Head Movement in Bantu DPs
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§1. Introduction to word order in Bantu DPs.

(1) (a) N…X…(Dem)…Y OR (b) Dem N…X…Y…

*consistently available*

*an option in some languages*

- No articles.
- Limited inventory of adjectives.
- Mirror image modifier order preferred but many post-nominal alternatives occur.

(2) Ndi-cha-ku-pa zvipunu zvikuru zvitatu izvi [Shona]
I-FUT-you-give spoons big 3 these [N Adj Num Dem]
‘I will give you these three big spoons.’

What word orders are acceptable in responses?

(3) Aiwa, Ha-ndi-d-i izvi. Ndi-noda…
No. Neg-I-want-Neg these. I-want…
‘No, I don’t want THESE. I want… THOSE three big spoons.’

(4) a. zvipunu zvikuru zvitatu izvo. [N Adj Num Dem] OK
b. izvo zvipunu zvikuru zvitatu. [Dem N Adj Num] OK
c. zvipunu izvo zvikuru zvitatu. [N Dem Adj Num] OK
d. zvipunu zvitatu zvikuru izvo. [N Num Adj Dem] OK
e. izvo zvipunu zvitatu zvikuru. [Dem N Num Adj] OK
f. zvipunu izvo zvitatu zvikuru. [N Dem Num Adj] OK

(5) Aiwa, Ha-ndi-d-i zvipunu zvikuru. Ndi-noda…
No. Neg-I-want-Neg spoons BIG I-want those 3 SMALL spoons.

(6) Aiwa. Ha-ndi-d-i zvipunu zvitatu. Ndi-noda…
No. Neg-I-want-Neg spoons THREE I-want those TWO big spoons.

The orders allowed in responses to (3) are also felicitous responses to (5) and (6).

§2. Theoretical Qs and As.

*Questions*

a. How best to explain these word orders? In particular:
b. Are modifiers always left Specs of FPs (Cinque 2005)? and
c. Is there head movement of N, or only XP movement (Cinque 2005, Shlonsky 2004)?
d. If there is head movement, is it syntactic or phonological?
My answers
a. A head-movement account best captures the regularities of Bantu noun placement.
b. The approach of Cinque (2005) fares poorly at dealing with the Bantu facts.
c. N-to-D adjunction is key to explaining broad patterns of Bantu agreement and A-movement (Carstens to appear).
d. The same “big picture” factors strongly argue that Semitic N adjoins to D like in Bantu, as in Ritter (1991), Fassi Fehri (1994) and contra Shlonsky (2004).
e. Syntactic consequences of N-to-D argue that it is a syntactic process.

Talk structure
§3 illustrates a Cinque-style approach and its shortcomings in relation to Bantu.
§4 shows that symmetric base-generation options for modifiers is insufficient on its own to account for the facts.
§5 proposes N-to-D, symmetric base-generation options and an optional higher location for a raised demonstrative.
§6 shows the “big picture” advantages for explaining Bantu agreement and movement.
§7 sketches an extension of the approach to Semitic.
§8 summarizes some theoretical consequences, including the syntactic nature of N-to-D.

§3. The cartographic model (Cinque 2005). Universal hierarchy and word order; no head-movement; only leftwards XP movement.

(7) \[ Agr_wP \]
\[ Spec \]
\[ Agr_w WP \]
\[ DemP \]
\[ these \]
\[ W \]
\[ Agr_xP \]
\[ Spec \]
\[ Agr_x XP \]
\[ NumP \]
\[ three \]
\[ X \]
\[ Agr_yP \]
\[ Spec \]
\[ Agr_y YP \]
\[ AP \]
\[ big \]
\[ Y \]
\[ NP \]
\[ spoons \]

(8) \[ [NP spoons] these t_{NP} three t_{NP} big t_{NP} \] (= 4f; complete NP-movement)

(9) \[ these [NP spoons] three t_{NP} big t_{NP} \] (= 4e; Cinque: very rare)

(10) \[ [AgrXP [NP spoons] three t_{NP} big t_{NP}] these t_{AgrXP} \] (= 4d; NP moves x2 followed by roll-up)
(11) a. *these three \[AgrXP [NP spoons] big \] \[t_{NP} \] \[NP can’t surface in Spec, Agr_P unless…\] 
b. these \[AgrYP spoons big \] \[t_{NP} \] three \[t_{AgrYP} \] \[=4b; Agr_YP rolls up to Spec, Agr_XP, or… \] 
c. \[AgrWP [AgrXP [AgrYP spoons big \] \[t_{NP} \] three \[t_{AgrYP} \] these \[t_{AgrXP} \] \[=4a; mirror order via successive roll-ups\]

(12) \[NP spoons\] these \[AgrYP \] \[t_{NP} big \] \[t_{NP} \] three \[AgrYP \] \[=4c; roll-up part way & sub-extract NP. Cinque: very few languages; possibly spurious\]

\textit{Drawbacks:}

- The consistent aspects of word order in Bantu DPs are an accidental outcome of different derivations and landing sites.
- What’s the motivation for these movements?
- Orders that are disallowed in Bantu: What rules them out?

*Dem Num A N Universally base-generated but never surfacing in Bantu
*Dem Num N A An intermediate step (=11a) that can’t surface
*Num N A Dem No less plausible than the attested orders, under this approach: raise NP to Spec Agr_P; then raise XP or Agr_XP to Spec, Agr_WP

§4. \textit{Symmetric base-generation options for adjuncts.}
A universal hierarchy [Dem>Num>Adj>N], not a universal linear order.

(13) a. 

\begin{center}
\begin{tikzpicture}
  \node (N) {N} ;
  \node (Adj) [above of=N] {Adj} ;
  \node (Num) [above of=Adj] {Num} ;
  \node (Dem) [above of=Num] {Dem} ;
  \draw (Dem) -- (Num) ;
  \draw (Num) -- (Adj) ;
  \draw (Adj) -- (N) ;
\end{tikzpicture}
\end{center}

b. 

\begin{center}
\begin{tikzpicture}
  \node (N) {N} ;
  \node (Adj) [above of=N] {Adj} ;
  \node (Num) [above of=Adj] {Num} ;
  \node (Dem) [above of=Num] {Dem} ;
  \draw (Dem) -- (Num) ;
  \draw (Num) -- (Adj) ;
  \draw (Adj) -- (N) ;
\end{tikzpicture}
\end{center}

c. 

\begin{center}
\begin{tikzpicture}
  \node (N) {N} ;
  \node (Adj) [above of=N] {Adj} ;
  \node (Num) [above of=Adj] {Num} ;
  \node (Dem) [above of=Num] {Dem} ;
  \draw (Dem) -- (Num) ;
  \draw (Num) -- (Adj) ;
  \draw (Adj) -- (N) ;
\end{tikzpicture}
\end{center}

\textit{On its own, this approach to flexible Bantu modifier order fails in two ways.}

- Over-generation problems: the following must be weeded out.

(14) a. Dem-Num-Adj-N \textit{We want Num>Adj sometimes, but only after N}
b. Num-N-Adj-Dem \textit{As above}
c. Dem-Adj-N-Num \textit{This would be okay if N were further left}
d. Dem-Num-N-Adj \textit{As above}
e. Num Adj-N-Adj \textit{Medial N again no good}

- Under-generation problem where Dem is neither initial nor final.

(15) \[N-Dem-Adj-Num (= 4c) \quad N-Dem-Num-Adj (=4f)\]

The generalization: a Bantu noun is in a sufficiently high left-peripheral position that only a demonstrative can licitly precede it, despite much word order freedom.
§5. Proposal.

a. Spec, head-complement order and leftwards movement are universal.
b. But modifiers can be adjoined to the left or to the right, constrained by universal hierarchy only (see Abels & Neeleman 2007 for more arguments for a & b).
c. N always raises and adjoins to D in Bantu.
d. Dem is an adjunct base-generated below DP but higher than Num and A. Its features cause it to enter a relationship with D that can yield Dem raising to Spec, DP (see also Giusti 1997; Alexiadou, Haegeman & Stavrou 2007 among others on the two Dem positions in other languages).

(16) a. \([\text{DP} \text{N}+\text{D} [\text{XP} \text{Dem} \ldots t_N \ldots]]\)  Aforementioned in Shona & Kirundi
b. \([\text{DP} \text{Dem} \text{N}+\text{D} [\text{XP} t_{\text{Dem}} \ldots t_N \ldots]]\)  First-mention in Shona & Kirundi

These assumptions derive (4a-f). Two examples:

(17) a. [N-Dem-Num-A]

b. [N-Num-A-Dem]
(18) Full disclosure:  

a. zvipunu zvikuru izvo zvitatu.  [N Adj Dem Num] OK  
b. zvipunu zvitatu izvo zvikuru.  [N Num Dem Adj] OK

But these “seem a little different” to my Shona speaker, who suggests a very slight pause may follow DEM and that the final modifier is emphasized, maybe like ‘These three spoons, the small ones’. I propose: [N XP Dem… [pro small]/[pro three]]. (18b) seems otherwise underivable under any analysis besides unconstrained rightwards scrambling (Cinque 2005a: 316 “…*N Num Dem A…is (still) unattested…” )

§6. Compelling evidence that N and D amalgamate: big picture gains of the approach for explaining a major constellation of Bantu properties

A logical alternative to the analysis in §5: it’s a minimal NP that always raises to a high Spec position in Bantu DPs; and maybe the orders [N-Dem] and [Dem-N] come about because there are two licit landing sites for this small NP, one below and one above the demonstrative. Here’s why, even if apparent N-raising is really XP-movement to Spec, it must always end in morphological amalgamation of N-to-D in Bantu (cf. Matushansky 2006 for such an approach to head-movement phenomena).

Hyperagreement and Hyperactivity in Bantu (Carstens to appear)

(a) Hyperagreement Part I: Bantu SA includes person, number, and gender. In IE, SA systematically excludes gender features.

(19) a. Mtoto a-na-elekea mji-ni  [Swahili]  
     1child 1SA-PRES-head town-LOC  
     ‘The child is heading towards town’

     5car 5SA-PRES-head town-LOC  
     ‘The car is heading towards town’

(20) a. pro Ni-na-elekea mji-ni  [Swahili]  
     IS-PRES-head town-LOC  
     ‘I’m heading towards town’

     b. pro M-na-elekea mji-ni.  
     IIPL-PRES-head town-LOC  
     ‘You guys are heading towards town’

(21) a. La niña dormía  b. El niño dormía  [Spanish]  
     the.fem child(f) sleep.PAST.3S the.masc child(m) sleep.PAST.3S  
     ‘The girl slept’  ‘The boy slept’

Romance: no SA contrast in gender

Analysis: SA= an undifferentiated $\phi$T, so locality plays a role. A $\phi$ probe cannot generally access [gender] across the intervening [person] feature.
(22) a. \[T\phi \quad DP \quad [\text{person}]\] \\
\[D \quad \ldots \quad \text{NP} \quad [\text{person}]\] \\
\[N \quad [\text{gender}]\]

b. \[DP \quad [\text{person}, \text{gender}]\] \\
\[D \quad \ldots \quad \text{NP} \quad [\text{person}] \quad [\text{gender}]\]

\[\text{Bantu}\]

(23) a. \[l’\text{invasione italiana dell’Albania}\]
the invasion Italian of Albania
‘the Italian invasion of Albania’

b. \[\text{[DP l’[FP invasion+F [NP Italiana t\text{N} dell’Albania]]] N in DP’s middle field}\]

IE participles can agree in gender because as a lexical property they are blind to [person]. The complementary distribution of person/gender agreement in languages without N-to-D adjunction is not an accident but a striking locality effect.

Note that an external probe cannot agree with Spec, DP (24), so NP-movement to Spec DP would not suffice to yield the desired results for Bantu. N and D must amalgamate morphologically:

(24) My mother is/*am nice

The ubiquity of number agreement obscures the role of locality in determining agreement features. But number is a quantifier, and Qs raise for scope. Anti-locality (Grohmann 2000, Abels 2003) prevents NumP raising to Spec, DP, so Num’s features adjoin to D.

(25) a. \[T\phi \quad TP \quad \text{vP}\] \\
\[DP \quad [\text{person}]\] \\
\[\quad \quad \quad D \quad \text{NumP} \quad [\text{person}]\] \\
\[\quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \ quad
(c) Hyperactivity: Unusually free A-movements.

(27) a. Mutu t-á-ku-sol-ág-á maku wéneéne. [Kilega]
    1person NEG-1SA-PROG-drink-HAB-FV 6beer alone
    ‘A person does not usually drink beer alone.’

b. Maku ta-má-ku-sol-ág-á mutu wéneéné
    6beer NEG-6SA-PROG-drink-HAB-FV 1person alone
    ‘No one usually drinks beer alone.’
    [Lit: beer doesn’t usually drink a person alone]

(28) Ku-Lúgushwá kú-kili ku-á-twag-a nzogu maswá. [Kilega]
    17- Lúgushwá 17SA-be.still 17SA-A-stampede-FV 10elephant 6farm
    ‘At Lugushwa elephants are still stampeding (over the) farms.’

See Kinyalolo (1991); Ndaryiragije (1999) for persuasive arguments that the fronted expression in these constuctions is in the canonical subject position, an A-position.

(29) The Activity Requirement: each participant in an Agree relation must have an unchecked uninterpretable feature.

(30) The gender of nouns is meaningless, hence uninterpretable, hence an Activity feature just like a DP’s abstract Case feature.

(31) **Goal Deactivation Principle:** Agree only deactivates uFs that it values, because PF can read only a single value for a given formal feature. And feature values cannot be licitly erased or over-written (cf Epstein, Kitahara, & Seely 2010: Law of the Conservation of Features).

(32) a. [He_{Nom} T_{3S} seems [<3rd Case> to have left]]

b. *[He_{Nom,nom} T_{3S} seems [<He_{nom}> T_{3S} has left]]

N-to-D gives every Bantu DP an Activity feature that is never deactivated, so DPs can continue to value agreement and to A-move when their IE counterparts would already be deactivated by Case-valuation.

§7. **Semitic.**

- Left edge nouns like Bantu.
- Grammatical gender a component of subject agreement, as in Bantu.
- Iterating subject agreement, as in Bantu.

The same big-picture motivation for assuming N amalgamates with D.

(33) a. daxal-tu daar-a r-rajul-i-n waasi\textsuperscript{c}at-a-n [Standard Arabic]
    entered-I house-ACC the-man-GEN-n large-ACC-n
    'I entered a large house of a man' (Fassi Fehri 1993:219)

b. [DP daar-a [GenP r-rajul-i-n tGen [NP waasi\textsuperscript{c}at-a-n t\textsubscript{N}]]

    [DP =Ø] [GenP =Ø] [NP =Ø]
(34) a. daxal-tu d-daar-a
entered-I the-house-ACC
'I entered the house' (Fassi Fehri 1993:215)

b. [DP d-daar-a [NP tN ]]
the-house-ACC

(35) a. al-?awlaadu qadim-uu
the-boys came-3 MASC.PL
'The boys came'

b. al-bint-aani qadim-ataa
the-girls-3.DUAL came-3. FEM.DUAL
'The girls came'

(36) al-bint-aani kaan-ataaa ta-ktub-aani darsa-humaa
the-girls(F)-3D be+past-3FD 3F-write-D lesson-FD
(D = dual)
'the two girls were writing their lesson'

However Shlonsky (2004) shows that in numerous Arabic dialects cardinal numbers come between the article and the noun, and rejects the head-movement account.

(37) el xamas banaat [Cairo, Tomiche 1964]
the five girls
‘the five girls’

But this apparent problem disappears under the view that DP is actually a set of categories (cf Rizzi 1997 on CP; Aboh 2004 for extension to DP). Where Bantu fronts demonstratives to Spec, DP, Semitic fronts cardinals to a Spec intermediate between Def(initeness)P and PersonP (Spec Top? Spec Foc?). It is adjunction of N to the head bearing person features that is crucial to predict gender in SA and iteration of SA.

(38) [DP el[TopP xamas [FocP [PersonP N+Num+Person [NumF <xamas> <Num>…[NP <N>…..

A point of contrast: Bantu has “hyperactivity”; Semitic does not.

Diercks (to appear): Case is/is not present in a given language. Bantu has no Case. Arguments: (i) The central role of gender in Bantu Activity; (ii) lack of evidence for any relationship between T and logical SU in inversion constructions; (iii) absence of morphological case; (iv) licit appearance of DPs in canonically Case-less positions such as subject of infinitive or object of passive verb.

(39) I-na-wezakana (*kwa) Maiko ku-m-pig-i-a Tegani simu [Swahili]
9SA-PRS-possible for Michael INF-1OA-beat-APPL-FV Tegan phone
‘It is possible *(for) Michael to call Tegan’

(40) kw-á-uray-iw-a murúmé né-shumba [Shona]
17SA-PAST-kill-PASS-FV 1man by-9lion
‘There was a man killed by a lion at the river’
[Lit: there was killed a man by a lion]

Note Semitic has case morphology. Proposal: Bantu-style inversion constructions would expend Semitic T’s ability to value the subject’s uCase feature, leading to a crash.
§8. Some implications.

- Head-movement exists in grammar.
- Head-movement has syntactic consequences; it is part of narrow syntax.
- For modifiers at least, order and hierarchy are distinct.
- UF s need not be deactivated and deleted from the syntactic object bound for the Conceptual-Intentional interface, where material that isn’t semantic is ignored (Epstein, Kitahara, & Seely 2010).

Selected References.


Carstens, V. To appear. Hyperactivity and Hyperagreement in Bantu; in Lingua.


