

# Deriving Turkana Word Order: Head-Movement and Topicality

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## 1. Introduction

The word order of Turkana (Kenya, Nilo-Saharan) is strongly verb-subject-object (VSO) (Dimmendaal 1983a,b), although there are systematic VOS deviations that correlate with what Dimmendaal (1983a, 1985) terms "prominence;" where the object outranks the subject along a certain scale, it takes linear precedence. In what follows, I will provide an analysis of Turkana V-initial word order in terms of V raising, and I will attempt to capture Dimmendaal's insights in terms of a set of constraints that interact to yield the observed word order (the verbal arguments will also be ordered in terms of hierarchical prominence). The properties that the prominence constraints are sensitive to are morphosyntactic -- pronominal, definite, etc. -- though these notions do have discourse correlates. I will argue that a low topic position in the functional architecture of the clause is implicated in the analysis, and I will motivate this position via arguments from adverb placement and ellipsis.

## 2. VSO~VOS

The examples in (1) illustrate VSO order. The order in these examples is rigid; permutation of the full DPs in these examples is disallowed

- |       |  |                     |
|-------|--|---------------------|
| 1. a. | ε`-a`r-i` eki`le ηol` ηityaηi`<br>3-kill-A man(Nom) that game<br>'that man is killing game'              | Dimmendaal (D) 1983 |
| b.    | à-in-akì i-tòd a-k-ìmuj lò-kìle`<br>3-give-DAT mother food LOC-man<br>'Mother has given food to the man' | D85                 |
| c.    | egjel edaktar esukar<br>buy doctor sugar<br>'The doctor bought sugar'                                    | SB                  |

On the other hand, VOS order is obligatory with inanimate subjects and animate objects, as in (2a), but impossible with pronominal subjects ((2b,c)) (Dimmendaal 1983b). Furthermore, VSO and VOS can alternate, as in (3), where the object is pronominal (Dimmendaal 1985).

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2. a.  $\varepsilon$ -a`r-it` akine` a-ko`ro` D83b  
 3-kill-A goat hunger(Nom)  
 ‘the goat is hungry’ (hunger is killing the goat)
- b. \* $\varepsilon$ -a`r-i(t)` akine` ηesi`  
 3-kill-A goat 3SG(Nom)  
 ‘he is killing the goat’
- c.  $\varepsilon$ -a`r-i` ηesi` akine`  
 3-kill-A 3SG(Nom) goat  
 ‘he is killing the goat’
3. a. k-a`-ηam-i` ayoη` a-ki`ηa`η b. k-a`-ηam-i` a-ki`ηa`η ayoη`  
 P-me-eat-A me crocodile(Nom) P-me-eat-A crocodile(Nom) me  
 ‘the crocodile will eat/ is eating me’ ‘the crocodile will eat/ is eating me’

I will argue that these facts follow from an analysis in which notions of topicality interact with the syntactic operation of V-to-T raising, an instance of head-movement (one of several competing analyses proposed for VSO orders (cf. the papers in Carnie and Guilfoyle 2000)). To slightly anticipate the analysis, I sketch the basics of this VSO derivation below. Arguments receive their theta roles within vP, and V(+v) raises to adjoin to T.

4. VSO  $[_{TP} [V+v]+T [_{vP} \text{Sbj } \checkmark [_{vP} \checkmark \text{Obj} ]]]$

A straightforward application of V-raising, however, fails to account for the VOS orders, and so the operation must be supplemented. Such a supplement must somehow bring together the thematically extended (2a) with the thematically ordinary (3a), blocking (2b), while simultaneously preventing a VSO derivation for (2a) but allowing one for (3b).

The proposed analysis involves a low topic-like position (Spec XP in (5)-(6) below) in the functional structure of the clause below T. (4) is thus amended to (5). The proposed structures for the VSO and VOS sentences are given schematically in (6).

5.  $[_{TP} [V+v]+T [_{XP} \text{---} [_{vP} \text{Sbj } \checkmark [_{vP} \checkmark \text{Obj} ]]]]$
6. a. VSO  $[_{TP} [V+v]+T [_{XP} \text{Sbj } [_{vP} \text{Sbj } \checkmark [_{vP} \checkmark \text{Obj} ]]]]$   
 b. VOS  $[_{TP} [V+v]+T [_{XP} \text{Obj } [_{vP} \text{Sbj } \checkmark [_{vP} \checkmark \text{Obj} ]]]]$

### 3. VSO: the subject leaves vP

Roberts (2005) and McCloskey (1997) argue that Welsh and Irish subjects (respectively) leave the vP theta-assignment domain for a higher functional category. They use as evidence the fact that the subject occurs to the left of VP-adjoined adverbials in these languages, as shown in (7) (adverbials are boldfaced).

7. a. Deireann siad **i gcónaí** paidir roimh am lui. Irish (McCloskey 1997)  
 say they **always** prayer before time lie [-FIN]  
 ‘They always say a prayer before bedtime.’
- b. Nior shaotaigh Eoghan **ariamh** pingin Welsh (Roberts 2005)  
 Neg-past earned Owen **ever** penny  
 ‘Owen has never earned a penny’
- c. \*Mi welith **yfory** Emrys ddraig  
 PRT will-see **tomorrow** E. dragon  
 ‘Emrys will see a dragon tomorrow’

Following this line of argument, I suggest that the existence of Turkana sentences such as those in (8) implicate a structure such as (6a) over one such as (4). Assuming that adverbials are adjoined to vP, or are housed in separate projections above vP, and that the subject is initially merged within vP, we can infer from its surface position that the subject DP moves to a slot higher than its merge position in the examples below.

8. a. \*kegjenete **katipei** ñidaktar ñekine SB  
 sold **quickly** doctor goats  
 ‘The doctor sold the goats quickly’
- b. kegjenete ñidaktar **katipei** ñekine  
 sold doctor **quickly** goats  
 ‘The doctor sold the goats quickly’
- c. kaañamì akìñàñ **loge** ayòñ  
 P-me-eat-A crocodile **slowly** me  
 ‘The crocodile will eat/ is eating me slowly’
- d.  $[_{TP} [V+v]+T [_{XP} Sbj [_{vP} Adv [_{vP} Sbj \nabla [_{vP} \forall Obj ]]]]$

Example (8a), in which an adverb intervenes between the verb and the subject, was judged ungrammatical by one Turkana consultant. On the other hand, (9), similar to (8a), was judged as acceptable by another consultant. This latter consultant, however, also accepted sentences in which the adverb followed the subject, as in (8b).

9. kaanyamì loge akìnyàng ayòng SB  
 P-me-eat-A slowly crocodile me  
 ‘The crocodile will eat/ is eating me slowly’

The situation would definitely be crisper if there were agreement about the status of the V-Adv-Sbj order, but given that there is agreement about V-Sbj-Adv order, I will conclude that the subject may move out of vP; the other order remains to be investigated further. As a tentative solution, I will assume that adverbs may also adjoin to the XP category for some speakers.

Another reason to adopt the structure shown in (6a) comes from ellipsis data. While it is true that in general, both object and subject pro drop is possible in Turkana, examples such as (10) are ambiguous. The woman may want the man’s food, but importantly for present purposes, the sentence has an interpretation in which she wants her own food; sloppy identity, a symptom of ellipsis, is possible here.

10. asaki ekile kimudj-keng na: asaki aberu\_\_\_\_ SB  
 wants man food his and wants woman\_\_\_\_
- a. strict: ‘The man wants his food, and the woman wants his food’  
 b. sloppy: ‘The man wants his food, and the woman wants her food.’

If the missing object were a null definite pronoun (*pro*), we would not expect the sloppy interpretation; the pronoun would simply pick up the denotation of the preceding object DP (or possibly any other definite DP antecedent).<sup>1</sup> An analogous case from English, shown in (11b), also shows the strict/sloppy ambiguity, but (11c) yields only the strict interpretation.

11. a. Mary wants her bicycle, and Sally wants her bicycle, too.

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<sup>1</sup>A reviewer points out that a sentence with a relational noun in direct object position would provide a better test of the strict/sloppy distinction. Such examples will be tested in future work.



generalization to be valid, we can tentatively conclude, on the basis of Turkana agreement, that the availability of sloppy identity is due to vP rather than DP ellipsis, though clearly more work is called for.<sup>3</sup>

So from two perspectives, adverb placement and ellipsis, we have evidence in support of the claim that the Turkana subject leaves vP in VSO sentences, raising to a projection lower than the landing site of the verb. The proposed structure is repeated in (14).

14. VSO [<sub>TP</sub> [V+v]+T [<sub>XP</sub> Sbj [<sub>vP</sub> Sbj v [<sub>VP</sub> v Obj ]]]

I now turn to VOS word order.

#### 4. VOS: the object leaves vP

According to Dimmendaal, one of the conditions under which VOS order is possible is when the direct object is pronominal. The pair of examples in (15) below, repeated from (3), illustrates this.

- |        |  |    |  |
|--------|--|----|--|
| 15. a. | k-a`-ɲam-i` ayonɔ` a-ki`ɲa`ɲ           | b. | k-a`-ɲam-i` a-ki`ɲa`ɲ ayonɔ`           |
|        | P-me-eat-A me crocodile(Nom)           |    | P-me-eat-A crocodile(Nom) me           |
|        | ‘the crocodile will eat/ is eating me’ |    | ‘the crocodile will eat/ is eating me’ |

Dimmendaal does not discuss the hierarchical structure of such examples, but given the SVO vP and left-handed Spec,TP that we are assuming, there are at least two ways in which VOS order could arise. According to the first, along the lines of Massam 2000, 2001, Rackowski and Travis 2000, Pearson 1998, and others, a V+Obj constituent fronts. In Massam’s formulation, T has an EPP feature specified for predicates rather than DPs, and so the VP raises. Such an analysis could be implemented here by, for example, raising the subject out of vP and then fronting vP. This approach, combined with our assumption that adverbs can left-adjoin to vP would, however, give us a sentence such as that in (16), which is judged as ungrammatical by one consultant. According to another, a pause after the adverb seems to be necessary, indicating a high adjunction. The example in (16b) has a mixed status. One consultant accepts it, while another rejects it. We thus have partial evidence here against V+Obj fronting as a constituent, since the adverb intervenes between V and Obj.

- |        |   |                       |
|--------|---|-----------------------|
| 16. a. | *logɛ ka`nyami` ayonɔ` akinyang`              | SB, adapted from D83b |
|        | slowly P-me-eat-A me crocodile                |                       |
|        | ‘The crocodile will eat/ is eating me slowly’ |                       |
| b.     | %ka`nyami` logɛ ayonɔ` akinyang`              | SB, adapted from D83b |
|        | P-me-eat-A slowly me crocodile                |                       |
|        | ‘The crocodile will eat/ is eating me slowly’ |                       |

Or, if the object were to raise separately out of vP to a higher functional projection prior to the merge of the adverb (or tuck in beneath the adverb if the adverb is already present), then a fronted (now remnant) VP could raise around both, yielding the observed order in (16b). Such a derivation, however, undermines the initial attractiveness of the VP fronting idea, but whether or not such an analysis is viable is a question separate from the one currently being addressed, whether V+object raises as a constituent across the subject, and to this question, the answer seems to be no.

Alongside the data in (16), the VOS sentences in (17) occur. These were accepted by the two informants who were queried about them. The tentative conclusions above that V O order is derived via separate movements is also applicable to these examples.

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<sup>3</sup>In Swahili V-stranding ellipsis, strict identity is forced when the object marker is present on the second verb, while the lack of the object marker yields strict/sloppy ambiguity (Ngonyani 1998).

17. a. kaanyamì ayòng loge akinyàng SB, adapted from D83b  
 P-me-eat-A me slowly crocodile  
 'The crocodile will eat/ is eating me slowly'
- b. kemuki ayong katipei itoo kang a egolos SB, adapted from D83b  
 cover me quickly mom with blanket  
 'Mother covered me with a blanket'
- c. k-à-kàŋ-ɪ̄ ayon e-muni lò-ki-mòy-in  
 t-me-bite-A me snake(N) in-finger  
 'A snake bit me in the finger'/I was bitten by a snake in my finger' D83b

Some form of the vP fronting analysis may be applicable here, but these examples are also quite compatible with an analysis in which the object raises separately, in a way similar to what has been argued for the subject. A further piece of evidence in favor of the separate fronting analysis comes from Dimmendaal's secondary gloss of (17c) that uses the passive, which is supported by the fact that one of the consultants volunteered an English passive sentence as the translation of (17b).<sup>4</sup> The existence of these paraphrases suggests that the object has a degree of prominence that it would lack if it were *in situ* as a complement to the V inside a fronted vP constituent. Given this, as well as the pragmatics of such sentences (Dimmendaal 1983), to which we will shortly turn, a separate fronting of the object may be a more fruitful line of investigation to pursue.

In summary at this point, I have argued that there is a position in the clausal architecture above the Turkana vP, to which either a subject or object may raise. In so doing, the fronted argument will cross any vP-adjoined adverb, and a structure will be created in which the argument is external to an ellipsis site.

## 5. Dimmendaal's Prominence Hierarchy and the Position of Fronted Arguments

Dimmendaal 1983b argues that the alternations in the Turkana word order patterns that have been surveyed arise out of a prominence hierarchy involving topicality that interacts with VSO order. He notes that Turkana subjects are most often definite and animate, and arguments with these properties are favorites among topics. Similarly, through the use of a pronoun -- a definite DP -- a speaker is able to pick up and continue a previously-introduced discourse topic.

The examples that have been presented so far show alternations in VSO/VOS order, but there are cases in which VOS order is obligatory, cases in which, Dimmendaal claims, the subject is not a "natural topic." Sentences containing experiencer predicates, which have interesting properties cross-linguistically, are in this class.<sup>5</sup>

18. a. k-a-nyam-It ayong a-koro D85  
 P-me-eat-A me hunger  
 'I am hungry'
- b. k-a-irum-it-o ayong ngi-leci  
 P-me-hold-A-PL me shame  
 I feel ashamed

<sup>4</sup> These same considerations weigh against an analysis in which the object pronoun is analyzed as a verbal clitic

<sup>5</sup> Dimmendaal (1983a) mentions psych predicates as triggering VOS order, and he also observes that inanimate subjects occur in VOS orders. These examples, as well as the one in (2a), has both of these properties (Dimmendaal argues for a non-literal "psych" interpretation of (2a)).

- c. k-a-Imuri-akin –it ayong e-kiro  
P-me-forget-DAT-A me name  
I forgot the name.

And among sentences that can show VSO order are ditransitive sentences formed with the applicative (which Dimmendaal glosses as “DAT”), where an oblique is promoted to object position.

19. a. kI-In-akI i-too ngwoni nga-kile D85  
us-give-DAT mother us milk  
‘Mother has given us some milk’
- b. a-en –iki ajong a-tubwa inaa  
I-tie-DAT I boat there  
‘I tied a boat there’
- c. a-ingol iki ayong a-tubwa  
I-look-DAT I boat  
I have looked at the boat

The examples in (20) show that if this derived object is a pronominal, it may precede the subject, although not otherwise.<sup>6</sup>

20. a. kI-In-akI ngwoni i-too a-ki-muj D85  
us-give-DAT us mother food  
‘Mother has given us some food’
- b. \*a-en–iki a-tubwa ajong inaa  
I-tie-DAT boat I there
- c. \*a-ingol-`iki a-tubwa ayong  
I-look-DAT boat ayong  
I have looked at the boat

The schema in (21) more directly relates the postverbal position to this notion of topicality; XP in (5) is replaced by TopP.

21. [<sub>TP</sub> [V+v]+T [<sub>TopP</sub> — [<sub>VP</sub> Sbj ∇ [<sub>VP</sub> ∇ Obj ]]]

Belletti (2004) has proposed similar-looking low topic position for Italian, but in contrast to earlier Turkana examples, the Italian subject is unable to precede adverbs. Recall that the Turkana examples showed either order of subject and adverb, or illustrated a preference for Subj<Adverb order.

22. a. ?Capirà completamente Maria Italian (Belletti 2004)  
will understand completely Maria
- b. ?Spiegherà completamente Maria al direttore  
will explain completely Maria to the director

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<sup>6</sup>Dimmendaal notes that the derived object in the applied construction obligatorily precedes the second object, whether pronominal or otherwise. In the corresponding PP construction, the direct object (corresponding to the second object in the applied construction) may front to the low topic position if it is pronominal.

23. a. \*Capirà/spiegherà Maria completamente (al direttore)  
will understand/explain Maria completely (to the director)
- b. \*Capirà/spiegherà Maria bene (al direttore)  
will understand/explain Maria well (to the director)

On the other hand, the word order patterns shown by subjects and direct object pronouns in Turkana bears a resemblance to Mainland Scandinavian object shift data, in particular the Swedish variety, where pronouns are affected optionally. A Danish-Swedish contrast is given in (26) (Engels and Vikner 2007).

24. a. \*Peter læste aldrig den. Danish  
Peter read never it (Engels and Vikner 2007).
- b. Peter læste den aldrig \_\_\_\_.
25. a. Jag såg inte den. Swedish (Erteschik-Shir 2001,  
I saw not it cited in Engels and Vikner 2007).
- b. Jag såg den inte \_\_\_\_.

In order to account for the similar Turkana patterns, I will adapt the Optimality Theory analysis that Engels and Vikner propose for Scandinavian. There are three ordered constraints that affect the objects, SHIFT PRON, STAY, and SHIFT. The former affects object pronouns, the latter affects full DP objects, and STAY blocks movement. They propose that SHIFT PRON outranks STAY and SHIFT in Danish, and they suggest that for Swedish, SHIFT PRON and STAY are tied. Where full DPs are concerned, Icelandic ranks SHIFT above STAY, and full DPs shift, while in Danish, it is the opposite. Full DPs do not shift, but pronouns do. STAY outranks SHIFT.

The Turkana situation is a bit more complicated, since subjects are also involved, and I propose that a similar sets of constraints govern the distribution of subjects and objects with respect to the low Topic position. V-initial order is accounted for by the highly ranked V+v+T constraint. Rankings are provided in (26f). Note that SHIFT DP<sub>SBJ</sub> and SHIFT PRO<sub>OBJ</sub> are equally ranked.<sup>7</sup>

26. a. STAY do not move  
b. SHIFT DP<sub>SBJ</sub> move DP<sub>SBJ</sub> to SpecTop  
c. SHIFT PRO<sub>SBJ</sub> move pronominal Sbj to SpecTop  
d. SHIFT PRO<sub>OBJ</sub> move pronominal Obj to SpecTop  
e. V+v+T adjoin V to v to T  
f. V+v+T >> SHIFT PRO<sub>SBJ</sub> >> SHIFT DP<sub>SBJ</sub>, SHIFT PRO<sub>OBJ</sub> >> STAY

The contrast in (2b-c), shown in (27) is resolved according to (28). The unsuccessful candidate violates the constraint that promotes subject pronouns to Spec,TopP.

27. a. \*ὲ-à`r-i(t)` akine` ηesi`  
3-kill-A goat 3SG(Nom)  
'he is killing the goat'
- b. ὲ-à`r-i` ηesi` akine`  
3-kill-A 3SG(Nom) goat  
'he is killing the goat'

<sup>7</sup>The constraints below deal only with the alternations in word order involving pronouns and full DPs. Word order alternations based on animacy or type of predicate are not considered here.

28.

$[_{TP} T [_{Top} \text{---} [_{VP} Pro v [_{VP} V Obj ]]]]$	V to v to T	Shift Pro <sub>Sbj</sub>	Shift DP <sub>Sbj</sub> , Shift Pro <sub>Obj</sub>	Stay
27a. $[_{TP} [V+v]+T [_{TopP} Obj [_{VP} Pro v [_{VP} V Obj ]]]]$ (*VOS)		*!	*	*
27b. $[_{TP} [V+v]+T [_{TopP} Pro [_{VP} Pro v [_{VP} V Obj ]]]]$ (VSO)				*

The alternation in (3a-b), repeated in (29), is accounted for as in (30).

29. a. k-a`-ɲam-i` ayon` a-ki`ɲa`ɲ  
P-me-eat-A me crocodile(Nom)  
'the crocodile will eat/ is eating me'
- b. k-a`-ɲam-i` a-ki`ɲa`ɲ ayon`  
P-me-eat-A crocodile(Nom) me  
'the crocodile will eat/ is eating me'

30.

$[_{TP} T [_{Top} \text{---} [_{VP} Sbj v [_{VP} V Pro ]]]]$	Vto v to T	Shift Pro <sub>Sbj</sub>	Shift DP <sub>Sbj</sub> , Shift Pro <sub>Obj</sub>	Stay
29a. $[_{TP} [V+v]+T [_{TopP} Pro [_{VP} Sbj v [_{VP} V Pro ]]]]$ (VOS)			*	*
29b. $[_{TP} [V+v]+T [_{TopP} Sbj [_{VP} Sbj v [_{VP} V Pro ]]]]$ (VSO)			*	*

In (30), two constraints, SHIFT DP<sub>SBJ</sub> and SHIFT PRO<sub>OBJ</sub> are tied, and so both candidates are possible (due to the added complication of the subject. Turkana differs from Swedish in its set of constraints and rankings, although the general effect - shift object pronouns or not – appears to be the same). The candidates show violations of equally ranked constraints, and so neither loses (i.e., both win).

Since pronouns are more topic-related than are descriptive NPs, and since subjects are more likely to be topics than objects, a subject pronoun is thus doubly-qualified as the most topical, and it will thus raise into the low topic position in lieu of other arguments (27b/28b). If the subject is a descriptive NP and the object a pronoun, the two topicality factors (subject vs. pronoun) are evenly divided, and either argument can raise (29a,b/30a,b). Otherwise, if there are no pronominal arguments, VSO order results, since subject in general will outrank object in terms of topicality (1a). The sentences expressing psychological states (e.g., (2a), (18)) can be accounted for, once inanimate pseudo-agents (“hunger”) are factored into the topicality hierarchy (“hunger” in (2a) being lower than “goat,” the animate object).

## 6. Conclusion

The analysis of Turkana word order patterns that has been proposed here relies on a configurational syntax interacting with a set of constraints stated in terms of the inherent features of nominal arguments ([±pro], animate, etc.) as well as their thematic roles and configurational positions. The constraints sort the DPs according to these features, and the resultant patterns can be explicated in terms of topicality.

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