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The nanosyntax of noun class prefixes in Bantu
Lecture 3

1. Recap

In the previous session, we found that the nanosyntactic account correctly characterizes both the paradigm of the Nguni demonstratives and the distribution of initial vowels on Sati nouns.

1.1. Demonstratives:

Simplifying, we have:

(1) [aug [sc [oc [ac

Suppose you cut the structure right below the sc, and imbed the residue under *la*:

(2) [*la* [aug [sc]]]

Question: In which classes do you expect to see the CV part of the corresponding class prefix emerging?:

(3) Class 1 *lo* Class 2 *la**ba*** (Zulu, Swati)
3 *lo* 4 *le*
5 *le**li*** 6 *la*
7 *le**si*** 8 *le**zi***
9 *le* 10 *le**zi***
11 *lo**lu***
14 *lo**bu***
15 *lo**ku***

Generalization: The CV part of the class prefix appears inside the demonstrative in all and only those classes where the sc = CV.
Examples:

(4)a [*l* [*a* [$_{AUG}$ A_1 [$_{SC}$ B_1]]]] → */lo/* (class 1)
|_____|
|
u

b [*l* [*a* [$_{AUG}$ A_2 [$_{SC}$ B_2]]]] → */laba/* (class 2)
| |
a *ba*

1.2. The initial vowel in Swati

Suppose now we have a language in which the structure of a class prefix on nouns does not include the aug (or aug is lexicalized as a floating high tone):

(5) [sc [oc [ac [N

Question: In which classes do you expect to see an initial vowel?

(6) Class 1 ***u****mu-* Class 2 *ba-* (Swati)
3 ***u****mu-* 4 ***i****mi-*
5 *li-* 6 ***e****ma-*
7 *si-* 8 *ti-*
9 ***i****N-* 10 *tiN-*
11 *lu-*
14 *bu-*
15 *ku-*

Generalization: In Swati, the full class prefix on nouns has an initial vowel in all and only those classes where the sc = V.
Examples:

(7)a $[_{SC}\ B_1\ [_{AC}\ C_1\ ]]$ (class 1)
| |
u *mu*
b $[_{SC}\ B_5\ [_{AC}\ C_5\ ]]$ (class 5)
|_____|
|
li

2. But …

There are wrinkles:

2.1. The Xhosa demonstratives

The paradigm of demonstratives in Xhosa is different from the paradigm for Zulu and Swati in one respect:

(8) Class 1 ***l****o* sc: *u* Class 2 *aba* sc: *ba* (Xhosa)
3 ***l****o* *u* 4 ***l****e* *i*
5 *e****l****i* *li* 6 ***l****a* *a*
7 *esi* *si* 8 *ezi* *zi*
9 ***l****e* *i* 10 *ezi* *zi*
11 *olu* *lu*
14 *obu* *bu*
15 *oku* *ku*

Generalization:

(9) In Xhosa, the demonstratives have an initial *l*- in all and only those classes where the sc is a V (the "weak" classes).

Why?

2.2. The Swati nouns

I conveniently left out the following:

(10)a the class 6 initial vowel *e* ≠ sc6 *a*
b Class 2 should never have an initial vowel
c The class 2 variant *be*- is unaccounted for

3. The prefix-internal *I* in Swati

We begin with the Swati fact in (10)a, unexpected because:

(11) [sc_6 [oc_6 [ac_6
|____| |
| |
a *ma*

3.1. V – I - CV

Focusing on the class 6 prefix *ema*, we may maintain the correspondence with the sc, by postulating (12), where *I* coalesces with a preceding *a*:

(12) [$_{sc}$ *a* [$_{oc}$ *a* [$_{x}$ *I* [$_{ac}$ *ma* (→ /***e****ma*/ by coalescence)

This generalizes to all the weak classes:

(13)a [$_{sc}$ V_1 [$_{oc}$ V_i [$_{x}$ *I* [$_{ac}$ CV_2 (with $V_1 = V_2$)
b [$_{sc}$ *u* [$_{oc}$ *u* [$_{x}$ *I* [$_{ac}$ *mu* → /*umu*/ (class 1/3)
c [$_{sc}$ *i* [$_{oc}$ *i* [$_{x}$ *I* [$_{ac}$ *mi* → /*imi*/ (class 4)
d [$_{sc}$ *a* [$_{oc}$ *a* [$_{x}$ *I* [$_{ac}$ *ma* → /*ema*/ (class 6)

Provided we take *I* to have the same phonological properties as the "latent *i*" associated with certain verb roots, which coalesces with *a*, but simply disappears after other vowels:

(14)a A-**ba**-fana **be**-za eKapa (*a I* → *e*)
2- 2- boy sc2-come to the Cape
b **U**-m-fana **u**-za eKapa (*u I* → *u*)
1 – 1- boy sc1-come to the Cape
c **I**-n-kosi **i**-za eKapa (*I I* → *i*)
9-9-chief sc9-come to the Cape

3.2. Class 2 *eba-*

The class 2 variant *eba* only seems to occur in copulatives:

(15) Ng-**e-ba-**ntfu
cop- 2-2 –man
"They are men."

To accommodate this, we need to assume that class 2 can behave like a weak class in copulatives:

(16) $[_{sc}\ a\ [_{oc}\ a\ [_{x}\ I\ [_{ac}\ ba \rightarrow$ /*eba*/ (class 2)

Class 2 likewise groups with the weak classes in the copulative paradigm of Xhosa:

(17)	copulative:	SC:	(Xhosa)
	class 1 *ngu-m*	*u*	
	2 ***nga-ba***	***ba***	
	3 *ngu-m*	*u*	
	4 *yi-mi*	*i*	
	5 *li-li*	*li*	
	6 *nga-ma*	*a*	
	7 *si-si*	*si*	
	8 *zi-zi*	*zi*	
	9 *yi-N*	*i*	
	10 *zi-zi-N*	*zi*	
	11 *lu-lu*	*lu*	
	14 *bu-bu*	*bu*	
	15 *ku-ku*	*ku*	

Pattern: *Ng-* occurs only in the weak classes and in class 2.

3.3. A correlation

Layered Case ?:

(18)a nominative = [nom [acc [gen [dat = [sc [oc [x [ac
b accusative = [acc [gen [dat = [oc [x [ac
c genitive = [gen [dat = [x [ac
d dative = [dat = [ac

This picture now leads to the expectation that the *I* postulated for Swati will emerge in all classes in context where an "oblique" Case is called for.
Consider now what happens when a Swati noun is embedded under *a* "of", *na* "with, and" or *nga* "with":

(19) *na* "with" plus a noun:	independent ("strong") noun:
class 1: *n**e**muntfu*	***u**muntfu* "man"
2: *n**e**bantfu*	*bantfu* "men"
3: *n**e**muti*	***u**muti* "village"
4: *n**e**miti*	***i**miti* "villages"
5: *n**e**libutfo*	*libutfo* "regiment"
6: *n**e**mabutfo*	***e**mabutfo* "regiments"

This contrasts with Xhosa/Zulu, where, for example, we have:

(20) *na* "with" plus a noun:	independent (strong) noun:
class 2: *n**a**bantu*	***a**bantu* "men"
6: *n**a**mafu*	***a**mafu* "clouds"

The underlying forms are *a*, *na* and *nga* even in Swati, as seen in (21):

(21) *na* "with" plus pronoun:	independent (strong) pronouns:
class 1: *na**ye***	***ye**na*
2: *na**bo***	***bo**na*
3: *na**wo***	***wo**na*
4: *na**yo***	***yo**na*
5: *na**lo***	***lo**na*
6: *na**wo***	***o**na*

And the underlying forms reappear when (19) is placed in the scope of negation:

(22) *na* "with" plus a noun under Neg:	noun under Neg:
class 1: *n**a**muntfu*	*muntfu* "man"
2: *n**a**bantfu*	*bantfu* "men"
3: *n**a**muti*	*muti* "village"
4: *n**a**miti*	*miti* "villages"
5: *n**a**libutfo*	*libutfo* "regiment"
6: *n**a**mabutfo*	*mabutfo* "regiments"

Example:

(23)a Lo m-fati u-n**e** –m-ntfwana
this-1 1-woman sc1-with-2-child
"This woman has a child."
b Lo m-fati a –ka-n**a**-m-ntfwana
this 1-woman not-sc1-with-2-child
"This woman has no child."

Under negation the structure of the prefix is trimmed down to the ac (= CV in all classes):

(24) class 1: *na* [$_{ac}$ *mu* [$_{N}$ *ntfu*]] → /n***a***muntfu/
2: *na* [$_{ac}$ *ba* [$_{N}$ *ntfu*]] → /n***a***bantfu/
3: *na* [$_{ac}$ *mu* [$_{N}$ *ti*]] → /n***a***muti/
4: *na* [$_{ac}$ *mi* [$_{N}$ *ti*]] → /n***a***miti/
5: *na* [$_{ac}$ *li* [$_{N}$ *butfo*]] → /n***a***butfo/
6: *na* [$_{ac}$ *ma* [$_{N}$ *butfo*]] → /n***a***mabutfo/

Suggesting (19) = (25), conforming to the expectation arising from (12)-(13) and (18):

(25) class 1: *na* [$_{x}$ ***I*** [$_{ac}$ *mu* [$_{N}$ *ntfu*]]] → /n***e***muntfu/
2: *na* [$_{x}$ ***I*** [$_{ac}$ *ba* [$_{N}$ *ntfu*]]] → /n***e***bantfu/
3: *na* [$_{x}$ ***I*** [$_{ac}$ *mu* [$_{N}$ *ti*]]] → /n***e***muti/
4: *na* [$_{x}$ ***I*** [$_{ac}$ *mi* [$_{N}$ *ti*]]] → /n***e***miti/
5: *na* [$_{x}$ ***I*** [$_{ac}$ *li* [$_{N}$ *butfo*]]] → /n***e***libutfo/
6: *na* [$_{x}$ ***I*** [$_{ac}$ *ma* [$_{N}$ *butfo*]]] → /n***e***mabutfo/

Unifying class 6 *ema-* and *a, na, nga* → *e, ne, nge* in Swati is supported by the fact that Xhosa/Zulu has neither.

4. Movement within prefixes

Integrating the "strong" classes (with sc = CV) brings out two new issuses.

4.1. What happens to I in the strong classes?

What about class 5 ?:

(26)a *na* "with" plus noun:
na [$_{x}$ ***I*** [$_{ac}$ *li* [$_{N}$ *butfo*]]] → /n***e***libutfo/
b elsewhere:
libutfo, not *[$_{sc}$ *li* [$_{x}$ *I* [$_{ac}$ *li* [$_{N}$ *butfo*]]]] or *[$_{sc}$ *I* [$_{ac}$ *li* [$_{N}$ *butfo*]]]

Question: How to get the right forms when the class prefix projects beyond x?
No spanning solution:

(27)a *li* ←→ < sc, oc, x, ac >
b *I* ←→ < x >

(28)a [sc [oc [x [ac
|____|__|___|
|
li
b [x [ac
| |
I *li*

c [x [ac
|___|
|
li

"Biggest wins":

(29) When all heads in a span S can be lexicalized by a single morpheme, that option must be taken.

Class 5 is representative of the larger set of strong noun classes:

(30)	pfx-N:	sc-V
class 2	*ba*	*ba*
5	*li*	*li*
7	*si*	*si*
8	*ti*	*ti*
10	*tiN*	*ti*
11	*lu*	*lu*
14	*bu*	*bu*
15	*ku*	*ku*

4.2. Strong CV moves across I

General picture for the strong classes:

(31) [CV … [$_x$ *I* [$_{ac}$ ~~CV~~

Sample derivations using the Swati class 5 prefix *li*:

(32)a [$_{ac}$ *li*] → (merge x) (nominative)
[$_x$ *I* [$_{ac}$ *li*]] → (merge oc by internal merge)
[$_{oc}$ *li* [$_x$ *I* [$_{ac}$ ~~*li*~~]]] → (merge sc by internal merge)
[$_{sc}$ *li* [$_{oc}$ ~~*li*~~ [$_x$ *I* [$_{ac}$ ~~*li*~~]]]] → (coalescence)
/*li*/

b [$_{ac}$ *li*] → (merge x) (accusative)
[$_x$ *I* [$_{ac}$ *li*]] → (merge oc by internal merge)
[$_{oc}$ *li* [$_x$ *I* [$_{ac}$ ~~*li*~~]]] → (coalescence)
/*li*/

c [$_{ac}$ *li*] → (merge x) (genitive)
[$_x$ *I* [$_{ac}$ *li*]]

d [$_{ac}$ *li*] (dative)

In general:

(33)a start with [$_{ac}$ CV]
b merge x
c remerge CV as oc and sc iff C ≠ *m* (modulo class 2 in copulatives)

4.3. Class 2

Running the derivations in (32) with the class 2 prefix *ba* (= sc2) produces the class 2 variant *be-* when the prefix projects beyond x:

(34) [$_{sc}$ *ba* [$_{oc}$ ~~*ba*~~ [$_{x}$ *I* [$_{ac}$ ~~*ba*~~]]]] → (coalescence)
/*be*/

(35)a [$_{ac}$ *ba*] → (merge x) (nominative)
[$_{x}$ *I* [$_{ac}$ *ba*]] → (merge oc by internal merge)
[$_{oc}$ *ba*[$_{x}$ *I* [$_{ac}$ ~~*ba*~~]]] → (move sc by internal merge)
[$_{sc}$ *ba* [$_{oc}$ ~~*ba*~~ [$_{x}$ *I* [$_{ac}$ ~~*ba*~~]]]] → (coalescence and elision)
/*be*/
b [$_{ac}$ *ba*] → (merge x) (genitive)
[$_{x}$ *I* [$_{ac}$ *ba*]]
c [$_{ac}$ *ba*] (dative)

But the class 2 variant *be-* is restricted to a small set of nouns mostly denoting ethnic groups, e.g. *belungu* "whites", and doesn't have the properties expected if derived as in (35):

Predictions from (35):

(36)a ***n*eb*a*lungu** "with the whites" vs ***n*eb*e*lungu**, ***n*ab*e*lungu**, since *na* embeds x (intermediate size) = *na* [$_{x}$ *I* [$_{ac}$ *ba*]] (→ /*nebalungu*/)
b ***ba*** vs ***be*** in the scope of negation, since stripped down to ac: [$_{ac}$ *ba*]

But these predictions are false. What we have, is:

(37)a ***n*eb*e*lungu** "with the whites" vs ***n*eb*a*lungu**
b under negation: ***be*lungu** vs ***ba*lungu**

Suggestion (by Nhlanhla Thwala):

(38) [$_{sc}$ *ba* [$_{N}$ Ø]] [*a* [$_{x}$ *I* [$_{ac}$ *lu* [$_{N}$ ngu]]]]
the of 11 white

The regular class 2 prefix is *ba-*.

4.4. Movement of CV makes I disappear

Thus, movement of CV_i across x must make x spell out as V_i or not spell out at all:

(39) [$_{sc}$ *ba* [$_{oc}$ ~~*ba*~~ [$_{x}$ ***a***/***Ø*** [$_{ac}$ ~~*ba*~~]]]] → (coalescence if x = *a*)
/*b**a***/

There may be a reason to prefer the first option, taking x as an agreeing head.
It will not be sufficient to say that x, the piece of structure spelling out as *I* in Swati, is Ø in Xhosa/Zulu:

(40) class 1: *na* [$_{x}$ ***Ø*** [$_{ac}$ *mu* [$_{N}$ *ntu*]]] → */n**a**muntu/* vs */n**o**muntu/*
2: *na* [$_{x}$ ***Ø*** [$_{ac}$ *ba* [$_{N}$ *ntu*]]] → */n**a**bantu/*
3: *na* [$_{x}$ ***Ø*** [$_{ac}$ *mu* [$_{N}$ *thi*]]] → */n**a**muthi/* vs */n**o**muthi/*
4: *na* [$_{x}$ ***Ø*** [$_{ac}$ *mi* [$_{N}$ *thi*]]] → */n**a**mithi/* vs */n**e**mithi/*
5: *na* [$_{x}$ ***Ø*** [$_{ac}$ *li* [$_{N}$ *fu*]]] → */n**a**lifu/* vs */n**e**lifu/*
6: *na* [$_{x}$ ***Ø*** [$_{ac}$ *ma* [$_{N}$ *fu*]]] → */n**a**mfu/*

Rather, we need:

(41) class 1: *na* [$_{x}$ ***u*** [$_{ac}$ *mu* [$_{N}$ *ntu*]]] → */n**o**muntu/*
2: *na* [$_{x}$ ***a*** [$_{ac}$ *ba* [$_{N}$ *ntu*]]] → */n**a**bantu/*
3: *na* [$_{x}$ ***u*** [$_{ac}$ *mu* [$_{N}$ *thi*]]] → */n**o**muthi/*
4: *na* [$_{x}$ ***i*** [$_{ac}$ *mi* [$_{N}$ *thi*]]] → */n**e**mithi/*
5: *na* [$_{x}$ ***i*** [$_{ac}$ *li* [$_{N}$ *fu*]]] → */n**e**lifu/*
6: *na* [$_{x}$ ***a*** [$_{ac}$ *ma* [$_{N}$ *fu*]]] → */n**a**mfu/*

That is, x must be an agreeing head in Xhosa/Zulu.
Suggesting:

(42)a x only agrees with the CV part of the prefix
b x may agree downwards in Xhosa/Zulu
c x only agrees upwards in Swati
d *I* spells out x with default agreement

Thus, for Xhosa/Zulu:

(43)a [x_i [$_{ac}$ *ma*$_i$ → [$_{x}$ ***a*** [$_{ac}$ *ma* (class 6 prefix under *a, na, nga*)
b [$_{sc}$ *a* [x_i [$_{ac}$ *ma*$_i$ → [$_{sc}$ *a* [$_{x}$ ***a*** [$_{ac}$ *ma* (full class 6 prefix modulo aug)
c [$_{sc}$ *ba*$_i$ [x_i [$_{ac}$ ~~*ba*~~$_i$ → [$_{sc}$ *ba* [$_{x}$ ***a*** [$_{ac}$ ~~*ba*~~ (full class 2 prefix modulo aug)

Vs Swati:

(44)a [x [$_{ac}$ *ma*$_i$ → [$_{x}$ ***I*** [$_{ac}$ *ma* (class 6 prefix under *a, na, nga*)
b [$_{sc}$ *a* [x [$_{ac}$ *ma*$_i$ → [$_{sc}$ *a* [$_{x}$ ***I*** [$_{ac}$ *ma* (full class 6 prefix modulo aug)
c [$_{sc}$ *ba*$_i$ [x_i [$_{ac}$ ~~*ba*~~$_i$ → [$_{sc}$ *ba* [$_{x}$ ***a*** [$_{ac}$ ~~*ba*~~ (full class 2 prefix modulo aug)

4.5. I spelling out the default value of an agreeing head

Consider (45) (from Du Plessis (nd)):

(45)a Xa **i**-ngu-unina, ndi-za ku-m-xelela (Xhosa)
if sc-cop-her.mother sc1-fut oc1-tell
"If it is her mother, I will tell her."
b Abantu aba **i**-b-**i**-ng-abantu abanjani?
2-person dem2 sc-past-sc-cop-2-person rel2-what.kind
"These people were what kind of people?"

Du Plessis: "[T]he impersonal agreement morpheme *I* [which] has no reference to any noun class."

5. Preview

Next time we will address the issues raised by the distribution of the initial *l* in the Xhosa demonstratives in the context of a more general discussion of lexicalization within the nanosyntactic framework.

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