

On Verb-Initial and Verb-Final Word Orders in Lokaa

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Abstract: Verb phrases seems to be head initial in affirmative sentences in Lokaa (a Niger-Congo language of the Cross River area of Nigeria) but head final in negative clauses and gerunds. This article aspires to give a comprehensive description of this phenomenon, together with a theoretical analysis. It considers how a full range of grammatical elements are ordered in both kinds of clauses—including direct objects, second objects, particles, weak pronouns, complement clauses, serial verbs, adverbs, prepositional phrases, tense/mood particles, and auxiliary verbs. The pattern that emerges is a bit different from the one found in some superficially similar languages, such as Vata, Bambara, Nupe, and Nweh. I argue that the details are correctly explained by a “remnant movement” theory in which the Lokaa verb first moves out of the verb phrase to combine with tense/agreement inflection, and then the rest of the verb phrase moves as a unit into a specifier position at the top of the clause. This position is available because the notional subject undergoes dislocation in Lokaa, as has been claimed for many of its Bantu kin.

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1. Framing the issue

While a large percentage of the world's languages can comfortably be categorized as head-initial (subject-verb-object (SVO)) or head-final (subject-object-verb (SOV)) languages (Dryer, 1992, Greenberg, 1963), there are some that show mixed patterns of one kind or another. SVO and SOV orders are known to coexist in some West African languages, for example, depending on various factors. Lokaa, a language spoken in the Cross River region of Nigeria is one of these. Its basic grammar has been ably described by Iwara (1982), but otherwise little syntactic work has been done on it. Simple affirmative sentences have SVO order, as shown in (1).¹

- (1) a. Úbi ó-kpèèyì kò-póó
Ubi 1AGR-sell 11-cup
'Ubi sold a cup.'
- b. Benben yá-tùm yá-jí è-sàu.
children.2 2AGR-very 2AGR-eat 7-fish
'Children eat fish a lot.'

In contrast, negative sentences systematically have SOV order, as shown in (2).

- (2) Úbi kò-póó òó-kpèèyì.
Ubi 11-cup NEG/1AGR-sell
'Ubi didn't sell a cup.'

Gerundive clauses also have OV order, as shown in (3). (Notice that the gerundive verb **ke-ji** ‘eat’ has no overt subject distinct from that of the matrix verb **o-kooma** ‘stop’, so the position of the subject in this embedded clause—if any—is not obvious.)

(3) Úbi ó-kòòmà è-sàu kè-jii.

Ubi 1AGR-stop 7-fish GER-eat

‘Ubi stopped eating fish.’

Alternations like this are of general interest, because they call into question whether all phrases can be built by simple and general principles (or rules) of phrase structure. A general statement like “heads come before complements” works very well in English, and the opposite statement “heads come after complements” works well in Japanese. But neither seems adequate for Lokaa. These alternations are also of typological interest, because the exact details of what appears where and why seem to differ for languages that are superficially similar. Thus one needs a rather fine-grained typology of word order types, and reliable ways to tell one type from another. In this article, I look in some detail at sentences of this kind in Lokaa, discussing how they are generated, and how the orders found in Lokaa differ from those of certain other, superficially similar African languages.

I assume from the outset that (1)-(3) are not to be accounted for by including (the equivalent of) both the phrase structure rule $VP \rightarrow V NP$ and the rule $VP \rightarrow NP V$ in the same language. This would not be a very revealing solution, even if it were considered a legitimate theoretical option. One could imagine that a language analyzed in this way might have some verbs that appeared finally in the verb phrase and other verbs that appeared initially, as a matter of lexical idiosyncrasy. In such a language, one might

consistently say ‘Ubi sold a cup’ but ‘Ubi a fish ate.’ But Lokaa is not like this, nor is any other known language. Nor does Lokaa allow sentences like ‘Ubi sold a cup’ and ‘Ubi a cup sold’ in free variation. Rather, which order of verb and object one finds in Lokaa is clearly conditioned by how the verb is inflected for tense, mood, and aspect. It is verbs that bear the negative inflection (a low tone prefix) or a gerundive prefix (*ke-* or *ke-*, depending on ATR vowel harmony) that come after the object; the same verbs with different inflections always come before the object. Now the tense/aspect/mood inflection is often treated as a separate syntactic element in generative studies; see Chomsky (1957, 1981). So the real answer to the word order alternation in Lokaa should involve the dynamics not only of V and NP (and other VP-internal phrases), but also the dynamics of V(P) and Infl, where Infl (short for ‘inflection’) stands for one or more distinct syntactic nodes that express tense/mood/aspect information. Moreover, if it is wrong to generate both O-V and V-O order directly, then one order or the other must be derived by some kind of movement. Indeed, the movement in question must be triggered by what is in the Infl node(s) in some manner.

Within these general guidelines, there are a number of derivations that could be considered, and that have been proposed for other languages. It could be that the O-V order seen in negative and gerund clauses is basic, and the verb moves forward to combine with Infl in positive finite clauses. Such a derivation was proposed by Koopman (1984) for Vata and Gbadi. The opposite derivation is also a possibility, in which the V-O order of affirmative clauses is basic, and the verb moves backward to combine with Infl in negative and gerund clauses. This would have the advantage of having the semantically simpler sentence (the positive one) as the one that also is

syntactically simpler, with no verb movement. A third possibility is that it is the object that moves, rather than the verb. For example, V-O order could be basic, with the object moving leftward, to some kind of pre-verbal specifier position in negative and gerundive clauses. Derivations of this sort have been proposed by Koopman (1992) for Bambara, by Aboh (1998) for Gungbe, and by Kandybowicz and Baker (2003) for Nupe. These various derivations are sketched in a cursory way in (4) (more detailed structures are given below).²

- (4) a. $\text{Infl}_{\text{Pos}} [\text{VP cup sell}] \rightarrow \text{Infl}_{\text{Pos}+\text{sell}} [\text{VP cup --}]$ Koopman
 b. $[\text{VP sell cup}] \text{Infl}_{\text{Neg}} \rightarrow [\text{VP -- cup}] \text{Infl}_{\text{Neg}+\text{sell}}$ Reverse-Koopman
 c. $\text{Infl}_{\text{Neg}} [\text{VP sell cup}] \rightarrow [\text{cup Infl}_{\text{Neg}} [\text{VP sell --}]]$ Aboh, etc.

In this article, I argue that none of these fairly simple, one-step movements is adequate to account for the *Lokaa* facts. Instead, I argue that *both* verb movement and phrase movement take place in *Lokaa*. But the phrase that moves leftward is not just the object, but rather the whole VP that contains the object. In other words, I argue for a so-called “remnant VP-movement” analysis, modeled after the one that Nkemji (1995) proposed for Nweh.³ The rest of the article unfolds as follows. Section 2 provides some details of the remnant VP movement analysis, and how it can account for the basic word order alternation in *Lokaa*. Section 3 presents my assumptions about basic clause structure and verbal inflection in *Lokaa* in more detail, including the evidence for verb movement to Infl, the first step in the derivation. Sections 4 and 5 present the case for the distinctive remnant movement aspect of the derivation. Section 4 shows that the remnant VP movement analysis is better than the leftward NP movement analysis in (4c), because it explains the fact that elements other than NPs also come before the negative verb or

gerund in Lokaa, and the fact that when more than one element comes before the verb the relative order of those elements is preserved. Section 5 shows that the remnant VP movement analysis is better than the simple V movement analyses in (4a) and (4b), because the “verb” can actually be a verbal complex consisting of more than one word (mood particle, auxiliary, and main verb). The remnant movement analysis also accounts better for certain facts concerning the scope of negation. Section 6 shows that the remnant VP movement analysis correctly predicts that overt subjects in Lokaa have the status of dislocated adjuncts, rather than normal subjects—a claim that has also been made for Bantu languages. Section 7 concludes.

2. The Remnant Movement Analysis Sketched

Overall, word order in Lokaa seems much more similar to word order in a head-initial language like English than to word order in a head-final language like Japanese. For example, (5a) shows that adpositions come before their NP complements in Lokaa. (5b) shows that independent tense/mood particles come before their VP complements. (5c) shows that complementizer-like elements (here the relative particle) come before their IP complements. (5d) shows that auxiliary verbs come before the VP headed by the main verb.⁴

- (5) a. Úbì ó-yòòyì lì-póó máà ká e-kpàl
 Ubi 1AGR-put 11-cup DEM on 7-chair
 ‘Ubi put the cups on the chair.’
- b. Úbì nà ó-kpó káà

Ubi FUT 1AGR-disappear PRT

‘Ubi will disappear.’

- c. Kà-kòò kà é-fém é-jíí
12-pig 12.REL 7-crocodile 7-eat

‘the pig that the crocodile ate’

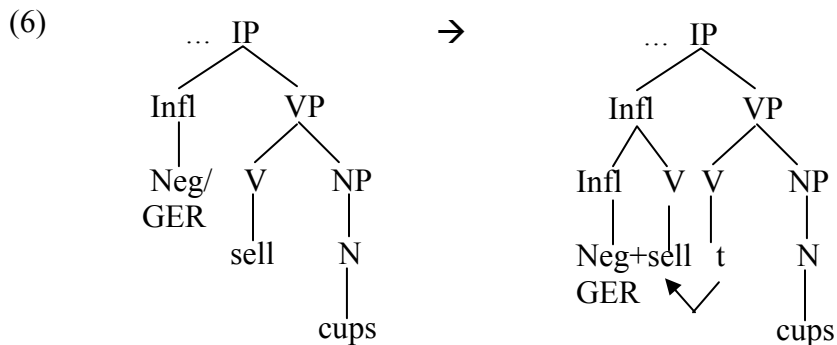
- d. Bànèn yá-yéní yá-kó lò-wí.

Women.2 2AGR-do.again 2AGR-fetch 13-water

‘The women fetched water again.’

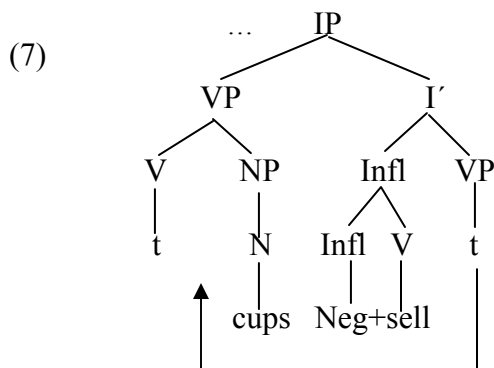
Ideally, then, we would like to say that the language is purely head-initial, with specifier-head-complement order throughout. Indeed, this conclusion would be forced on us if all phrases in a language are structured by the same general principles, which are blind to category specific features.

This assumption automatically gives us the S-Infl-V-O-X order found in tensed affirmative sentences. How then can the O-V orders of negative and gerundive clauses be derived? I claim that this happens in two steps. First, the verb undergoes head-to-head movement, to combine with the affixal morpheme in I (see Koopman 1984, Pollock 1989, and many others):



This first step is probably not special to negative and gerundive clauses in Lokaa. Positive finite verbs in Lokaa (except simple imperatives) also bear a prefix that indicates subject agreement and mood (indicative vs. conditional vs. relative), as well as a suffix that expresses aspect (perfective vs. imperfective—aorist vs. continuative in Iwara’s terminology). The simplest explanation of this is that the verb always moves to Infl in Lokaa, perhaps by way of a distinct Aspect head (see section 3 for examples and discussion).

The second step in the derivation is the one that gives negative and gerundive clauses their distinctive word order. The verb phrase, which no longer contains the verb, moves to the specifier of IP if Infl is either negative or gerundive (see Nkemji (1995) on Nweh):



This creates the right gross word order, with the object coming before the inflected verb. It does, however, immediately raise the question of where the subject is. For SVO languages like English, it is normal to say that the subject is in the Specifier of IP position, but if (7) is correct for Lokaa then that position is otherwise occupied. I defer this question until section 6, where I argue that the Lokaa subject is adjoined to IP. Notice that this second step only gives the correct O-V word order under the assumption

that the verb has already moved out of the VP; otherwise, the VP movement would leave the relative order of object and verb unchanged. Therefore, the derivation of the distinctive word order in negative and gerund clauses crucially depends on verb movement, even though that verb movement is not restricted to such clauses. These, then, are the essentials of my analysis stated in the most general terms. It remains to refine the analysis, and to present evidence that supports this analysis as opposed to the obvious alternatives.

3. **Clause structure and verb movement in Lokaa**

The first step in this two-stage derivation, shown in (6), is a standard analysis, and fairly easy to motivate in Lokaa. I present the evidence for it in the context of a general discussion of the morphological structure of the Lokaa verb and how it relates to the syntactic structure of the clause. This provides useful background for understanding many of the examples that follow.

Tense, aspect, and mood distinctions in Lokaa are expressed by a combination of up to three elements, in addition to the verb root (see Iwara 1982). Some representative examples are given in (8).

- (8) a. yá-kó-i ònèn. (cf. kóó ònèn!)
- 2AGR-advise-PERF person advise person
- ‘They advised someone.’ (Advise someone!)
- b. yá-kóó-yí ònèn.
- 2AGR-advise-IMPF person
- ‘They are advising someone.’

- c. yá-kó-kó-wáí bong.
 2AGR-REDUP-wash-IMPF thing
 ‘They are washing things; they always wash things.’
- d. nà ng-kó-i blong.
 FUT 1sS-wash-PERF clothes
 ‘I will wash the clothes’

Perhaps the most important tense/mood/aspect distinction in Lokaa is the one between perfective (Iwara’s aorist) and imperfective verbs (Iwara’s continuative). The imperfective verb stem is generally longer than the perfective verb stem, being augmented by some kind of suffix (e.g. (8a) versus (8b), also **ó-yom** ‘he lay down’ versus **ó-yom-mi** ‘he is lying down, he always lies down’), plus in some cases reduplication (e.g.,(8c) versus (8d)). Aspectual morphology is not very regular in Lokaa, however, and Iwara 1982 treats each verb as having distinct perfective and imperfective stems that need to be memorized on a case by case basis. Two treatments of aspect are thus plausible. Aspect could be a distinct syntactic head from the verb root, to which the verb moves in the syntax, forming a single word. The Aspect affix and the root are then spelled out by fairly idiosyncratic rules of contextual allomorphy (as in Hale and Marantz 1993). Alternatively, the aspect and verb could constitute a single node in the syntax, projected simply as V. I consider the first approach to be plausible on general theoretical and comparative grounds, but have no decisive Lokaa-internal evidence for it. Therefore, for clarity and simplicity I ignore the possible presence of an Aspect node in the discussion and representations that follow. All verbs in Lokaa are perfective or imperfective (or a

minor variant of one of these), so this can be considered an obligatory element in the Lokaa clause

More important for our purposes is the agreement prefix, seen on all the verbs in (8), and indeed on all Lokaa verbs except for imperatives and gerunds. The obvious function of this prefix is to express agreement with the subject in noun class (gender and number), much as in a Bantu language. This aspect of Lokaa morphology is very regular and transparent and is of obvious significance to the syntax, so I assume that it is generated as a syntactically distinct head that I call Infl. I take it to be syntactically parallel to the familiar Infl (or Tense) node that expresses tense and subject agreement in Indo-European languages, even though no past vs. present tense distinction is encoded morphologically in Lokaa, according to Iwara's (1982) description. (Perfective verbs are interpreted as past if they express events, and as present or past if they express states. Imperfective verbs are usually interpreted as present tense in isolation, but can hold in the past, especially when combined with adverbs. This is common in many languages with a strong aspect distinction and little or no tense marking.) The tone on the Infl prefix is also grammatically significant. In simple matrix clauses it is usually high, but in some dependent/subordinate clauses it is low, and in conditional clauses it is a high-low contour. I leave open whether these tones constitute separate heads in the syntax, or whether these features are simply part of what is expressed in a single Infl node in Lokaa. (But see below for discussion of the low-high tone pattern found on the agreement prefixes in negative clauses, the syntactic status of which I do take a stand on.)

The last major contribution to the Tense-Mood-Aspect system in Lokaa comes from what Iwara calls the preverb. The future particle **n̩** in (8d) is one of these, as is the

subjunctive **te** in (34) below. Since **nà** seems to be a general irrealis category, I refer to this as Mood (rather than tense), and analyze it as an additional functional head, higher in the structure of the clause than Infl. So the sequence of functional heads in the Lokaa clause is (at least) Mood – Infl – (Aspect) – Verb.

The fact that Mood is a distinct head from Infl, and higher than it in the structure of the clause is confirmed by data from serial verb constructions (SVCs) in Lokaa. Consider the example in (9), which contains two verbs within a single clause, with no explicit marker of coordination or subordination.

- (9) Úbì nà ó-kóbí lò-wí (*nà) ó-ganà ká gbángbán.
 Ubi FUT 1AGR-fetch 13-water FUT 1AGR-put in basin
 ‘Ubi will fetch water and put it in the basin.’

The two verbs each have their own (identical) Infl prefixes. There is, however, only one mood marker, which has both verbs in its scope: both the fetching and the putting are in the unrealized future with respect to the speech time. So the SVC in Lokaa seems to have a structure in which two IPs are merged together to form a complex IP; this complex IP is then the complement of a single Mood head (see the diagram in (40) below). This confirms that Mood is distinct from and higher in the clause structure than Infl.

Now to flesh out (6), we must consider which of these functional heads the verb move to in Lokaa. I claim that verbs in Lokaa raise to Infl (passing through Aspect, if that is a distinct head) but not to Mood. The primary evidence for this comes from phonological considerations. Like other prefixes in Lokaa, the agreement morpheme undergoes ATR harmony, triggered by the vowel quality of the root: if the vowels of the root are +ATR, then the +ATR variant of the prefix is used, as in the first verb in (10); if

the vowels of the root are –ATR, then the vowel of the prefix is –ATR, as in the second verb in (10).

(10) Yó-wólí ból yò-wòònà ké. (Iwara 1982: 161)

1pS-play ball 1pS-tired PERF

‘We played football until we got tired.’

So the Infl in Lokaa clearly forms a phonological word with the verb stem. This suggests that it is an affix that triggers verb movement to Infl in the syntax. The plausible alternative would be to say that Infl is a clitic that unites with the verb stem in under string adjacency in the post-syntactic phonology. But there is evidence against this alternative, in that clear cases of clitics in Lokaa are excluded from the domain of vowel harmony (I thank Akin Akinlabi for discussion of this point). Simple object pronouns in Lokaa are clitics, attaching phonologically to the verb if they are immediately adjacent to it. This can trigger rules of vowel hiatus (cf. (11b)).

(11) a. Tá-wé (cf. ta: ‘investigate!’)

investigate-him

‘Investigate him!’

b. ó-tááyí (w)ò → [ótá:y’ò:]

1AGR-investigate you

‘He investigates you.’

But the object pronouns clearly do not form a word together with the verb in the syntax.

This is seen by the fact that they must separate from the verb in negative sentences:

(12) a. Wé ká táá

him NEG/IMP investigate

‘Don’t investigate him.’

b. wó ò-táy

you NEG/1AGR-investigate

He didn’t investigate you.

Correlated with this syntactic separability is the fact that these object clitics are neither triggers nor targets for ATR harmony. The third singular pronoun e and the second singular pronoun o are both –ATR, and they remain –ATR even when they encliticize onto a +ATR verb root:

(13) a. Kói-ie.

wash-him

‘Wash him!’

b. ó-kói-iò

1AGR-wash-you

‘He washed you.’

The only +ATR vowel of the verb root can even be deleted in context of the object clitic, but the ATR value of the cliticized pronoun nevertheless does not spread onto the prefix:

(14) ó-t-ò. (from tì ‘step on’ + ò ‘you’)

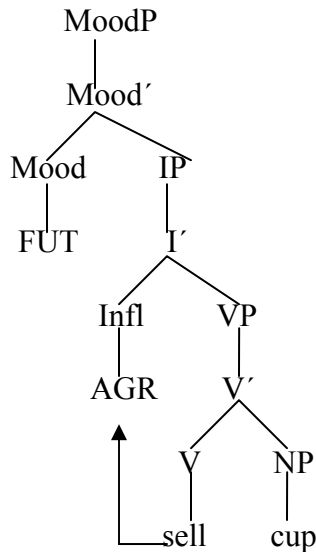
AGR1-step.on-you

‘He stepped on you.’

So clear instances of PF clitics do not participate in vowel harmony in Lokaa. But the Infl morphemes do participate in vowel harmony. So they must be attached in a more intimate way than mere clitics are; they must be true affixes, triggering head movement of the verb.

In contrast, the mood particles in Lokaa do not participate in vowel harmony with the root. Indeed, the future particle **nà** contains the vowel schwa, which does not participate in the vowel harmony system, and is blocked from appearing in prefixes in Lokaa by general phonological principles. This suggests that the verb moves to Infl, but not to Mood. The structure of the basic clause in Lokaa is thus roughly as shown in (15).⁵

(15)



Given this background on clause structure, we can now ask where negation and the gerund marker—the two inflectional elements that trigger object-verb order in Lokaa—fit in. Consider first negation. Negation is realized phonologically as a low tone prefix that docks on the vowel of the agreement prefix of the verb, lengthening that vowel. Since its realization is tonal, it is not immediately obvious whether it is a distinct morpheme from the Infl prefix, and if so whether it attaches to before the prefix or after it. From the syntactic perspective, there are three main places it could be: negation could be part of the Infl node, it could be part of the Mood node, or it could be the head of a

third functional phrase such as NegP. I tentatively assume that negation is generated in the Mood node. First, in negative serial verb constructions, there is only a single negative prefix, realized on the agreement prefix of the first verb, even though both verbs are semantically within the scope of negation. This is shown in (16).

- (16) Úbi lò-wí òò-kóbí ò-gana ká gbángbán.
 Ubi 13-water NEG/1AGR-fetch 1AGR-put in basin
 ‘Ubi did not fetch water and put it in the basin.’

There are two Infs here, but only one negation with scope over both; therefore negation must be in a head that is higher than Infl. Negation is perfectly parallel to the more obvious mood marker **n̩** in (9) in this respect. The second relevant fact is that the low tone negative prefix and the future particle **n̩** cannot cooccur in the same clause. A negative future sentence has no preverbal particle, but the agreement prefix on the verb does have a special extra-long vowel with a complex tone contour (Iwara et al., n.d.):

- (17) a. Kò-póó máà n̩ kó-wúù.
 11-cup this FUT 11AGR-full
 ‘The cup will be full.’
 b. Kò-póó máà (*n̩) kòó-wúù.
 11-cup this FUT NEG/FUT/11AGR-full
 ‘The cup will not be full.’

The subjunctive particle **t̩**, which I take to be another member of the category mood, is also in complementary distribution with negation; it is replaced with **nn̩** in negative subjunctive clauses (see (46) for an example). Lokaa also has a special preverbal particle **ka**, which is formally parallel to **n̩** and **t̩** and expresses both negation and imperative

mood; an example was given in (12a). This pattern of facts suggests that negative marking and mood marking are generated as a single portmanteau head in *Lokaa*, with one choice of morpheme expresses both polarity and mood (realis, irrealis, subjunctive).⁶ This is not unreasonable semantically, since the future/irrealis morpheme and the negative morpheme both express the degree of realization/actuality of the event expressed by the verb. The negative Mood then combines with the Infl+verb complex, either by triggering head movement to Mood (unlike the future or subjunctive heads), or by purely phonological processes triggered by its lack of segmental features; I leave open which.

Now consider the gerund head **ke-**. The gerund morpheme is definitely not an aspect morpheme (as an anonymous review suggests), because it can combine with both perfective stems (e.g. **kè-yom** ‘lying’, **kè-bééyì** ‘standing’) and imperfective stems (e.g. **kè-yommi** ‘long or repeating lying down’, **ké-bébènai** ‘standing a long time’), giving normal compositional meanings (Iwara 1982: 114-116). Rather, the gerund morpheme looks superficially like a member of the category Infl. Like the subject-agreeing Infs, it is a prefix to the verb, and it too undergoes vowel harmony. Example (3) shows the +ATR variant before a +ATR verb root, and example (18) shows the -ATR variant before a -ATR verb root (see Iwara (1982:115) for an extensive paradigm of gerund forms).

(18) Úbì ó-kòòmà è-sàu kè-dei ká è-plà.

Ubi 1AGR-stop 7-fish GER-buy in 7-market

‘Ubi stopped buying fish in the market.’

The gerund head is also in complementary distribution with subject agreement, consistent with the claim that they are competing instantiations of the same syntactic head. Treating

ke- as an Infl is also plausible on comparative grounds, given that the gerund affix –ing in English is standardly analyzed as a head of category Infl/Tense, it being in complementary distribution with normal marking of past, present, or future tense.

Lokaa’s gerund head also has some affinities to the Mood head, however. It is also in complementary distribution with all the usual realizations of Mood; it never co-occurs with future **na**, or subjective **te**, or even with negative low tone. More tellingly, serial verb constructions can appear in gerund form, and when they do the **ke-** prefix appears only once, on the first verb of the series. The second verb must have a normal agreeing prefix, as shown in (19).

(19) Úbi ó-kòòmà bèn kè-dibà ò-yòò ká è-kpal.

Ubi 1AGR-stop children GER-catch 1AGR-put on 7-chair

‘Ubi stopped catching children and putting them on the chair.’

In this respect, **ke-** is like future **na** and negative low tone, and not like the agreeing Infs, which appear twice, on both verbs of an SVC. Overall, then, the best account for **ke-** is that it realizes both Infl and Mood simultaneously. The gerundive mood attracts the Infl+V combination to it, creating [Mood_{Ger}+Infl+V], and Mood_{Ger}+Infl combinations is spelled out as **ke-** or **ke-**, depending on vowel harmony.

One upshot of all this is that negative low tone and gerundive **ke-** are grammatically parallel: both involve combinations of Mood and Infl in which the verb moves at least as far as Infl. This parallelism is a good foundation for giving a unified account of the object-verb order found in both negative and gerund clauses. But we have also seen that there is nothing particularly distinctive about negative and gerundive verbs from the point of view of simple morphology and syntax. The verb in simple affirmative

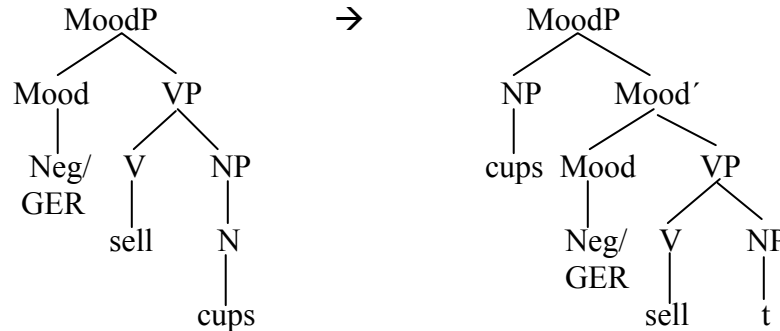
clauses bears a harmonizing prefix that is morphologically parallel to the prefix found in gerund clauses; yet, simple affirmative clauses have V-O order and gerunds have O-V order. Negative verbs are marked by a special tone on the agreement prefix, but so are conditional and relative verbs; nevertheless, negative clauses have O-V word order and conditional clauses have V-O word order. Negative imperative clauses are marked by a separate prefix (**ka**) that does not attach phonologically to the verb, but so are future and subjunctive clauses. Despite the similarity, negative imperatives have O-V order (see (12a)) whereas affirmative futures and subjunctives have V-O order. So the verb movement to Infl and/or Mood found in negative and gerund clauses might play a role in explaining the marked word order of those clauses, but it does not explain that order all by itself, the way it did in Koopman's (1984) analysis of Vata and Gbadi. Something other than simple verb movement triggered by affixation must be at work in Lokaa, and that something is the remnant VP movement, to which I now turn.

4. VP movement vs. NP movement: VP integrity.

For simple transitive sentences, it seems that NP-fronting would be an easier and more natural explanation of O-V order than remnant VP fronting. An NP is all that one sees displaced, after all. There are also well-established triggers for NP-movement: the need to check case and agreement features, for example, and the need to satisfy an "EPP feature" on the target head (Chomsky, 1995). NP fronting is independently established for African languages like Bambara, Gungbe, and Nupe. On this assumption, the derivation of an SOV sentence would be approximately as in (20). (In these diagrams I

suppress the distinction between the Mood node and the Infl node, motivated in the last section, because this distinction would play no role in this type of analysis.)

(20)



Whether or not the verb also moves to join with Mood (and/or Infl) would not be crucial for the derivation of SOV order, on this view.

But the derivation in (20) won't do for Lokaa, for two reasons. First, non-NPs can prepose too, including particles like **ké** (indicating perfect aspect⁷) and **kàá** (a kind of directional?), PP arguments of 'put'-class verbs, and adverbs like 'quickly'.

- (21) a. Úbì káà òó-kpó cf. Úbì nà ó-kpó káà.
 Ubi PRT NEG/1AGR-get.lost Ubi FUT 1AGR-get.lost PRT
 'Ubi will not get lost.' 'Ubi will get lost.'
- b. Kenkong simaa da loose òó-bana. (AI)
 knife this on floor NEG/1AGR-put
 'He didn't put the knife on the floor.'
- c. Bong epalepal òó-jii. (AI)
 thing quickly NEG/1AGR-eat
 'He didn't eat quickly.'

PP adjuncts like ‘in the market’ and adverbs like ‘today’ may optionally come before the negative verb:

- (22) a. Úbi li-póó íyààsí òó-kpéeyi
 Ubi 14-cup today NEG/1AGR-sell
 ‘Ubi didn’t sell cups today.’
- b. Úbi li-póó ká è-pla òó-kpèèyì
 Ubi 14-cup in market NEG/1AGR-sell
 ‘Ubi didn’t sell cups in the market.’

These observations hold for gerunds as well:

- (23) Úbi ó-kòòmà ké è-sàu ká è-plà kè-dèì.
 Ubi 1AGR-stop PRT 7-fish in 7-market GER-buy
 ‘Ubi stopped buying fish in the market.’

This distribution is significant because particles, PPs, and adverbs do not have the same reasons to move that NPs have. These categories clearly would not move to check a case feature. It is less certain theoretically that they couldn’t check an EPP feature, but there is no evidence that non-NPs can do this in Lokaa. Lokaa, for example, does not have a “locative inversion” construction in which a PP satisfies the clause’s need for a subject in lieu of an NP:

- (24) a. Yànèèn ó-mlè ká è-tò.
 Woman 1AGR-come in 7-house
 ‘A woman came into the house.’
- b. *Ká è-tò ó-mlè yànèèn.
 in 7-house 1AGR-come woman

‘Into the house came a woman.’

OV orders in Lokaa are sharply different from OV orders in (for example) Nupe and Abe in this respect; only nominal expressions come before the (im)perfect or nonfinite verb in these languages (Kandybowicz and Baker, 2003) (Aboh, 1998:193-95), unlike in Lokaa.⁸

The second argument that tells in favor of remnant VP fronting rather than NP fronting is the fact that more than one phrase can appear before the verb in the negative or gerund clause. Moreover, when this happens, the order of the phrases is the same as it would be when those same phrases follow the verb. This can already be seen for NP-PP and NP-Adv sequences in the data given above, but the pattern is more general. Similar to English (cf. note 7), weak object pronouns must come before the VP-internal perfective particle **ke**, never after it in Lokaa (Iwara 1982). This order is preserved in negative sentences, giving pronoun-particle-Neg+V order:

- (25) a. Úbì ó-kpèèyì n kẹ́.
Ubi 1AGR-sell me PERF
‘Ubi has sold me (say, as a slave).’
- b. Úbì min kẹ́ òó-kpèèyì.
Ubi me PERF NEG/1AGR-sell
‘Ubi didn’t sell me.’
- c. *Úbì kẹ́ min òó-kpèèyì.
Ubi PERF me NEG/1AGR-sell
‘Ubi didn’t sell me.’

In contrast, full NPs must come after the particle **ke** in Lokaa, never before it (similar to Swedish, but unlike English). This order too is preserved in negative sentences, giving particle-NP-Neg+V order.⁹

- (26) a. Úbi ó-kpèèyì ké li-póó.
 Ubi 1AGR-sell PERF 14-cups
 ‘Ubi sold cups.’
- b. Úbi ké li-póó òó-kpèèyì.
 Ubi PERF 14-cups NEG/1AGR-sell
 ‘Ubi didn’t sell cups.’
- c. *Úbi li-póó ké òó-kpèèyì.
 Ubi 14-cup PERF NEG/1AGR-sell
 ‘Ubi didn’t sell cups.’

In the same way, the goal object comes before the theme object in ditransitive constructions in Lokaa. This order is preserved in negative sentences, even though the order of both objects with respect to the verb changes. A particle can also appear, and it comes before both NPs regardless of the polarity of the clause:

- (27) a. Úbi ó-ka (ké) òbóól kè-tí.
 Ubi 1AGR-give PRT chief.1 5-chair
 ‘Ubi gave the chief a chair.’
- b. Úbi (ké) òbóól kè-tí òó-kaí.
 Ubi PRT chief.1 5-chair NEG/1AGR-give
 ‘Ubi did not give the chief a chair.’
- c. ?*Úbi kè-tí òbóól òó-kaí.

Ubi 5-chair chief NEG/1AGR-give

‘Ubi did not give the chief a chair.’

The same fixed goal-theme-verb order is found in gerunds:

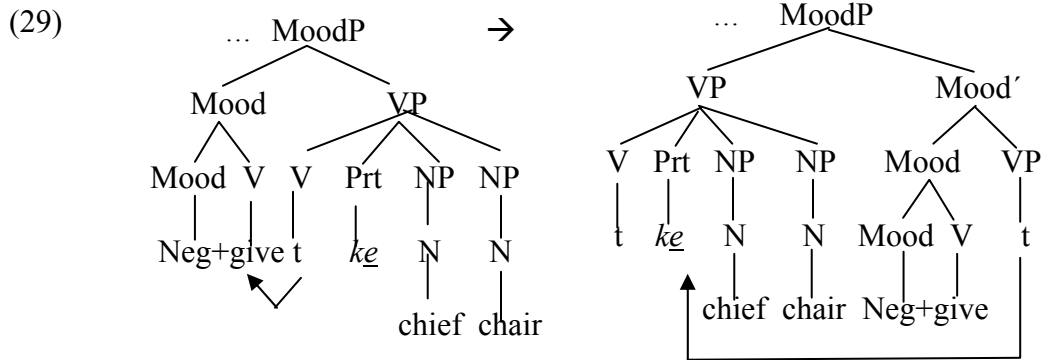
(28) Úbi ó-kòòmà òbóól è-sàu kè-kai

Ubi 1AGR-stop chief.1 7-fish GER-give

‘Ubi stopped giving fish to the chief.’

The robust over-arching generalization is that the relative order of VP-internal phrases is preserved in the negative and gerunds, and more often than not this is the only possible order.¹⁰ Examples like (27b) and (28) provide another clear contrast between OV clauses in Lokaa and OV clauses in Gungbe and Bambara; in Gungbe and Bambara, only a single NP moves before the V in double complement constructions (Aboh, 1998: 195, Koopman, 1992: 558).¹¹

Now suppose that one had a theory in which each VP-internal element moved separately to before the verb in negative and gerund clauses. It would take a massive conspiracy of factors (or a novel theoretical principle¹²) to insure that the elements (nearly) always end up in the same relative order that they start out in, even though the triggers of the movements would have to be different. In contrast, this result follows immediately from the remnant movement analysis. Since the VP moves together as a unit (not counting the verb), it is expected that the internal order and structure of the VP is not affected. A sample structure is given in (29) (here again I suppress the Infl node as distinct from the Mood node, to keep the structure clear and readable).¹³



There is one further complication, which calls for a minor refinement. Whereas pronouns, particles, and NPs must come before the negative or gerund verb, this is merely an option for time adverbs and PP adjuncts. These elements can also come after the negative verb:

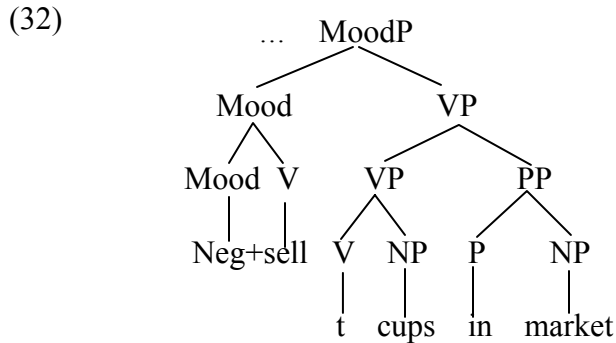
- (30) a. *Úbi li-póó òó-kpèyì íyààsí.* (compare with (22a))
 Ubi 14-cup NEG/1AGR-sell today
 ‘Ubi didn’t sell cups today.’
- b. *Úbi li-póó òó-kpèyì ká èplá.* (compare with (22b))
 Ubi 14-cup NEG/1AGR-sell in market
 ‘Ubi didn’t sell cups in the market.’

(31) shows that this is also true for gerunds.

- (31) *Úbi ó-kòòmà è-sàu kè-dèi ká è-plá.*
 Ubi 1AGR-stop 7-fish GER-buy in 7-market
 ‘Ubi stopped buying fish in the market.’

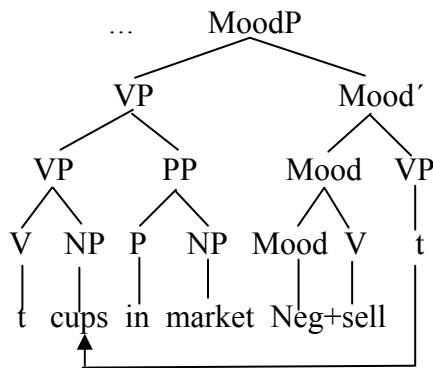
This variation can be analyzed by exploiting a structural ambiguity inherent in the position of adverbial phrases. Such phrases are normally analyzed as being adjoined to the verb phrase. In other words, they combine with a fully-formed VP to create a larger

VP, as sketched in (32) (again IP as distinct from MoodP is suppressed). In a sense, then, these adjuncts are both inside and outside VP. In more technical terms, they are inside one segment of the VP and outside the other (Chomsky, 1986).

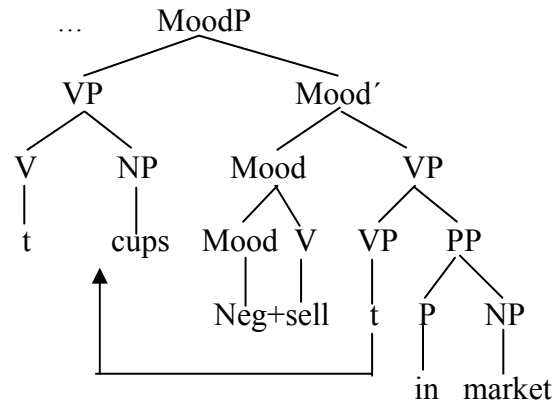


When negation is present, VP must move to Spec, MoodP. But which VP moves? In this particular structure, there are two VP nodes. I claim that either one can move, and that is what underlies the variation we observe. When the larger VP moves, one gets the object-adverb-Neg+V order shown in (22); when the smaller VP moves, one gets the object-Neg+V-adverb order seen in (30). The two possibilities are compared in (33).

(33) a.



b.



This variation thus fits in well with the remnant VP analysis. In contrast, elements that are unambiguously contained in the smallest VP—direct objects, indirect objects, pronouns, and aspectual particles like **ké**—obligatorily come before the negative or gerund verb, as expected. An intermediate case seems to be the PP complements of *put*-class verbs, and manner adverbs like **epaleepal** ‘quickly’. One consultant (AI) only accepts these sentences with the PP or adverb before the negative verb, whereas the other (IE) accepts them after the verb. I suggest that these elements are base-generated inside the core VP, but can extrapose out of it before remnant movement takes place, at least for some speakers.

Extrapolation is an even more robust factor to take into account in the case of clausal complements. These always come after the negative verb in my data. For example, (34) shows that with the verb **woy** ‘want’, which selects a CP complement, there is no word order difference between a positive sentence and a negative one. The only sign of negation is the low tone prefix on the verb:

(34) a. Òbóól ó-wóy bà[̀]nèén t[̀]e yá-dé kò-póó.

Chief.11AGR-want women.2 SUBJ 2AGR-buy 11-cup

‘The chief wants the women to buy the cup.’

b. Òbóól ò-wóy bà[̀]nèén t[̀]e yá-dé kò-póó.

Chief.1 NEG/1AGR-want women.2 SUBJ 2AGR -buy 11-cup

‘The chief doesn’t the women to buy the cup.’

The verb in (35) selects both an NP and a CP argument; in the negative the NP shifts to before the verb, but the CP remains behind it.

(35) a. Òbóól ó-jai bà[̀]nèén bímáà t[̀]e yá-dé yo-soma.

Chief.1 1AGR-tell women.2 those.2SUBJ 2AGR-buy 10-pot

‘The chief told those women to buy pots.’

b. Òbóól bànéén bímáà òó-jai té yá-dé yo-soma.

Chief.1 women.2 those.2 NEG/1AGR-want SUBJ 2AGR-buy 10-pot

‘The chief didn’t tell those women to buy pots.’

As usual, the same word order is found in gerunds:

(36) Úbi ó-kòòmà yànèn kè-yíni ò-bí wé ó-fè.

Ubi 1AGR-stop people.2 GER-tell 1AGR-that he 1AGR-be.sick

‘Ubi stopped telling people that he is sick.’

This is not surprising. It is well-known that clauses have a very strong tendency to extrapose to the right edge of the clause in many languages—either because they are “heavy”, or because they are Case-resistant (Stowell, 1981), or for some other reason.

CPs clearly extrapose to the right in German, for example, which is otherwise head-final in embedded clauses:

(37) a. ...daß Peter ein Buch lesen will. (Webelhuth, 1992: 69, 108)

that Peter a book read will

‘...that Peter will read a book’

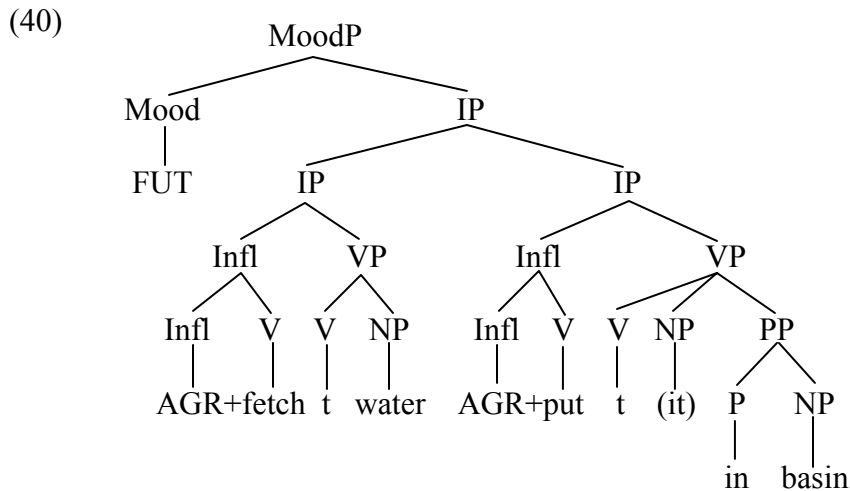
b. ...weil ich geglaubt habe [daß Maria den Jungen liebt]

because I believed have that Maria the boy loves

‘...because I have believed that Maria loves the boy.’

Indeed, examples like (37b) show that the CP doesn’t just shift to the right edge of VP, but rather leaves VP entirely, because the CP comes after the aspectual/modal auxiliaries as well as after the main verb. This seems to be typical: CPs do whatever they must to

but it does not have its own future particle in (39a), we must have one IP adjoined to another IP, the complex IP serving as the complement of a single Mood head, as shown in (40).



Now consider what happens when the Mood head is negative or gerund, as in (41).

(41) a. Úbi lò-wí òò-kóbí ò-gana ká gbángbán. (=16)

Ubi 13-water NEG/1AGR-fetch 1AGR-put in basin

‘Ubi did not fetch water and put it in the basin.’

b. Úbi ó-kòòmà bèn kè-diba ò-yòò ká è-kpal.

Ubi 1AGR-stop children GER-catch 1AGR-put on 7-chair

‘Ubi stopped catching children and putting them on the chair.’

Notice that the NP object of the first verb shifts to before that verb, but the VP headed by the second verb does not; it remains after the verb that bears the mark of clausal negation or gerundive **ke-**. The other order is ungrammatical, as shown in (42a); (42b) is an additional example of the grammatical word order.¹⁵

(42) a. *Úbi lò-wí ò-gana ká gbángbán òò-kóbí.

Ubi 13-water 1AGR-put in basin NEG/1AGR-fetch

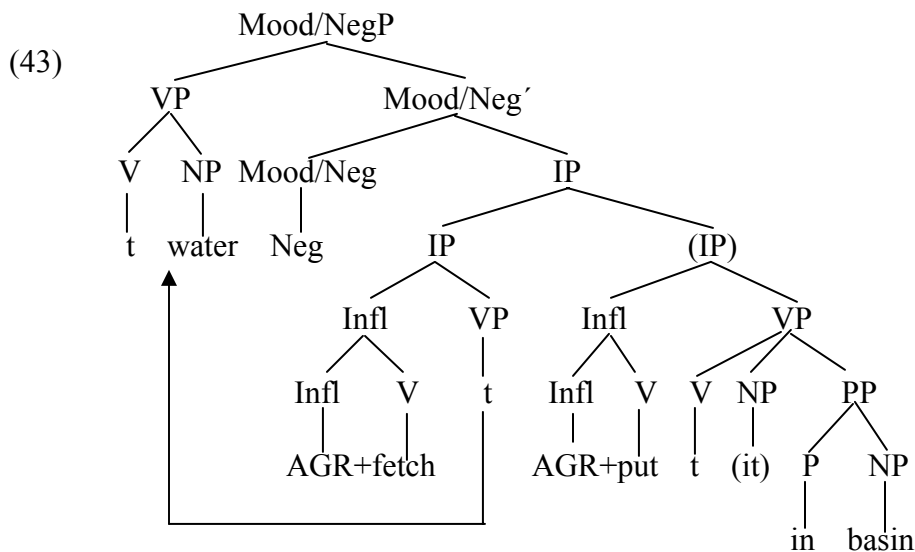
‘Ubi did not fetch water and put it in the basin.’

b. Úbi kèn-kóng òó-dàlì ò-taa ò-palí è-sàu.

Ubi knife NEG/1AGR-take 1AGR-take 1AGR-cut 7-fish

‘Ubi did not take the knife and cut the fish (with it).’

This result is just what we should expect given the structure of the serial verb construction in (40) together with the remnant VP movement analysis of negative and gerund clauses. Serial verb constructions in Lokaa are the result of a second IP adjoining to the primary IP, not the result of a second VP adjoining to the first VP, as shown by the fact that each verb has its own agreement prefix. Since the second verb adjoins to IP and only VP moves to Spec, MoodP in a negative clause, the second verb cannot be carried along the way that a VP-adjoined adverb can be. The structure of (41) would be:



Notice that here the distinction between Mood and Infl is crucial to correctly explaining the observed word order.

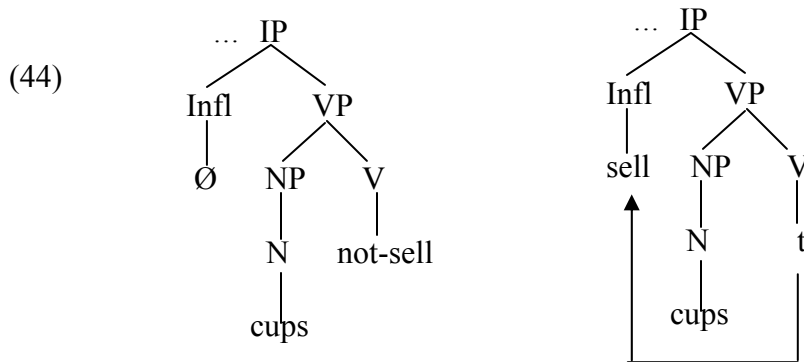
Overall, then, we see that the remnant VP movement theory derives a rather rich array of facts about word order, correctly delimiting what must come before a negative verb (direct objects, indirect objects, object pronouns, particles, argument PPs), what cannot (CPs, serial VPs), and what can go either way (some adverbs, adverbial PPs). This range of facts cannot readily be captured by a theory in which VP-internal phrases move independently, magically landing in the same order that they started out.

One significant question that I have not answered in any insightful way (raised by an anonymous reviewer) is why remnant VP movement happens in negative and gerund clauses in Lokaa, but not in clauses of other kinds. As noted in section 3, this contrast does *not* follow from any obvious difference in morphological structure of negative and gerund verbs as compared to that of positive finite verbs. In my syntactic system, I simply take it to be a primitive lexical property of the negative head /Low tone/, the gerund head /ke/, and the negative imperative /ka/, that they attract a VP to their specifier. In the jargon of Chomsky's Minimalist Program, these particular heads have an EPP/OCC feature that must be satisfied by VP, whereas other instances of Mood do not. From the perspective of formal syntax, there seems to be nothing more to say about this, just as there is nothing much to say about why *wh*-words move to Spec, CP in English but not Japanese, or why verbs move to Infl in French but not in English. These are irreducible formal properties of the languages in question. No doubt there is some sort of historical reason why these two kinds of clauses happened to develop this word order in Lokaa while others did not. And the historical explanation might have a functional component to it, based on pragmatic similarities between negative clauses and gerund clauses (although I have no idea what it would be). But it is not my purpose to provide

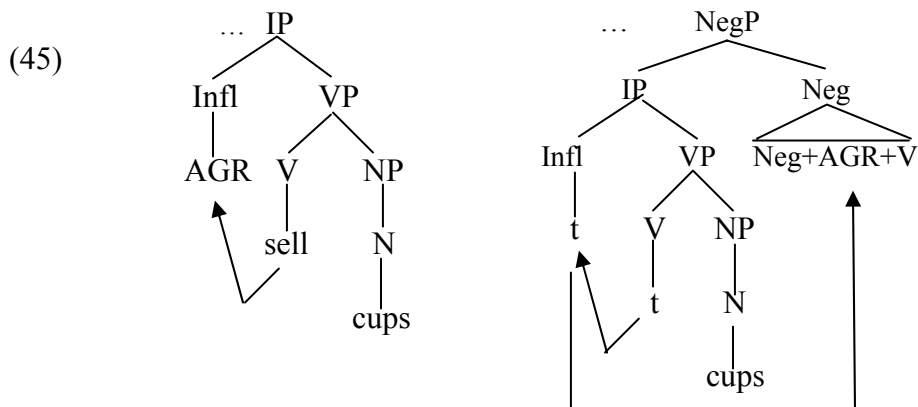
that sort of explanation here; my task is to clarify the mechanics of Lokaa's syntax as it happens to be now.

6. Against simple head movement

The second alternative to my analysis in terms of remnant VP movement is a simple head movement analysis. Koopman's (1984) analysis of Vata said that the verb was base-generated at the end of the VP, and then moved into a head-initial Infl position in some cases. Lokaa could be viewed in these terms too, giving structures something like (44).



The opposite kind of derivation is also a possibility, one in which the VP is head initial, and V moves into a head final functional projection, such as "NegP":



Like the remnant VP movement theory, these theories would capture the fact that the order of everything except the verb is the same in both positive and negative sentences. They also seem simpler than remnant movement, in that remnant movement needs both V movement and VP movement, whereas these alternatives make do only with only V movement.¹⁶

Of the two derivations, (45) seems a priori more plausible. An objection to (44) is that one never finds Subject – Infl/Aux – Object – V word order in Lokaa, the way one does in Vata. One would have to say that all overt Infl-like elements are affixes in Lokaa. Second, the final V in negative and gerund clauses is clearly morphologically complex; it is a marked form containing agreement, tense, and negation morphology. One would have to say that negation, tense, and agreement features were in a null Infl (or series of null Infl-like nodes), and this Infl checks the morphology base generated on V. The technology to do this exists in Chomsky’s Checking Theory (Chomsky, 1995), but it leads to a rather complex and abstract approach, which makes some dubious typological predictions (see Baker (1988) and Baker (2002)).

(45), on the other hand, can say that Infl is head initial. Indeed, Subject – Infl – Verb – Object orders do exist in Lokaa, when Infl is not affixed to verb (see, for example, the future particle in (8a)). One can identify F in (45) as Neg^o, a head-final projection that is present in negative sentences but not affirmative ones. Neg^o is an affix, and therefore it triggers V movement into it, resulting in verb final order. A similar derivation could be given for gerund clauses.

We have already seen some reason not to be enthusiastic about either version of the simple head movement theory in section 3, where I showed that the morphological

structure of negative and gerundive verbs is not different in any significant way from that of finite positive clauses. So there is no clear morphological grounding for saying that some tense/mood/polarity combinations trigger verb movement and others do not. In this section I add stronger evidence from mood particles and auxiliary constructions that goes against both versions of the head movement approach. I also present some additional evidence from negative polarity licensing that is problematic for the more promising version in (45).

5.1 Complex verb clusters

The first and most serious evidence against a simple verb movement analysis is that the “verb” which appears early in the clause in affirmatives and late in the clause in negatives can be a cluster of elements, consisting of more than a single word. One case where this happens is in negative subjunctive clauses. The Mood head in a negative subjunctive clause is **nnà**, as shown in (46).

- (46) òbóól ó-jai bànnèn bímáà yo-somà nnà yà-déi íyààsí.
 chief 1AGR-say women.2 those.2 10-pot SUBJ/NEG 2AGR-buy today
 ‘The chief told the women not to buy pots today.’

Familiar phonological criteria make it clear that this **nnà** is a separate word, not a prefix attached to the verb: it is a full phonological word consisting of two syllables in its own right, and the schwa vowel is never found in prefixes in Lokaa (Alex Iwara, personal communication). So the verb does not move into the Mood head in this example; nevertheless, one still gets the distinctive object-mood particle-verb order.¹⁷ (46) can be contrasted with the positive subjunctive clause in (35a), which also has a separate Mood

particle **te**, but has mood particle-verb-object order. The two examples do not differ with respect to verb movement, but they do differ in word order. The negative imperative example in (12a) can be used to make the same point.

Further evidence on this point comes from auxiliary constructions. Both the auxiliary and the main verb come before complements in affirmatives, and both come after the complements in negatives:

- (47) a. Bànèèn yá-yéní yá-kó lò-wí íyààsí.
 Women.2 2AGR-do.again 2AGR-fetch 13-water today
 ‘The women fetched water again today.’
- b. Bànèèn lò-wí íyààsí yà-yéní yá- kó.
 Women.2 water today NEG/2AGR-do.again 2AGR-fetch
 ‘The women didn’t fetch water again today.’
- (48) a. Yá-dùkà yá-nònà lújí. (Iwara 1982: 235)
 2AGR-do.instead 2AGR-cook food
 ‘They cooked food instead.’
- b. Lújí yàá-dùkà yá- nònà. (Iwara 1982: 236)
 food NEG/2AGR-do.instead 2AGR-cook
 ‘They cooked food instead.’

(49) shows a similar word order in a gerund construction:

- (49) Á-tàà [keblà ke-yeni ke-kou ke-wu] á-yàà máà.
 2sS-take farm GER-do.again GER-go 5-your 2sS-go there

‘You keep bringing up the idea of your going to the farm again!’

Here there can be no doubt that more than one word is involved. Both members of the verbal complex are multisyllabic forms, each with its own own inflectional prefix.

Moreover, the auxiliary and the main verb constitute separate domains for vowel harmony.¹⁸

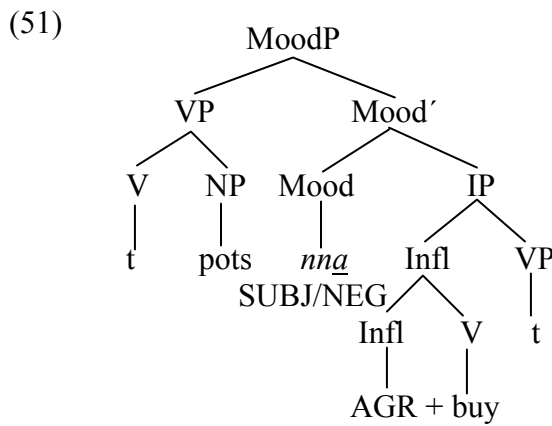
This is relevant to the choice of theories because in most well-studied cases of head movement, whenever there is a distinct tense particle or auxiliary as well as a main verb, only the particle or auxiliary undergoes movement to a higher position. Subject-auxiliary inversion in English is a familiar case in point:

- (50) a. Chris will be sick for three days.
b. Will Chris be sick for three days? (*Will be Chris sick for three days?)
c. Chris has been sick for three days.
d. Has Chris been sick for three days? (*Has been Chris sick for three days?)

This pattern is also what is expected theoretically. But *Lokaa* seems to work differently in this respect. In particular, the fact that *both* the auxiliary and verb alternate between final position and initial position in (47) and (48) is a problem for both the theory in (44) and the one in (45).

The remnant VP movement theory, in contrast, can handle these examples with just a bit of elaboration of the functional structure of the clause. While remnant movement depends on V-movement, it doesn't depend on the V moving all the way to the negation head. More generally, the head position that V moves to need not be the same as the Spec position that the VP moves to in all cases. Having two movements raises the possibility of mismatches in their domains that can account for the examples

given. We saw in section 3 that there are at least two distinct functional heads in Lokaa clauses: a Mood head that contains future **na** or subjunctive **te**, and an Infl head that contains agreement. The verb moves to Infl, but not necessarily to Mood. Negation seems to be in the Mood position. Suppose, then, that the verb moves out of VP to Infl, and then the remnant VP moves to Spec, MoodP. That derivation gives the order in (46) easily without implying that the mood particle and the verb must be a single word:



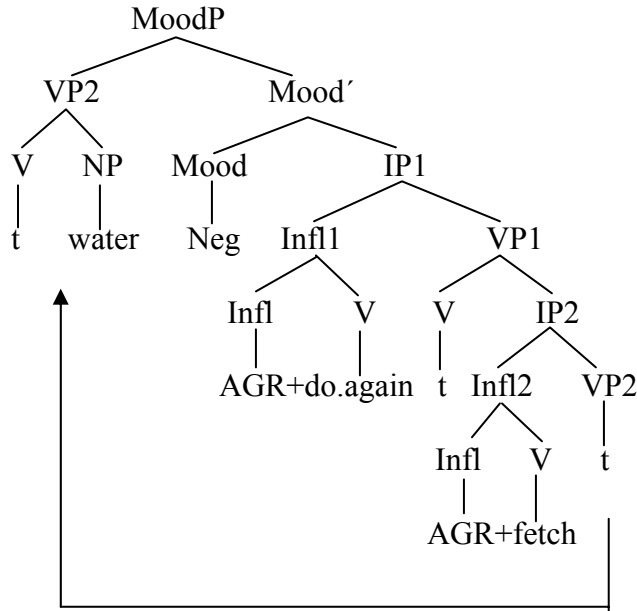
A similar tack works for the slightly more complex case of auxiliary constructions. Here the sequence of heads seems to be Mood-Infl1-Aux.Verb-Infl2-Verb, as shown in (52).

- (52) na n-yéni n-kóó lò-wí.
 FUT 1sS-again 1sS-fetch 13-water
 ‘I will fetch water again.’

Each verb moves to the Infl that immediately dominates it, but the lower verb does not move from its Infl into the higher verb. Either the higher verb (only) moves into Mood, or Mood cliticizes to the higher verb under adjacency. If Mood is negative, then it triggers VP movement into Spec, MoodP, as usual. The one clarification to make is that

it must be the *lower* VP—the one headed by the main verb—not the higher VP that moves. This gives the following structure:

(53)



This is a correct order. There is no need for the auxiliary verb and the main verb to ever count as a single word within this theory.

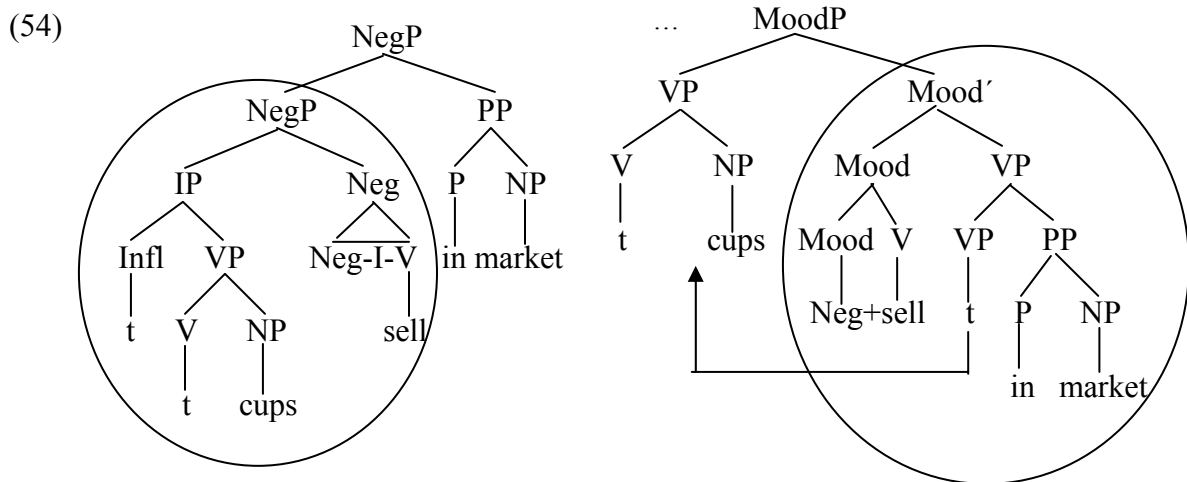
Overall, the relative order of Mood – Infl– Aux – Infl – Verb is the same in both positive and negative sentences, and the relative order of Pronoun – Particle – Indirect Object – Direct Object – PP is unchanged; all that varies is how one block of elements is ordered with respect to the other. The remnant movement analysis captures this elegantly.

5.2 Evidence from the scope of negation

The simple head movement analysis and the remnant VP movement analysis also make different predictions about the status of phrases that appear after the negative verb.

Consider the version of the head movement theory in which the verb moves from a head-

initial VP, through head-initial Infl, into head-final NegP ((45) above). On this theory, any phrase that appears after the negative verb must adjoin very high up in the clause; it must be outside VP, IP, and even Neg'. In particular, it should be outside the scope of negation. In the remnant movement theory, phrases that come after the negative verb could be high in the clause as well. But there is another possibility: they could be phrases that are lower than NegP (MoodP), but higher than the minimal VP. Since they are not in the minimal VP, they are not (necessarily) carried along by VP-movement, but they could still be contained in the complement of MoodP. As such they would be in the scope of negation. This would happen with phrases that are adjoined to VP or are contained in IP. So the more plausible head-movement theory predicts that post-verbal material should be outside the scope of negation, whereas the remnant VP movement theory predicts that it can be inside the scope of negation. This is summarized in the following structures, where the predicted scope of negation is enclosed in a circle:



The remnant movement theory's prediction seems to be the correct one. We already saw in section 4 that serialized VPs after the negative verb fall within the scope of negation. Further evidence comes from negative polarity items. Lokaa has a

quantifier-like element ‘any’ that seems to function as a negative polarity item. It is allowed in negative sentences and yes/no questions, but not in simple affirmatives:

- (55) a. Úbì kò-póó kànákáńá òó-kpèyì.
 Ubi 11-cup 11.any neg/1AGR-sell
 ‘Ubi didn’t sell any cup.’
- b. Úbì ó-kpè kè kò-póó kànákáńá ò?
 Ubi 1AGR-sell PRT 11-cup 11.any Q
 ‘Did Ubi sell any cup?’
- c. *Úbì ó-kpèyì kò-póó kànákáńá.
 Ubi 1AGR-sell 11-cup 11.any
 ‘Ubi sold any cup.’

Now it is often the surface relationship between the negative polarity item and the negation that matters. For example, **any**-phrases in English are possible only if they are lower than the negation on the surface, after NP movement and Subject-Auxiliary Inversion have applied, as shown in (56).

- (56) a. There aren’t any unicorns in the garden.
 b. *Any unicorns aren’t in the garden.
 c. Why won’t anyone answer the phone?
 d. *Why will anyone not answer the phone?

Now consider a locative PP in *Lokaa*, which can appear before or after the negative verb, as discussed in section 4. Suppose such a PP contains a negative polarity item. Both theories predict that the PP should be possible before the negative verb, but only the remnant movement theory predicts that it would also be allowed after the verb.

On the head movement theory, this would be an instance of a PP extraposing to a position outside the scope of negation, which should lead to ungrammaticality. In fact, a negative polarity PP is fine after the negative verb as well as before the verb.¹⁹

- (57) a. Úbi yò-sòwà ká lè-plámà janjanaya òò-déi.
 Ubi 10.pots in 3-stall any NEG/1AGR-buy
 ‘Ubi didn’t buy pots at any stall (in the market).’
- b. Úbi yò-sòwà òò-déi ká lè-plámà janjanaya.
 Ubi 10.pots NEG/1AGR-buy in 3-stall any
 ‘Ubi didn’t buy pots at any stall (in the market).’

This evidence thus converges with the evidence from SVCs to support a distinctive prediction of the remnant movement approach.

6. Implications for the Position of the Subject

The analysis I have proposed has important implications for the position of the subject in Lokaa—implications which I believe are correct. In Chomskian theory, the subject is usually taken to be in Spec, IP, or whatever is the highest specifier position in the clause. That is why the subject is the first thing in the matrix clause: Specs are on the left, and there is no higher Spec or head. But there is an interaction between this baseline view about subjects and the claim that VP moves to Spec, MoodP in Lokaa. Assuming that specifier positions are unique, the subject cannot be in Spec, MoodP as well. The subject could conceivably be in Spec, IP; that position is available in principle, in as much as I have not made use of it in explaining word order patterns. But this logical possibility would not give the correct word order in negative sentences. IP is lower than MoodP in

Lokaa. So remnant movement should put the VP in a higher position than the base position of the subject, creating Particle – Object – X – Subject – Neg+V order. This order is not attested:²⁰

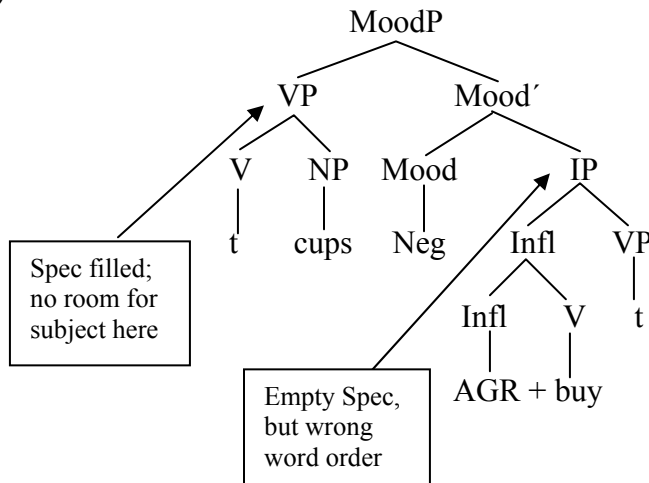
(58) *Bonbong Úbì òò-déì.

nothing Ubi NEG/1AGR-buy

‘Ubi bought nothing.’ (OK: Úbì bonbong òò-déì)

So there is no obvious Spec position that is suitable for overt subjects in Lokaa, as summarized in (59).

(59)



The subject could conceivably be in the specifier of some functional category higher than mood, but there is no independent evidence for such a functional category. There is no tense/mood/aspect particle that comes between the subject and the fronted VP, for example, at least in matrix clauses.²¹

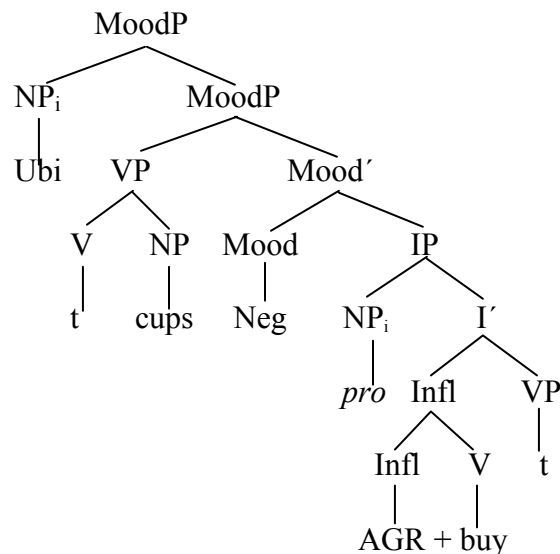
The solution to this difficulty is to say that the overt subject in Lokaa never occupies a specifier position; rather it is a dislocated NP adjoined to the clause as a

whole. This dislocation is a side effect of rich agreement. Lokaa is a pro-drop language, in which a subject can be omitted if the reference is clear from context:

- (60) (Yò-nòòn bimáà) yò-kpò káà.
 10-birds 10.those 10-get.lost PRT
 ‘They (those birds) got lost.’

In such sentences, one can say that the pro subject is in Spec of IP, where it is licensed by the agreement-bearing Infl. Since pro is phonologically null, this does no harm in terms of word order. Suppose, then, that we say that this is always true; when the subject is overt, it is a dislocated element adjoined to the clause. This is a common analysis of agreed-with subjects in Bantu (see, for example, Kinyalolo (1991) on Kilega, Demuth and Johnson (1989) on Setswana, Letsholo (2002) on Ikalanga, and Baker (2003) on Kinande, among others). This means that the full structure of a typical negative example is approximately that shown in (61).

(61)



An implication of this is that the position of the subject is not rigidly fixed by X-bar theory in Lokaa. It has to c-command the pro in Spec, IP, but otherwise there might be a certain amount of freedom as to exactly where it adjoins in the clause. This seems to be true. Unlike in English, the Lokaa subject can naturally come before or after ‘today’-type adverbs, which left-adjoin to the clause:

- (62) a. Úbì íyààsí ó-kpèèyì lì-póó
 Ubi today 1AGR-sell 11-cup
 ‘Ubi today sold cups.’ (?? In English)
- b. íyààsí Úbì ó-kpèèyì lì-póó
 today Ubi 1AGR-sell 11-cup
 ‘Today Ubi sold cups.’ (OK in English)

Alexiadou and Anagnostopoulou (1998) take this kind of freedom of word order as showing that preverbal subjects are in adjoined positions, not specifier positions, in Greek. The Lokaa subject can also come before or after fronted *wh*-phrases:

- (63) a. Ó-dà nnèé óóbòl ó-wòy té ó-déé kò-póó
 1AGR-be who chief 1AGR-want SUBJ 1AGR-buy 11-cup
 ‘Who does the chief want to buy the cup?’
- b. Òbóól ó-dà nnèé ó-wòyì té ó-déé kò-póó
 Chief 1AGR-be who 1AGR-want SUBJ 1AGR-buy cup
 ‘Who does the chief want to buy the cup?’

(63b) could be an instance of adjunction to CP instead of adjunction to IP/MoodP.²²

Of course there are languages in which subjects are dislocated even though they don’t compete with remnant VPs for Spec positions—such as Bantu languages. So there

is no necessary connection between the dislocation theory of subjects and the remnant VP movement theory of OV-VO word order alternations. But the two analysis do work together smoothly to give the word orders one observes in Lokaa.

7. Conclusion

In this article I have tried to give a comprehensive description of how word order in negative clauses and gerunds differs from the word order seen in simple affirmative clauses in Lokaa. The differences go far beyond the obvious fact that direct objects are positioned differently in the different kinds of clauses. Particles, pronouns, and “second objects” also come before the negative or gerundive verb, and adverbs and PPs may come before it. In contrast, clausal complements, serialized verb constructions, and some adverbs and PPs come after the negative or gerundive verb, just as they come after the affirmative verb. Moreover, the structure of the “verbal cluster”, which includes preverbal mood particles, agreement prefixes, and auxiliary verbs as well as the main verb, is the same in affirmative clauses and negative clauses. These details of word order show that Lokaa is different in significant respects from some other African languages that have superficially similar alternations between V-O and O-V word order. Indeed, the details show that a very particular type of syntactic derivation is at work here, namely remnant movement. More specifically, the verb moves out of the verb phrase to combine with the lowest inflectional element, and then the verb phrase minus the moved verb moves into the specifier position of the highest inflectional head (with or without modifiers that are adjoined to the verb phrase). This syntactic derivation accounts precisely for the fact that VP-internal elements preserve their relative order in negative

and gerundive clauses, and the verbal complex preserves its relative order, but the overall orders of these two blocks of elements does change. A methodological moral is that word order alternations like these must be described in considerable before it becomes apparent which theoretical tools are suitable for them, and the desire to distinguish between competing theories can be a useful goad to press one toward a fuller and richer description than one might otherwise be content with.

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Notes:

¹ This article grew out of a field methods class that I taught at Rutgers University in collaboration with Akin Akinlabi in Spring 2003. The consultant for this class was Ijaja Eno. I subsequently had a chance to go over all of the material with Alex Iwara, when he spent a month at Rutgers in connection with attending WOCAL 4. I thank Alex Iwara, Ijaja Eno, Akin Akinlabi, and the students of the field methods class for their invaluable input, which took many and varied forms. I also thank Larry Hyman for alerting me to the special interest of Cross River languages, and to him and Jeff Good for stimulating correspondence comparing the Lokaa facts with their material on closely related Leggbo (which is similar in many ways, but also shows some maddening differences). I also thank an anonymous reviewer for motivating me to make many corrections and clarifications. All errors of fact and interpretation remain my responsibility, however.

The Lokaa examples are presented in the practical orthography recommended by Alex Iwara. Most symbols have approximately the value one would expect; e and o are – ATR mid vowels, a stands for schwa, the digraph ng is a velar nasal, and the digraph kp represents a coarticulated stop.

Lokaa has a Bantu-like system of noun classes; these are glossed with numbers taken from Iwara 1982 (human names are always class 1). Abbreviations used in the glosses include: XAGR, agreement (on a verb) with noun class *X*; DEM, demonstrative; FUT, future (irrealis); GER, gerund; IMP, imperative; NEG, negative; PERF, perfect particle; PRT, (directional) particle; REL, relator (genitive or relative particle); SUBJ, subjunctive particle.

²Another logical possibility would be to base-generate an [Infl [object verb]] structure and move the object rightward to create [Infl [-- verb] object] if and only if Infl is positive polarity and finite. This would be the opposite of the (4c) derivation. However, this derivation is not very plausible, because NP movement lands in specifier positions, and specifiers nearly always come before the associated head (here Infl). This generalization holds in both head-initial languages like English and head-final languages like Japanese. To my knowledge, no such derivation has been proposed for an African language. Nor is it very promising empirically, once one considers examples with more than one element in the VP (see below). I thus do not explicitly discuss it any further here.

³Remnant movement derivations have also been used in non-African languages, notably German. Derivations of this kind are particularly popular among linguists working within the program initiated by Kayne (1995), which assumes that all languages are underlyingly SVO. My analysis is consistent with this program but does not depend on this order being underlying in all languages.

⁴ A prominent apparent exception to head-initiality in Lokaa is that the demonstrative **máà** comes after the noun it is associated with. This demonstrative element can either appear bare (as in (5a)) or as an inflected form that agrees with the head noun in noun class (e.g., **ba-neen b-imaa** ‘2-woman 2-those’). I tentatively assume that demonstratives in Lokaa have the syntactic status of adjectives adjoined to NP, not true Determiner heads. An alternative, posited for other African languages, would be to say that **máà** is a head-initial determiner, but it triggers the raising of its NP complement into

its Spec; see Aboh 1998 and Nkemji 1995 for such derivations in Gungbe and Nweh, respectively.

⁵ A standard argument for V to Infl movement in French (as opposed to English) comes from the existence of verb-adverb-object word orders in French, as contrasted with the adverb-verb-object word order that is characteristic of English (Pollock 1989).

- (i) a. Jean embrasse souvent Marie.
b. *John kisses often Marie.

Verb-adverb-object order in Lokaa is impossible:

- (ii) ?*Úbì ó-kpèyì epaleepal lì-póó
Ubi 1AGR-sell quickly 11-cup
'Ubi quickly sold cups.'

This might look like a problem for my claim that verb movement takes place in Lokaa.

But in fact adverb-verb-object order is not found in Lokaa either; the adverb can only appear after the object:

- (iii) a. ?*Úbì epaleepal ó-kpèyì lì-póó
Ubi quickly 1AGR-sell 11-cup
'Ubi quickly sold cups.'
b. Úbì ó-kpèyì lì-póó epaleepal.
Ubi 1AGR-sell 11-cup quickly
'Ubi sold cups quickly.'

Taken together, (ii) and (iii) show that this kind of adverb simply cannot left-adjoin to VP in Lokaa, but only adjoins to the right. Adverbs in Lokaa are thus not in the right

structural position to reveal whether verb movement takes place or not. We are left with only the evidence from vowel harmony—plus the indirect evidence from the existence of remnant movement, if that proves to be the most successful theory of O-V order.

⁶ An alternative view would be to say that Negation is generated as a separate head from Mood, and Negation and Mood fuse into a single item in the syntax or at PF. I leave this open, adopting the simpler view that they constitute a single head from the beginning for ease of exposition.

⁷ This perfect particle **ke** is the one major player in the tense-aspect-mood system of Lokaa that was not discussed in section 3 (see Iwara 1982). I assume that it is analyzed in the same way as the completive particle *up* in English sentences like *Chris ate up the cake* and *Chris ate it up*, but I make no concrete proposal about the details.

⁸ Locative postpositional phrases also front to before the verb in both Nupe and Gungbe, as does a special class of reduplicated adverbs in Gungbe. There is, however, language internal evidence that these expressions are also intrinsically nominal, even though they do not correspond to NPs in English.

⁹ The perfect particle **ké** appears not to be possible in gerunds. I assume that this is the result of some kind of semantic incompatibility.

¹⁰ Occasionally a bit more freedom of word order seems to be tolerated in the negative sentence than in the affirmative one. In particular, PP-NP-Neg+V order is sometimes accepted in my data—with apparent implications for what constituent is in focus that remain unclear—whereas V-PP-NP (or PP-V-NP) order never is. An example is in (i).

(i) Úbi ká è-plá li-póó òó-kpèèyì.

Ubi in market 14-cup NEG.1-sell

‘Ubi stopped selling cups IN THE MARKET.’ (contrastive focus)

This marked word order seems to be less available in gerunds, so (ii) contrasts with (i).

(ii) # Úbì ó-kòòmà ká èplá è-sàu kè-déi.

Ubi 1AGR-stop in market 7-fish GER-buy

‘Ubi stopped buying fish in the market.’

This supports the idea that the marked order in (i) has something to do with focus, which interacts scopally with negation but has no special relevance to gerunds. I put this aside as a secondary effect which concerns the possible adjunction sites for PPs.

Given the existence of (i), an anonymous reviewer asks if focus movement (or scrambling) can be the cause of X-V orders in Lokaa more generally, rather than remnant VP order. I believe the answer is no, for several reasons. First, X-V order in negative clauses is required and semantically neutral, whereas focus movement or scrambling is usually syntactically optional, taking place if and only if the moved expression receives a distinct focus interpretation. Second, it seems very odd to say that an element like the perfective particle *kè* undergoes focus movement or scrambling, since it has little lexical meaning and does not contrast with any other overt item. Third, focus movement might not be able to apply to more than one constituent, and even if it could there would be no guarantee that the order of the constituents after focus movement would be the same as the order of constituents before focus movement.

¹¹This data also bears on a question, raised by an anonymous reviewer, of whether the O-V order in gerunds in Lokaa could be a similar phenomenon in some respects to the O-V order found in English synthetic compounds like **car-buying**. English synthetic compounds allow at most one element before the nominalized verb (***dog-bone-giving**,

***book-in-box-putting**), a restriction that does not hold in Lokaa. The phenomenon is clearly syntactic in Lokaa, whereas it is apparently morphological in English. Thus, if there is a connection, it must be a very indirect one at best. (In fact, Lokaa also has the equivalent of synthetic compounding in English, in which the noun is a bare root, without its noun class prefix, and it combines with the verb root before the prefix **ke-** is added. Thus, Lokaa allows both the synthetic compound **ke-sa-dei** ‘fish-eating’ and the gerund **e-sau ke-dei** ‘eating fish’, and the two are clearly distinct.)

¹² See Fox and Pesetsky (to appear) for an attractive recent proposal about the syntax-phonology interface which guarantees that complex combinations of movements need to preserve the original word order of the moved constituents. Comparing their approach to the remnant movement approach goes beyond the scope of this article.

¹³ The internal structure of the VP here could be—probably is—significantly more complex than this, to account for the fact that the particle comes after pronouns but before full NPs, and to account for the relationships between the two objects of a double object construction (Kayne 1984, Larson 1988, and much subsequent work). But that is a constant factor that we can abstract away from for purposes of this article.

¹⁴ An anonymous reviewer asks what happens when a verb like **okooma** ‘stop’, which selects a gerund, is negated. My consultants accept several possibilities, as shown in (i).

- (i) a. Ubi è-sàu kè-jî òó-kòmà.
 Ubi 7-fish GER-eat NEG/1AGR-stop
 ‘Ubi did not stop eating fish.’
- b. (??)Ubi òó-kòmà è-sàu kè-jî.
 Ubi NEG/1AGR-stop 7-fish GER-eat

‘Ubi did not stop eating fish.’

c. Ubi è-sàu òó-kòmà kè-jíí.

Ubi 7-fish NEG/1AGR-stop GER-eat

‘Ubi did not stop eating fish.’

The grammaticality of (ia) shows that the gerund need not extrapose out of VP prior to remnant movement; it is more like an NP than like a tensed clause in this respect. (ib) was accepted by Ijaja Eno but not Alex Iwara; this shows that extraposition of a gerund out of VP is (only) a marginal possibility. The more surprising order in (ic) shows that **okooma** ‘stop’ can undergo a form of restructuring with its gerund verb complement. When this happens, ‘stop+eat’ behaves like a single transitive verb, with ‘fish’ acting as its object. (ic) presumably has a syntactic structure very much like the one shown for auxiliary plus main verb constructions in (53).

¹⁵ An order in which the objects of both verbs are fronted would not be used by Ijaja Eno, but she does not consider it inconceivable:

(i) ??Úbì kènkóng è-sàu ò-taa ò-palí.

Ubi knife fish 1-take 1-cut

‘Ubi did not take the knife and cut the fish (with it).’

Structures like (i) are apparently possible (although not preferred) in closely related Leggbo, according to Larry Hyman and Jeff Good. I will not speculate on the nature of (i) to the extent that it is acceptable.

¹⁶ Note, however, that the simple head movement theories work only at the cost of denying that there is a uniform direction of head-complement in Lokaa. This is a nontrivial complication of the theory of phrase structure.

¹⁷(41) also shows that there is no asymmetry between matrix clauses and embedded clauses when it comes to word order in Lokaa. Lokaa is different in this respect from German and Dutch, which show OV order in embedded clauses and VO order in main clauses. This shows that the C node is not crucially involved in the word order alternation in Lokaa the way it is (thought to be) in the West Germanic languages.

¹⁸ Ijaja Eno even marginally allows examples in which the auxiliary is separated from the main verb by an adverb. This emphasizes that these are two distinct words in the syntax.

- (i) a. (*)Bànèèn yá-yéní íyààsí yá-kó lò-wí.
 Women 2AGR-do.again today 2AGR-fetch 13-water
 ‘The women fetched water again today.
- b. (*)Bànèèn lò-wí yà-yéní íyààsí yá-kó.
 Women 13-water neg/2AGR-do.again today 2AGR-fetch
 ‘The women didn’t fetch water again today.

This is not a preferred order for Ijaja Eno, however, and Alex Iwara rejected these sentences.

¹⁹ Ijaja Eno used the word **jànájàná** for ‘any’ in these examples, instead of the form **janjanaya** used by Alex Iwara, but otherwise their judgments were in agreement.

²⁰A nonreferential object is used here to make sure the object is not left-dislocated.

Apparent OSV order occurs in Lokaa, but only as a result of left dislocation of the object, which leaves a (possibly null) pronominal in VP:

- (i) Bànèén, òòból Ágbálángbá ó-béé bé ká n-kàtà. (Iwara 1982: 270)
 women chief A. 1-marry them in 8-baskets.
 ‘As for women, chief Agbalangba married them in baskets.’

Non-referential objects cannot participate in this kind of left dislocation.

²¹ There is an exception: there is an agreeing element in negative conditional and relative clauses that does come between the subject and the fronted VP. I assume this is a special C-like element that is found in these embedded clauses, but that is not part of the functional architecture of a simple matrix clause.

(i) Bànèén bimaá yàá-bí lò-wí yàà-kóbí àmí nà n-kói.
women those 2-if 13-water neg/2AGR-fetch then FUT 1sS-fetch.
'If the women do not fetch water, I will fetch it.'

(ii) Úbì ó-blái bànèén bí-máà yá-bìbí kò-póó ki-máà yàà-déi.
Ubi 1AGR-ask women 2-those 2-if 11-cup 11-that neg/2AGR-buy
'Ubi asked if the women didn't buy the cup.'

²² The agreement properties of some complementizers restrict the possibilities of where the subject can adjoin. **-bi** 'if' agrees with the downstairs subject, which must come before it (see note 22); **-bi** 'that' agrees with the matrix subject, so the downstairs subject cannot come before it (see (36)). The exact nature of agreement on complementizer-like elements in Lokaa is a topic for a separate study.