

# Preserving Noun-Initiality through Incorporation in the Turkana DP

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## The Puzzle

### (1) Turkana

- a.  $\eta a$ -kile  $\eta a$ -di (unmarked word order)  
F.PL-milk F.PL-some  
'some milk'
- b.  $\eta a$ -di-kile  
F.PL-some-milk

## Two-step repair analysis

-  Driving force: strong preference for a noun-initial DP
- ① Regular phrasal movement to the prenominal domain
  - ② Incorporation as a repair mechanism to preserve noun-initiality

# Roadmap

1. Data - Modifiers in the Prenominal Domain
2. Incorporation before Phonology
3. Analysis
4. Conclusion

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# Data

## Turkana, Eastern Nilotic

- ◇ spoken in the North of Kenya
- ◇ 1,020,000 speakers (Eberhard et al., 2023)
- ◇ If not otherwise indicated, the Turkana data come from own fieldwork with three native speakers Janet Akuam, Amos Nakuwa Emoru and Geoffry Edapal to whom I am grateful for their valuable work as linguistic consultants.

# Background

## → Noun-initiality

- (2)    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

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

## Simple Quantifiers

- (4) a. a-bɛɾʊ      a-tʃɛ      (unmarked)  
 F.SG-woman F.SG-other  
 ‘another woman’
- b. a-tʃɛ-bɛɾʊ  
 F.SG-other-woman
- c. \*a-tʃɛ      a-bɛɾʊ  
 F.SG-other F.SG-woman

Note: an unbound prenominal quantifier in (4-c) would violate noun-initiality.

The Complex Quantifier *-kidikidio*

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



## Numerals

- (6) a.  $\eta a$ -b $\epsilon r$        $\eta a$ -kan-k-omw $\omega$ n      (unmarked)  
 F.PL-woman F.PL-five-LINK-four  
 ‘nine women’
- b. \* $\eta a$ -kan-k-omw $\omega$ n-b $\epsilon r$   
 F.PL-five-LINK-four-woman
- c.  $\eta a$ -kan-k-omw $\omega$ n     $\eta a$ -b $\epsilon r$   
 F.PL-five-LINK-four F.PL-woman

## Nominal Possessors

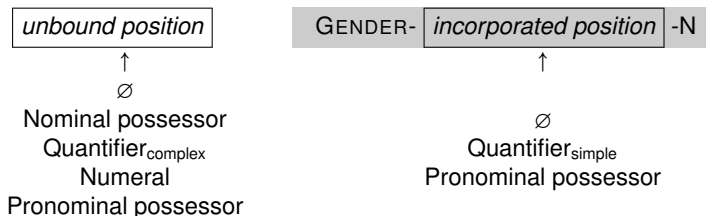
- (7) a.  $\eta\text{I-d}\epsilon$  a e-tuko (unmarked)  
 PL-child of M.SG-zebra  
 ‘children of a zebra’
- b.  $t\text{ə-d}\epsilon\text{m-ara-I}$  e-tuko  $\eta\text{I-d}\epsilon$   
 3.SUBS-take-ITIVE-ASP M.SG-zebra PL-child  
 ‘The children were taken away from the zebra’

# Pronominal Possessors

- (8) a.  $\eta a\text{-}ki$      $\eta a\text{-}kon$  (unmarked)  
 F.PL-ear F.PL-2SG.POSS  
 ‘your ears’
- b.  $\eta a\text{-}kon\text{-}ki$   
 F.PL-2SG.POSS-ear
- c.  $\eta a\text{-}kon$              $\eta a\text{-}ki$   
 F.PL-2SG.POSS F.PL-ear

# Overview of the Prenominal Domain

## (9) Modifiers in the Prenominal Domain



- ◇ Turkana exhibits two prenominal positions.
- ◇ Most modifiers are restricted to one position.
- ◇ Pronominal possessors can appear in both positions.
- ◇ The appearance of a complex quantifier, a numeral and a pronominal possessor in the unbound position looks like a violation of the general noun-initiality.

# Roadmap

1. Data - Modifiers in the Prenominal Domain

**2. Incorporation before Phonology**

3. Analysis

4. Conclusion

# Argument 1: Agreement

In order to argue for incorporation, one has to show that **a**- in (10-b)...

- (10) a. a-bεrʊ      a-tʃɛ  
 F.SG-woman F.SG-other  
 'another woman'
- b. **a**-tʃɛ-bεrʊ  
 F.SG-other-woman

 ...is the nominal gender marker...

(11)      GEND<sub>NOMINAL</sub>-Quantifier-Noun

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

(12)      AGR-Quantifier Noun

# Argument 1: Agreement

- ◊ 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.

- (13)
- a. **a**-beru      **na**-tʃɛ  
 F.SG-woman    F.RESTR-other  
 ‘another woman’
- b. \***na**-tʃɛ      beru  
 F.RESTR-other    woman
- c. **a**-tʃɛ-beru  
 F.SG-other-woman

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

☞ Thus, (13-c) shows incorporation of the quantifier into the noun.

## Argument 2: 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.



## Argument 3: The Size of the Modifier

### (14) Simple Quantifier

- a.  $\eta a$ -kile  $\eta a$ -di  
 F.PL-milk F.PL-some  
 'some milk'
- b.  $\eta a$ -di-kile  
 F.PL-some-milk

### (15) Complex Quantifier

- a.  $\eta a$ -kipi  $\eta a$ -kidikidio  
 PL-water PL-few  
 'small amount of water'
- b. \* $\eta a$ -kidikidio-kipi  
 F.PL-few-water

### (16) Modified Quantifier

- a.  $\eta a$ -kile  $\eta a$ -di tʃɪɾtʃɪk  
 F.PL-milk F.PL-some somewhat  
 'some small amount of milk'
- b. \* $\eta a$ -di-tʃɪɾtʃɪk-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.

# Intermediate Summary

The arguments presented in this section provide empirical evidence that the modifier between the nominal gender marker and the noun incorporates before phonology.

**Result:** Incorporation before phonology

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

# Checking the Prediction

## [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

- (17) 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 (17-b).

 The prediction is confirmed.

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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 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 the 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).

# 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)

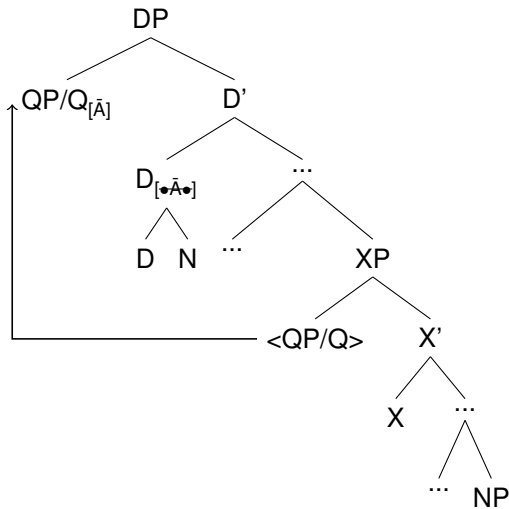
⇒ The strong preference for nominals in an initial position could be a general property of Nilotic languages.



## ① Phrasal Movement

*In the following trees, I will first sketch the derivation with a simple quantifier.*

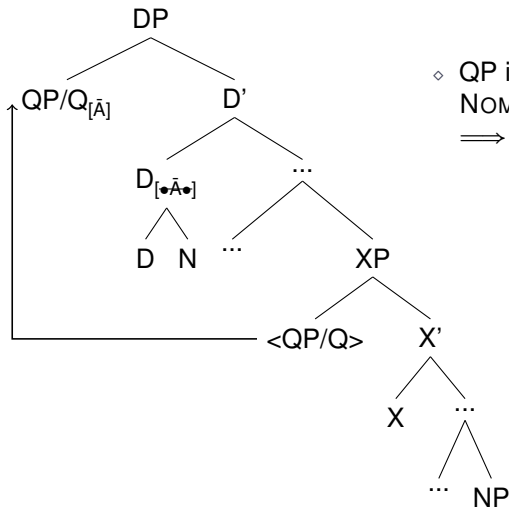
(18)



# ① Phrasal Movement

*In the following trees, I will first sketch the derivation with a simple quantifier.*

(18)



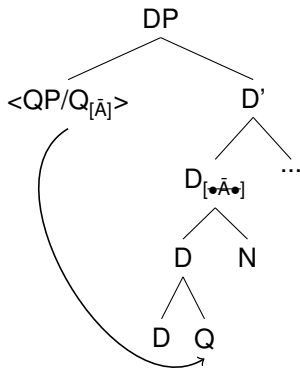
- ◇ QP in SpecDP violates the NOMINALFIRST constraint  
 ⇒ optimization step

# 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.)

(19)

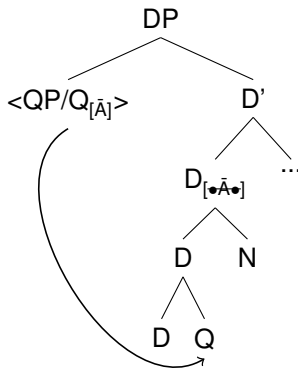


# Optimization: ② Incorporation

## 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.)

(19)



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

# Intermediate status of the analysis I

## (20) Modifiers in the Prenominal Domain

*unbound position*

↑

∅

Nominal possessor

Quantifier<sub>complex</sub>

Numeral

Pronominal possessor

GENDER-

*incorporated position*

-N

↑

∅

Quantifier<sub>simple</sub> ✓

Pronominal possessor

# No Repair

- ◇ There is no need for a repair if something nominal moves to SpecDP.
  - 👉 **Nominal possessors** can appear in the unbound prenominal position.
- ◇ There is no repair mechanism for complex non-nominal elements in SpecDP since incorporation is restricted to min/max elements.
  - ◇ Thus, a DP structure with a complex non-nominal element in SpecDP cannot be optimized.
  - 👉 **Complex quantifiers** and **numerals** appear in the unbound prenominal position.

## Intermediate status of the analysis II

## (21) Modifiers in the Prenominal Domain

*unbound position*

↑

∅

Nominal possessor ✓

Quantifier<sub>complex</sub> ✓

Numeral ✓

Pronominal possessor

GENDER- *incorporated position* -N

↑

∅

Quantifier<sub>simple</sub> ✓

Pronominal possessor

# Intermediate status of the analysis II

## (21) Modifiers in the Prenominal Domain

*unbound position*

↑

∅

Nominal possessor ✓

Quantifier<sub>complex</sub> ✓

Numeral ✓

Pronominal possessor

GENDER- *incorporated position* -N

↑

∅

Quantifier<sub>simple</sub> ✓

Pronominal possessor

- ◇ In order to explain the appearance of the pronominal possessor in both prenominal positions, it is worth to take a look at the strong vs. weak pronoun distinction in Turkana.



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

(Barabas-Weil, 2022)

# Strong and Weak Pronouns II

If one makes the following two assumptions, it is straight forward that pronominal possessors appear in both prenominal positions:

1. 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.
  2. The strong vs. weak pronoun distinction is maintained with pronominal possessives.
- 👉 Weak pronouns are able to incorporate.
- 👉 Strong pronouns stay unbound prenominally.

# Status of the analysis III

## (23) Modifiers in the Prenominal Domain

*unbound position*

↑

∅

Nominal possessor ✓

Quantifier<sub>complex</sub> ✓

Numeral ✓

Pronominal possessor ✓

GENDER- *incorporated position* -N

↑

∅

Quantifier<sub>simple</sub> ✓

Pronominal possessor ✓

# 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
  - These 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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# Conclusion

- ◇ Turkana exhibits two prenominal positions.
- ◇ Arguments coming from agreement and the size of the modifiers demonstrate that one of these positions is the result of incorporation into the noun before phonology.
- ◇ The presented two-step repair analysis connects this pattern to the strong preference for a noun-initial DP, i.e. a restricted initial position to nominals.
- ◇ The two-step analysis makes use of incorporation as a repair mechanism.
- ◇ To the best of my knowledge, this constitutes a novel mechanism of adhering to the noun-initiality requirement and adds to the growing body of syntactic repairs (e.g. Collins 2001; Grimshaw 2013).

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