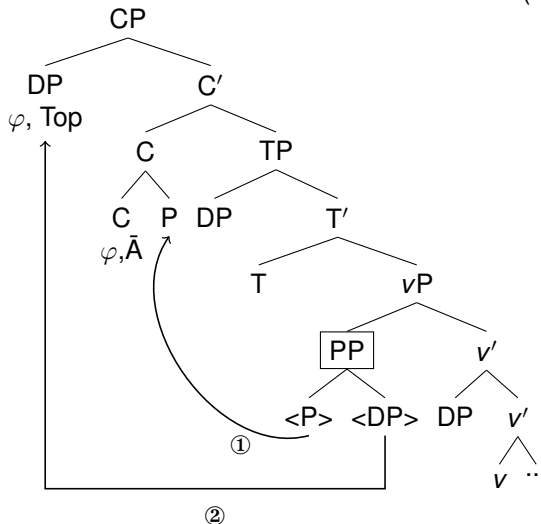
Taking Dinka and Turkana Together:

- ◇ Both languages have an **initial position with a strong preference for nominals** (Dinka preverbal position & Turkana prenominal position).
- ◇ If something **non-nominal** moves into this position it **appears attached to the next lower head** if it is only a head itself (in Dinka incorporation into the finite verb & in Turkana incorporation into the noun)
- ◇ Both languages seem to **restrict this repair mechanism to heads**.

Van Urk's (2015) Analysis

(30)

(van Urk, 2015, 77+173)



Main Drawbacks of van Urk's (2015) Analysis

- ◇ Direct head movement of P from SpecvP to C violates locality conditions on head movement.
(also noted in van Urk 2015)
- ◇ Head movement of P to C is a 'look-ahead repair'.
 - The situation which is banned (a non-nominal in SpecCP) is not (yet) there at the point of the derivation where the repair applies. Thus, there is no trigger for head movement of P to C at this point.

A Two-Step Repair Analysis

NOMINALFIRST – inviolable in Dinka

There should be no non-nominal element in SpecCP.

Swapping the order of operations and allowing phrasal movement to access PP leads to a **unified analysis of Dinka and Turkana**.

- ① Subjects, Objects and Adjuncts undergo the same phrasal movement to SpecCP.

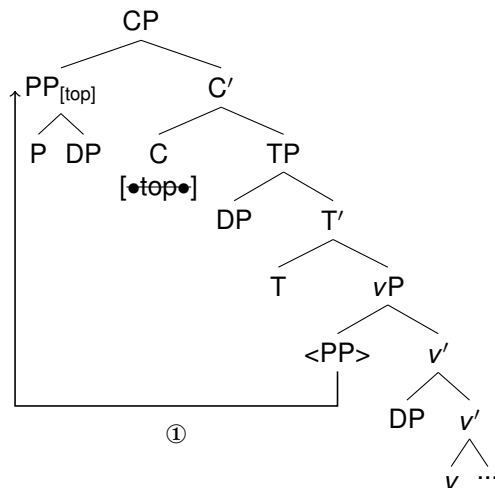
If a PP appears in SpecCP → violation of NOMINALFIRST

- ② The derivation can be rescued with the incorporation repair mechanism if the non-nominal material is not complex.
→ P incorporates into C and NOMINALFIRST is satisfied again

A Two-Step Repair Analysis:

① Regular Phrasal Movement

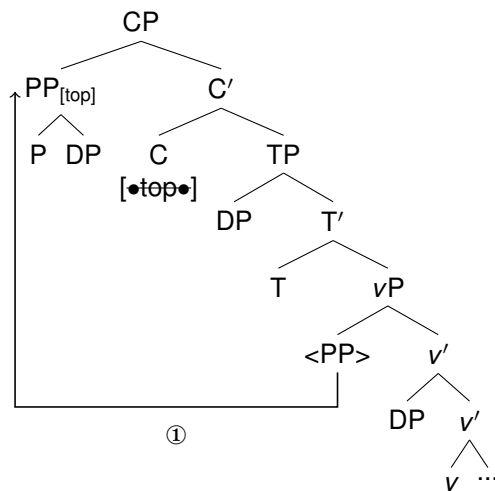
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A Two-Step Repair Analysis:

① Regular Phrasal Movement

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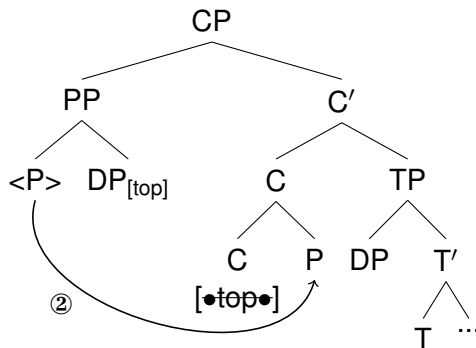


- ◇ P violates the NOMINALFIRST constraint

A Two-Step Repair Analysis:

② Optimization → Incorporation

- (32) P cannot stay in SpecCP (position restricted to nominals)
 → Incorporation → NOMINALFIRST satisfied again



A Two-Step Repair Analysis

Advantages of this analysis

- ◇ The head movement step is local in contrast to van Urk's (2015) analysis (for a similar head movement step see e.g. Harizanov 2014).
- ◇ The head movement step is an actual repair mechanism which follows and does not precede the situation that it is supposed to repair.
- ◇ Head movement as a repair for an illicit non-nominal in SpecCP explains why only simple PPs can be topicalized.
- ◇ Since there is a strong similarity between the Dinka and the Turkana data, it is desirable to have a unified analysis.
 - 👉 same restriction (NOMINALFIRST)
 - 👉 same repair (Incorporation)
 - 👉 two domains (Turkana: nominal domain & Dinka: clausal domain)

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Conclusion

Turkana

- ◇ The presented two-step repair analysis captures the Turkana data where non-nominal modifiers incorporate into the head noun prenominaly, while they appear unbound postnominally.
- ◇ The bound appearance of these otherwise unbound elements correlates with a restricted initial position and is derived through incorporation as a repair mechanism.

Taking Dinka and Turkana together

- ◇ Same repair mechanism for the same restriction in two different domains
- ◇ To the best of my knowledge, this adds a novel repair mechanism to the growing body of syntactic repairs (e.g. Collins 2001, Grimshaw 2013).

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