

Word Order Patterns in Defaka

¹Wm. G. Bennett, ¹Akinbiyi Akinlabi, ²Bruce Connell, and ³Inoma Essien

¹Rutgers University, ²York University, and ³University of Port Harcourt

1. Introduction

The goal of this paper is to describe the basic facts & generalizations about word order, and offer some observations about how this combination of patterns may arise in the syntax. Defaka exhibits an unusual constellation of word-order patterns, including characteristics typical of both head-initial and head-final languages. This mix of headedness traits can be seen in example (1) below:

- (1) à èbèrè kò à òkùnà fáá-mà
the dog FOC the fowl kill-NFUT
'The dog killed the fowl'

The basic order is Subject-Object-Verb; SOV order is a typical characteristic of head-final phrase structure. But, in the two determiner phrases, the article à precedes the noun: D°, the head of DP, precedes its complement. This is typical of head-initial phrase structure, and is not consistent with the head-final structure indicated by the SOV word order.

1.1. Background about the language

Defaka is an Ijoid language (Jenewari 1983; Connell et al. 2010, forthcoming), spoken in a single village in the Niger Delta region of southern Nigeria. The language is highly endangered: there are estimated to be approximately 50 fluent speakers, but none use Defaka as their primary language, and inter-generational transmission is reported in only one household. Data presented here was collected as part of a project to document Defaka and a related language, Nkọrọọ, the primary language used in the village.

1.2. Background from the theory

Relationships between word order in different types of phrases have long been observed (see Greenberg 1966, Dryer 1992, among others). A traditional analysis of such phenomena is the Head Directionality Parameter: languages choose either (2) or (3) as the basic structure of phrases.

- (2) [Specifier [Head Complement]]_{XP} (heads precede complements)
(3) [Specifier [Complement Head]]_{XP} (complements precede heads)

The difference between these choices is whether the head of a phrase and its complement are in a right-branching structure, or a left-branching one. This choice suggests a relatively restricted typology, as in (4), consisting of only three types of languages.

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- (4) Predicted typology of word order patterns:
- Strictly head-initial: all heads precede their complements
 - Strictly head-final: all heads follow their complements
 - Split-headedness: some mixture of head-initial & head-final phrase structures

The pattern in (4a) corresponds to the head-initial parameter setting (2), while (4b) corresponds to the head-final setting (3). These two polar opposites invite the possibility of a third possible pattern (4c): a language that in some way mixes together both head-initial *and* head-final phrases

The puzzle we want to address is where on this spectrum Defaka falls. If Defaka is a head-initial language, then why does it sometimes appear head-final; why does it have a basic clause order of SOV instead of SVO? Alternatively, if the language is fundamentally head-final, why does it exhibit some apparently head-initial orders; e.g. why don't determiners follow their complement nouns? Finally, if the language is truly a split-headed language, is the type of split describable in some principled way?

2. The head-final characteristics of Defaka

Defaka exhibits word order characteristic of head-finality in several different types of phrases, including VPs, TPs, and PPs.

2.1. Head-finality in VP

In the VP, the verb (V^o) obligatorily follows its complements. Thus, object DPs appear before the verb, as in (5) & (6).

- (5) ì **jíkà** àngà-kà [... > V^o]_{VP}
 I house build-FUT
 'I will build a house'
- (6) ì **?ómgbìnyà** sònò-rè-kòm
 I dress buy-NEG-NEG.PERF
 'I have not bought a dress'

This pre-nominal position is not particular to nominal complements. Verbs with VP complements show the same order: the complement VP precedes the main V^o. This is illustrated in (7).

- (7) Tónyè [ɲmgbòd nám]_{VP} kára-rè [... > V^o]_{VP}
 Tonye fishing.net mend want-NEG
 'Tonye does not want to mend the fishing net'

2.2. Head-finality in PP

Adpositions in Defaka appear after nominals; in other words, the language has postpositions, rather than prepositions. This is illustrated in (8): the adposition *tè* appears at the end of the phrase *ándù kikià tè*, 'under the canoe'.

- (8) à èbèrè rì bòi-mà [ándù kikià **tè**]_{PP} [... > P^o]_{PP}
 the dog RE hide-NFUT canoe under P
 'The dog is hiding under the canoe'

2.3. Head-finality in TP

Defaka has a set of post-verbal enclitics that carry information such as tense, aspect, and mood. These are consistently after the verb.

- (8) Bòmá Gògó píní-**kà** [... > T°]_{TP}
 Boma Gogo flog-FUT
 ‘Boma will flog Gogo’
- (9) ànyà òdò’fí òóm rè ìdò-**à** [... > Asp°]_{AspP}
 this small child RE big-PERF
 ‘This small child has become big’
- (10) ì ìbì-**rè** [... > Neg°]
 I sleep-NEG
 ‘I am not sleeping’

Since TP is higher than VP, the post-verbal position of these clitics is consistent with a head-final structure – the head T° (or Asp°, etc.) follows its complement.

- (11) ì síá-kà í ‘ré ísò-**à-nè** [V > TAM₁ > TAM₂]
 I go.from-FUT you RE come-PERF-COND
 ‘I will go after you have come’
- (12) Bòmá árí-**nì-à**
 Boma catch-PASS-PERF
 ‘Boma has been caught’
- (13) Bòmá árí-**kà-rè-wèè**
 Boma catch-FUT-NEG-PASS.NEG
 ‘Boma will not be caught’

This ‘stacking’ pattern in the TAM clitics is expected from a stack of functional projections, each with the head on the right, in a structure such as that in (14).

- (14) [[[[... V°]_{VP} -T°]_{TP} -Asp°]_{AspP} -Mod°]_{ModP}

Defaka has some additional syntactic features typical of head-final languages, not head-initial ones (Greenberg 1966, Kayne 1994, Carstens 2002, Zwart 2005): coordination displays a bisyndetic ‘X-and-Y-and’ structure. There is also no obligatory wh-movement (though wh-phrases usually undergo focus movement).

From the data presented above, Defaka appears to be head-final. Overt head-final structure is apparent in a variety of phrasal categories, including TP, VP, and PP. Additionally, the language has other syntactic characteristics that are associated with head-finality in less obvious ways.

3. Evidence for head-initial structure

While PP, TP & VP all suggest Defaka is a head-final language, several other types of phrases actually show the opposite order: they appear head-initial.

3.1. DP is head-initial

Defaka has a definite article, à; we analyze this as the head D°. The definite article always precedes the noun (15), as well as any nominal modifiers (16). This shows that within DP, the head D° precedes its complement NP – a head-initial pattern.

(15) à ngì [D° < NP]_{DP}
 the axe
 ‘The axe’

(16) à mà mà gò gò rì ngì
 the two red axe
 ‘The two red axes’

Demonstratives are also strictly pre-nominal, as illustrated in (17).

(17) ànyà / nùmà / ówàrà ngì [Dem < NP]_{DP}
 this / that / these axe
 ‘This axe’ / ‘That axe’ / ‘These axes’

3.2. CP is head-initial

Overt complementizers in Defaka appear at the beginning of an embedded clause, not at the end.

(18) Àmànyà fàà-mà nà ì rè ísò-mà [C° < clause...]_{CP}
 Amanya say-NFUT that I RE come-NFUT
 ‘Amaya said that I am coming’

(19) Bòmá árí-nì-nè sùmà ìní á átákí ítà
 Boma catch-PASS-COND then they her money take
 ‘If Boma is caught, then they (will) take her money’

This indicates that the head C° precedes its complement clause: also a head-initial ordering.

3.3. FocusP is head-initial

Focused phrases in Defaka move to a special focus position at the left periphery of the clause (Bennett et al. to appear). This movement is associated with two specialized focus-marking particles, **ko** & **ndo**.¹ The basic focus movement paradigm is illustrated in (20)-(22).

(20) ì Bòmá ésé-kà-rè
 I Boma see-FUT-NEG
 ‘I will not see Boma’ (discourse-neutral)

(21) [ì **kò**] Bòmá ésé-kà-rè [Foc° < clause]_{FocP}
 I **Foc** Boma see-FUT-NEG
 ‘I will not see Boma’ (focused subject)

(22) [Bòmá; **ndò**] ì ésé-kà-rè-kè
 Boma **Foc** I see-FUT-NEG-KE
 ‘I will not see Boma’ (focused object)

We analyze the focus position as the specifier of a focus projection, FocP, located in the left periphery of the clause (Brody 1990, Rizzi 1997, Aboh 2004). The focus particles **ko** & **ndo** are heads of this projection (Foc°). Crucially, these focus heads appear before the rest of the clause, not after it; this indicates head-initial ordering in FocP.

¹ The choice between *ko* and *ndo* depends on whether the focused phrase is a subject; this alternation is not relevant for the issue of headedness. See Bennett et al. (to appear) for discussion.

3.4. Auxiliaries

Defaka has two auxiliaries, **re** & **sɔ**; combining these with post-verbal clitics yields different tense/aspect interpretations. These auxiliaries appear following the subject of a clause.

(23) Bòmá **ʼrɛ** Gògó píní-mà
Boma **RE** Gogo flog-NFUT
'Boma is flogging Gogo' (progressive)

(24) Bòmá **ʼrɛ** Gògó píní-à
Boma **RE** Gogo flog-PERF
'Boma has flogged Gogo' (perfect)

(25) Bòmá **sɔ** Gògó píní-mà
Boma **SO** Gogo flog-NFUT
'Boma will flog Gogo' (future)

If these auxiliaries are in some functional head higher than VP, this order is consistent with a head-initial structure as in (26), but is not compatible with a head-final one like that in (27).

(26) [**Aux**^o [DP V^o]_{VP}]_{FP} (head-initial; observed order of Aux & VP)

(27) *[[DP V^o]_{VP} **Aux**^o]_{FP} (head-final; incorrect order for Defaka)

3.5. Head-initial structure is necessary

The data presented above shows that several types of phrases in Defaka exhibit clear head-initial order, including: DP, CP, FocP, and some additional functional projection 'AuxP' (where the auxiliaries **re** & **sɔ** reside). Positing a consistently head-final phrase structure (e.g. on the basis of the generalizations in section 2) does not explain the surface word order in these phrases. As such, we must conclude that Defaka is *not* a strictly head-final language.

5. Split-headedness and numerals & quantifiers

If Defaka is not a head-final language, then what other possibilities remain? The co-existence of both head-initial and head-final surface orders points to a potential split-headedness analysis, in which phrases don't all have the same directionality: some categories are head-initial, while others are head-final.

Split-headedness languages normally make the split in a principled way. For instance, the split may fall between lexical & functional categories; lexical heads may appear on one side of their complements, while functional heads appear on the other side. This is the type of split-headedness found in languages such as Persian (Dehdari 2007), Pashto (Roberts 2000), and American Sign Language (Sandler & Lillo-Martin 2006). Another type of split-headedness makes the split based on different sections of the clausal 'spine', a pattern found in various Germanic languages (Biberauer, Holmberg & Roberts 2008).

The behavior of numerals and quantifiers shows that Defaka does *not* make a principled split of this kind. Numerals and quantifiers display a mixed ordering pattern: some have head-final order, but others appear head-initial.

Defaka numerals 1 through 19 precede the noun:

(25) à **túnɔ** tìnà [Num > N]
the five fish

‘The five fish’

- (25) **máámá** ɲgì
two axe
‘Two axes’
- (25) ànyà **óyà** ɲgì
this ten axe
‘These ten axes’

Numerals 20 and higher, on the other hand, follow the noun:

- (25) à tìnà **sí** [N > Num]
the fish twenty
‘The twenty fish’
- (25) ɲgì **máámá-sí**
axe two-twenty
‘Forty axes’
- (25) ànyà ɲgì **sì**
this axe twenty
‘These twenty axes’

Other, non-numeral, quantifiers display a similar pattern: some quantifiers precede the NP, while other quantifiers follow NP. The quantifiers **nánà** ‘some’, **lèè** ‘each’ and **izù/izùzù** ‘many’ are pre-nominal:

- (25) [**nánà** Bòmá ògìò] òbù-mà [Q° > NP]
some Boma machete sharp-NFUT
‘Some of Boma’s machetes are sharp’
- (25) [**lèè** ɲgì] òbù-mà
each axe weight-NFUT
‘Each axe is heavy’ (‘Each axe has weight’)
- (25) [**izùzù** ɲgì] òbù-mà
many axe sharp-NFUT
‘Many axes are sharp’

However, the quantifiers **kòkò** ‘all’, and **pírikà** ‘half’ are post-nominal:

- (25) [Bòmá ògìò **kòkò**] òbù-mà [NP > Q°]
Boma machete all sharp-NFUT
‘All of Boma’s machetes are sharp’
- (25) [ɲgì **pírikà**] òbù-mà
axe half sharp-NFUT
‘Half of the axes are sharp’

The examples above show that numerals & quantifiers in Defaka display both head-initial and head-final orders. Since we find both orderings within the same category, it is impossible to draw a principled directionality split along category lines, or based on sections of the clausal spine. This

suggests that Defaka is quite unlike most split-headedness languages, which make sharper divisions between the phrases that are head-initial and those that are head-final.

6. Summary & conclusions

In this paper, we have presented basic facts and generalizations about Defaka word order and phrase structure. We showed that neither head-initial, nor head-final phrase structure gives a complete explanation of the ordering of heads and complements in Defaka. On the surface, the language has both head-initial and head-final phrases. However, unlike languages with ‘true’ split-headedness, the split between head-initial & head-final categories in Defaka does not seem to follow any principled boundary: both lexical and functional projections exhibit both head-initial and head-final orders. Small numerals and large numerals show opposite directionality patterns, even within the same category; this split is particularly problematic for equating the surface word order patterns with directionality in the phrase structure. Since no one, coherent, directionality explains all the data, movement is necessary for a full analysis of Defaka word order patterns.

In closing, we suggest that many of the main generalizations follow straightforwardly from a basically head-initial structure, coupled with movement for case-related reasons. The categories that are consistently head-final on the surface are all related to case assignment: adpositions (P^0) assign locative case to DPs, verbs assign case to their objects, and T^0 is associated with licensing of nominative case. Consequently, the presence of postpositions and the basic SOV word order would fall out automatically if case assignment in Defaka is contingent on a specifier-head relationship.² This would also capture the generalization that those categories that are consistently head-initial, such as DP & CP, are categories that don’t play a role in licensing case. Under this account, the relative order of TAM clitics, and the split pattern in numerals & quantifiers, must be explained by other factors, which we leave open for future work.

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² See Koopman 1984 for a similar proposal linking case and directionality together.

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