

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` | Dimmendaal (D) 1983 |
| | 3-kill-A man(Nom) that game | |
| | 'that man is killing game' | |
| b. | à-in-aki i-tòò a-k-imuj lò-kile` | |
| | 3-give-DAT mother food LOC-man | |
| | 'Mother has given food to the man' | D85 |
| c. | egjel edaktar esukar | |
| | buy doctor sugar | |
| | 'The doctor bought sugar | SB |

*I am grateful to the Turkana Basin Institute (TBI), Lawrence Martin, Director, for a travel and maintenance grant that provided the opportunity to visit the Turkana Basin. Thanks are due to Richard Leakey for his gracious hospitality, and thanks to Ikal Angelei, without whom this project would not have been possible. Examples labeled SB were elicited by members of the Spring 2010 LIN 431/526 class at Stony Brook University (Ellen Broselow, co-instructor), at TBI Summer 2010, or via email Spring 2012. Many thanks to Ikal Angelei, Elvis Ekitala, and Johnmark Ekeno for sharing their knowledge of Turkana. The glosses for the SB data are unfortunately not as complete as those from other sources. Thanks are also due to the students of 431/526, Ellen Broselow, Fred Grine, Meave Leakey, and Anja Deppe for assistance and advice at various stages. Thanks also to an anonymous reviewer for helpful comments.

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).

2. a. $\varepsilon\text{-a}\text{-}\acute{r}\text{-i}\text{-}\acute{t}$ akine` a-ko`ro` D83b
 3-kill-A goat hunger(Nom)
 ‘the goat is hungry’ (hunger is killing the goat)
- b. * $\varepsilon\text{-a}\text{-}\acute{r}\text{-i}\text{-}\acute{t}$ akine` ηesi`
 3-kill-A goat 3SG(Nom)
 ‘he is killing the goat’
- c. $\varepsilon\text{-a}\text{-}\acute{r}\text{-i}$ ηesi` akine`
 3-kill-A 3SG(Nom) goat
 ‘he is killing the goat’
3. a. k-a`-ηam-i` ayon` a-ki`ηa`η P-me-eat-A me crocodile(Nom)
 ‘the crocodile will eat/ is eating me’
- b. k-a`-ηam-i` a-ki`ηa`η ayon` P-me-eat-A crocodile(Nom) 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 $[_{TP} [V+v]+T [_{vP} \text{Sbj } \nabla [_{vP} \nabla \text{Obj}]]]$

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

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.’

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).¹ 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.
b. Mary wants her bicycle, and Sally does, too.
c. Mary wants her bicycle, and Sally wants it, too.

With VP-ellipsis and binding between subject and the possessive position, sloppy identity is expected in (11b), but with a full pronoun in complement position, as in (11c), only strict identity is possible in these contexts.

The facts in (10) follow easily under an analysis according to which both the subject and the verb move out of the vP constituent prior to ellipsis. The classic Sag1976/Williams1977 treatment involves Partee's (1976) derived VP rule, where sloppy identity is treated via λ -abstraction across the subject variable as well as another variable. Since a subject is overtly present in the second conjunct of this example, it presumably moved out of the elided constituent (or was base-generated in an external position, in an interpretive approach). The structure of the second conjunct is provided in (12a) (where movement is indicated via strikethrough and ellipsis via italics), and interpretations of the missing vP are provided in (b) and (c). I assume that the copies of movement in (12a) revert to the appropriate variables (*x*, *P*) at the relevant level, as shown in (12b,c).

12. a. [_{TP} [wants+v]+T [_{XP} woman [_{VP} ~~woman~~ ∇ [_{VP} *wants 3rd's food*]]]]
b. $\lambda x \lambda P [P(x, (\text{his food}))]$ = strict c. $\lambda x \lambda P [P(x, (x's \text{ food}))]$ = sloppy

In (12b,c) the copies of the verb and subject are interpreted as variables bound by λ -operators, and sloppy identity arises in (12b) when the variable in the possessor position is bound by the same operator that binds the subject variable.

English and Turkana differ, of course, in that the verb as well as the rest of the VP undergoes ellipsis in English, while in Turkana, if there is VP ellipsis, the verb is stranded. This type of V-stranding ellipsis is also found several other languages (see Goldberg 2004 for extensive discussion of V-stranding ellipsis). Facts similar to the Turkana facts obtain in Tagalog (Richards 2003), where both subject and verb can be stranded and both strict and sloppy identity are possible.² In (13b) the theme argument moves out of vPas well.

13. a Nagbigay si Juan ng bulaklak sa kanyang asawa, Tagalog (Richards 2003)
AV-gave T Juan Unm flower DAT his spouse
'Juan gave flowers to his wife...'

¹A 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.

²Irish also has V-stranding ellipsis, but as far as I know, the subject of the second conjunct is not strandable, despite the expectations that might be aroused by an analysis in which the subject moves out of vP.

- b. ...at nagbigay din si Bill
and gave also T Bill
'...and Bill did too'
- c. ... at nagbigay naman si Bill ng tsokolate
and AT-gave NAMAN T Bill Unm chocolate
'...and Bill, on the other hand, gave (her) chocolate'

According to Richards, ellipsis is at work here, and he argues against the possibility that the missing objects in (12b,c) are due to ellipsis of only the object DP. Such DP-ellipsis has been proposed for Japanese by, among others, Hoji (1998) and Saito (2007), contrary to a VP-ellipsis proposal by Otani and Whitman (1991). If DP-ellipsis of the Japanese type were available in Turkana, then the argument for the structure in (6a) would be undermined.

I am unable to fully resolve this question at present, but a tentative resolution derives from Saito 2007, where the presence of DP-ellipsis in Japanese and Korean is related to the absence of overt agreement. The Turkana agreement system is too complicated to address here, but see Dimmendaal 1983a, Trommer 2008, and Cysouw 1998, for example, for discussion of its “portmanteau”-like qualities. Assuming Saito’s 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.³

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 [_{TP} [V+v]+T [_{XP} Sbj [_{vP} Sbj v [_{VP} 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.

- | | |
|---|---|
| <p>15. a. k-a`-ɲam-i` ayon` a-ki`ɲa`η
P-me-eat-A me crocodile(Nom)
'the crocodile will eat/ is eating me'</p> | <p>b. k-a`-ɲam-i` a-ki`ɲa`η ayon`
P-me-eat-A crocodile(Nom) me
'the crocodile will eat/ is eating me'</p> |
|---|---|

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

³In 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).

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. *logé kaànyamì ayong` akinyàng SB, adapted from D83b
 slowly P-me-eat-A me crocodile
 'The crocodile will eat/ is eating me slowly'
- b. %kaànyamì logé ayòng akinyàng 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.

17. a. kaànyamì ayòng logé 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-ɪ 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).⁴ 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.

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

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_{SBJ} and SHIFT PRO_{OBJ} are equally ranked.⁷

- 26. a. STAY do not move
- b. SHIFT DP_{SBJ} move DP_{SBJ} to SpecTop
- c. SHIFT PRO_{SBJ} move pronominal Sbj to SpecTop
- d. SHIFT PRO_{OBJ} move pronominal Obj to SpecTop
- e. V+v+T adjoin V to v to T
- f. V+v+T >> SHIFT PRO_{SBJ} >> SHIFT DP_{SBJ}, SHIFT PRO_{OBJ} >> 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. *ε`-a`r-i(t)` akine` ηesi`
 3-kill-A goat 3SG(Nom)
 ‘he is killing the goat’
- b. ε`-a`r-i` ηesi` akine`
 3-kill-A 3SG(Nom) goat
 ‘he is killing the goat’

28.

[_{TP} T [_{Top} ___ [_{VP} Pro v [_{VP} V Obj]]]]	V to v to T	Shift ProSbj	Shift DP _{Sbj} , Shift Pro _{Obj}	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`-ηam-i` ayon` a-ki`ηa`η
 P-me-eat-A me crocodile(Nom)
 ‘the crocodile will eat/ is eating me’
- b. k-a`-ηam-i` a-ki`ηa`η ayon`
 P-me-eat-A crocodile(Nom) me
 ‘the crocodile will eat/ is eating me’

⁷The 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.

30.

[_{TP} T [_{Top} ___ [_{VP} Sbj v [_{VP} V Pro]]]	Vto v to T	Shift ProSbj	Shift DP _{Sbj} , Shift Pro _{Obj}	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_{SBJ} and SHIFT PRO_{OBJ} 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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