

## Structure of the North Atlantic Languages Valency II

From last class:

- Predicates
- Arguments
- Valency

Connecting Syntax and Morphology

Consider the Bantu language Kinyarwanda, in which the direct object immediately follows the verb.

Kinyarwanda (Bantu; Rwanda)

- (1) a. umugore y-ooher-eje umubooyi ku-soko  
 woman she-sned-asp cook.obj loc-market  
 ‘The woman sent the cook to the market’
- b. umugore y-ooher-eke-ho isoko umubooyi locative to DO  
 woman she-send-asp-loc market.obj cook.obj  
 ‘The woman sent to the market the cook’
- c. umugabo ya-tem-eje igiti n-umuppaanga  
 man he-cut-asp tree.obj instr-saw  
 ‘The man cut the tree with a saw’
- d. umugabo ya-tem-ej-eesha umupaanga igiti instrument to DO  
 man he-cut-asp-instr saw.obj tree.obj  
 ‘The man used the saw to cut the tree’

In Kinyarwanda, only a direct object can be passivized.

- (2) a. umubooyi y-ooher-ej-we ku-soko  
 cook he-send-asp-pass loc-market  
 ‘The cook was sent to the market’
- b. \*(ku-)soko ry-ooher-ej-we umubooyi  
 loc-market it-send-asp-pass cook  
 Intended: ‘The market was where the cook was sent’
- c. isoko ry-ooher-ej-we-ho umubooyi  
 market it-send-asp-pass-loc cook  
 ‘The market was sent the cook to’  
 ‘Someone sent the cook to the market’
- (3) a. umupaanga wa-tem-eesh-ej-we igiti  
 saw it-cut-instr-asp-pass tree.obj  
 ‘The saw was used to cut the tree’
- b. \*igiti u-tem-eesh-ej-we umupaanga  
 tree it-cut-instr-asp-pass saw.obj  
 ‘The tree was cut with the saw’

## Chichewa

- (4) a. mbidzi zi-na-**perek**-a msampha **kwa** nkhandwe  
zebras SM-PAST-hand-ASP trap to fox  
'The zebras handed the trap to the fox'
- b. mbidzi zi-na-**perek-er**-a nkhandwe msampha  
zebras SM-PAST-hand-to-ASP fox trap  
'The zebras handed the fox the trap'
- c. ndi-na-**tumiz**-a chipanda cha mowa **kwa** mfumu  
1sg-past-send-*a* calabash of beer to chief  
'I sent a calabash of beer to the chief'
- d. ndi-na-**tumiz-ir**-a (**\*kwa**) mfumu chipanda cha mowa  
1sg-past-send-appl-*a* to chief calabash of beer  
'I sent the chief a calabash of beer'
- (5) Faatu togg-na jën w-i  
Faatu cook-FIN fish CL-the  
'Faatu cooked the fish'

## Wolof

- (6) a. b-ii-(**b**) xaj  
CL-this-CL dog  
'THIS dog'
- b. xaj b-ii-(**\*b**)  
dog CL-this-CL  
'this dog'

When the demonstrative precedes the noun, an 'extra' agreement is possible ((6)a). When the noun follows the demonstrative, the 'extra' agreement is impossible ((6)b).

The benefactive, instrumental, and causative affixes introduce obligatory arguments, thus increasing the valence of the verb:

- (7) a. Benefactive  
Faatu togg-**al**-na \*(Gallaay) jën wi  
Faatu cook-BEN-FIN Gallaay fish the  
'Faatu cooked the fish for Gallaay'
- b. Instrumental  
Faatu togg-**e**-na jën wi (ag) diwtiir  
Faatu cook-INSTR-FIN fish the with palm.oil  
'Faatu cooked the fish with palmoil'
- c. Causative  
Faatu toog-**loo**-na \*(Gallaay) jën wi  
Faatu cook-CAUS-FIN Gallaay fish the  
'Faatu made Gallaay cook the fish'

## Wolof Background

Wolof verb morphology is almost exclusively suffixing (although overall Wolof displays mixed head-initial and head-final characteristics), with basic SVO word order:

- (8) a. Gàllaay bind-**ló-ól-në** gan gi xale bi taalif<sup>1</sup>  
 gallaay write-CAUSE-BEN-*na* visitor the child the poem  
 ‘Gallaay made the child write the visitor a poem’
- b. Faatu ak Yusëfë dóór-**ënté-waat-ëg-u-ñu**  
 faatu and yusafa hit-RECIP-REP-YET-NEG-3PL  
 ‘Faatu and Yusafa had not hit each other again yet’

Wolof has approximately 30 distinct verbal affixes encoding a number of notions, including applicative, instrumental, reversive, and causative:

- (9) a. xale yi sàcc-**na-ñu** gato bi  
 child the.pl steal-*na*-3PL cake the  
 ‘The children stole the cake’
- b. xale yi sàcc-**i-na-ñu** gato bi **-i-** allative suffix  
 child the.pl steal-allative-*na*-3pl cake the  
 ‘The children went and stole the cake’
- c. xale yi sàcc-**si-na-ñu** gato bi **-si-** illative  
 child the.pl steal-illative-*na*-3pl cake the  
 ‘The children came and stole the cake’
- d. xale yi sàcc-**ante-na-ñu** gato bi **-ante** reciprocal  
 child the.pl steal-*na*-3pl  
 ‘The children stole from each other’
- e. xale yi sàcc-**sàcc-lu-na-ñu** gato bi **V-V-lu** pretendive  
 child the.pl steal-steal-?-*na*-3pl cake the  
 ‘The children pretended to steal the cake’
- f. xale yi **tëj-në-ñu** bunt bi  
 child the.pl close-*na*-3pl door the  
 ‘The children closed the door’
- g. xale yi **tijji-në-ñu** bunt bi reversive  
 child the.pl un.close-*na*-3pl door the  
 ‘The children unclosed the door’

Ka (1981) identifies twenty-five distinct verbal affixes, formulates descriptive generalizations concerning them, gives meanings for each, and provides a template of the verbal complex with twelve slots or affix positions:

<sup>1</sup> Adapted from Buell and Sy (2004), number (15).

(10) Table 1. Template of Verbal Suffixes<sup>2</sup>

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
ar	e <sub>1</sub> i <sub>1</sub> i <sub>2</sub> ali anti andi at aan	u oo	adi antu ante	andoo	aale	i <sub>3</sub> si	al <sub>1</sub>	le lu	e <sub>2</sub>	al <sub>2</sub>	aat ati

The abbreviations in the table in (10) are adapted from Ka (1981, p.8). I have changed some of the names in the translations: *ar* = effort, *e<sub>1</sub>/te* = verbalizer, *i<sub>1</sub>* = inversive, *i<sub>2</sub>* = verbalizer, *ali* = achievement, *andi* = meanwhile, *at* = intensive, *aan* = discontinuative, *u* = middle/reflexive/passive, *oo* = together, *adi* = privative, *antu* = depreciative, *ante* = reciprocal, *andoo* = collective, *aale* = associative, *i<sub>3</sub>* = go, *si* = come, *al<sub>1</sub>* = causative stative, *le* = help x Verb/Verb together/have N + Adj, *lu* = causative benefactive reflexive, *e<sub>2</sub>* = locative/instrumental/objective, *al<sub>2</sub>* = benefactive, *aat* = iterative, *ati* = iterative).

At least some of the homophonous affixes in Table 1 are distinguishable by the fact that they select for different stem forms. For example, Ndiaye (2004)<sup>3</sup> notes the difference between *al<sub>1</sub>*, the causative stative, and *al<sub>2</sub>*, the benefactive:

- (11) a. xonq 'be red'  
 b. xonq-al 'redden (cause to be red)'/ 'be red for (someone)'  
 c. togg-al 'cook for (someone)'/ '\*cause to cook'  
 d. sonn 'be tired'  
 e. sonn-al 'be tired for (someone)'  
 f. son-al 'tire (cause to be tired)'

A purely templatic view of Wolof verbal morphology is inadequate.

- The derivational morphemes interact with other derivational morphemes, the tense/aspect/mood morphology and the linear order of arguments.<sup>4</sup>
- A template is built around the notion that there are 'slots' into which morphemes can be dropped. For Wolof though, the idea of a slot or position, aside from a descriptive tool, is problematic, for at least two reasons. First, items that go in the same slot can co-occur, as *ati* and *aat*, in position XII in (10):

- (12) a. lekk-**ati-waat**-na-ñu  
 eat-iter<sub>1</sub>-iter<sub>2</sub>-na-3pl  
 'They ate for the second time again'  
*aat* 'again', *ati* '2<sup>nd</sup> time, once again'

<sup>2</sup> From Ka 1981 and Torrence 2005.

<sup>3</sup> Ndiaye does not describe these stems alternations in the terms that we use here.

<sup>4</sup> Some of the suffixes in the table are probably polymorphemic. For example, the *-andoo* suffix seems to be composed of the verb root *and* 'go, walk', and the 'together' suffix *-oo*. Similarly, the causative benefactive reflexive suffix *lu* is probably composed of the applicative *-al* and the middle/reflexive/passive *-u*. As a final example, based on its syntactic distribution, *e<sub>2</sub>*, the locative/instrumental/objective, behaves as three distinct affixes.

- b. \*lekk-**aat-ati**-na-ñu  
 eat-iter<sub>2</sub>-iter<sub>1</sub>-na-3pl  
 ‘They ate again for the second time’

Perhaps more problematically, a single item can be iterated:

- (13) lekk-**até-éti**-na-ñu  
 eat-iter<sub>1</sub>-iter<sub>1</sub>-na-3pl  
 ‘They ate again for the second time’

Furthermore, what seems to be verbal morphology can appear with nouns:

- (14) a. [kan] l-a-ñu dóór-**éti-wóón**  
 who xpl-a-3pl hit-again-PAST  
 ‘Who did they hit again?’
- b. [kan-**ati-woon**] l-a-ñu dóór  
 who-again-past xpl-a-3pl hit  
 ‘Who did they hit again?’

Wolof valence changing affixes do not simply have the effect of increasing or decreasing the number of arguments of a predicate. These affixes interact with the linear order of constituents, i.e. the syntax.

- Instrumental Suffix
- (15) a. togg-(e)-na-a yaasa bi **ak kuddu gi**  
 cook-INSTR-FIN-1SG yaasa the with spoon the  
 ‘I cooked the yaasa with the spoon’
- b. \*togg-e-na-a **ak kuddu gi** yaasa bi  
 cook-INSTR-FIN-1SG with spoon the yaasa the  
 ‘I cooked with the spoon the yaasa’
- c. togg-e-na-a yaasa bi **kuddu gi**  
 cook-INSTR-FIN-1SG yaasa the spoon the  
 ‘I cooked the yaasa with the spoon’
- d. togg-e-na-a **kuddu gi** yaasa bi  
 cook-INSTR-FIN-1SG spoon the yaasa the  
 ‘I cooked the yaasa with the spoon’

- (15)a shows that an instrument can be introduced by a preposition, *ak*, with an optional instrumental suffix on the verb, *-e*.
- (15)b shows that the PP containing the instrument must appear on the right edge of CP.
- (15)c-d show that when the instrumental suffix alone is present on the verb, the instrument is free to intervene between the verb and the object.<sup>5</sup>

If the verbal morphology is described solely in terms of slots in a template, it is not clear how such interactions can be captured. However, if the derivational affixes are part of the syntactic component, dependencies and interactions like those in (15) are expected.

<sup>5</sup> Ordinarily, a PP can intervene between a verb and a definite argument.

## Manner Adverbs

Certain types of manner adjuncts trigger a suffix on the verb, *-e*.

This occurs specifically with adverbs of the *ni*-class, a defective noun class.

- (16) a. tabax-\*(e)-na-nu kër gë n-u gaaw-e ni-adverb  
 build-MANN-na-1pl house the cl-u quick-mann  
 ‘We built the house quickly’
- b. tabax-\*(e)-na-nu kër gë b-u gaaw bu-adverb  
 build-mann-na-1pl house the cl-u quick  
 ‘We were quick to build the house’
- c. tabax-\*(e)-na-nu kër gë ci l-u gaaw lu-adverb  
 build-mann-na-1pl house the P c l-u quick  
 ‘The event of our building the house was quick’

However, when A'-extracted, manner adverbs obligatorily trigger the *-e* suffix:

- (17) [b-u gaaw] l-a-nu tabax-\*(e) kër gë Fronted bu-adverb  
 cl-u quick xpl-a-1pl build-mann house the  
 ‘It’s quickly that we built the house’

## Applicatives

- (18) daje-na-a ak moom  
 meet-a-1sg with 3sg  
 ‘I met him’

- When the object of the preposition *ak* is extracted, the ‘applicative’ suffix *-al* appears on the verb.

- (19) kan l-a-ñu daje-el?  
 who xpl-COP-3pl meet-APPL  
 ‘Who did they meet?’

- The applicative and preposition are in complementary distribution.

- (20) \*daje-el-na-a ak moom  
 meet-APPL-na-1sg with 3sg  
 Intended: ‘I met him’

- The applicative is incompatible with the presence of an object.

- (21) \*daje-el-na-a-ko  
 meet-appl-na-1sg-3sg  
 ‘I met him’

- (22) \*daje-el-na-a moom  
 meet-appl-neut-1sg 3sg  
 Intended: ‘I met him’

- Preposition stranding is ungrammatical.  
(23) \*kan l-a-ñu daje ak?  
who xpl-COP-3pl meet with  
Intende: ‘Who did they meet?’
- If a Wh is not in the left periphery, applicative is impossible,  
(24) \*dém̄b l-a-ñu daje-el kan?  
yesterday xpl-COP-3pl meet-appl who  
‘Who did they meet YESTERDAY?’
- ...even if the Wh has been moved away.  
(25) \*dém̄b l-a-ñu daje-el c-a lekkool bi kan  
yesterday xpl-COP-3pl meet-appl cl-dist school the who  
‘Who did they meet at the school YESTERDAY?’
- If Wh is not in the left periphery, then the preposition is obligatory.  
(26) démb l-a-ñu daje c-a lekkool bi ak kan ?  
yesterday xpl-COP-3pl meet cl-dist school the with who  
‘Who did they meet at the school YESTERDAY?’
- In addition, the preposition can be stranded.  
(27) démb l-a-ñu daje ak c-a lekkool bi kan?  
yesterday xpl-COP-3pl meet with cl-dist school the who  
‘Who did they meet at the school YESTERDAY?’
- Problem: Why is preposition stranding allowed in certain cases?
- Properties to be accounted for:
  - a. complementary distribution of applicative and preposition
  - b. neither cleft nor fronted Wh allow preposition stranding
  - c. applicative is only compatible with left peripheral Wh
  - d. Wh in situ is not compatible with applicative
  - e. Wh in situ is compatible with preposition stranding
  - f. aside from Wh in situ, preposition stranding is not possible

### Ordering of Affixes

Consider first the order of the instrumental and causative affixes:

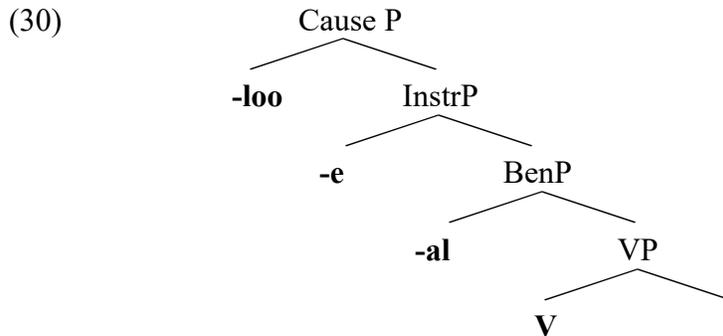
- (28) a. Gàllaay dóór-**e-loo**-na Faatu xeer bi (ag) bant ✓instr...caus  
Gallaay hit-INSTR-CAUS-FIN Faatu stone the with stick  
‘Gallaay made Faatu hit the stone with a stick’
- b. \*Gàllaay door-**loo-e**-na Faatu xeer bi (ag) bant \*caus...instr  
Gallaay hit-CAUS-INSTR-FIN Faatu stone the with stick

The instrumental affix must precede the causative affix.

The benefactive and instrumental affixes display a strict linear ordering:

- (29) a. Gàllaay togg-**al-e**-na Faatu yàpp diwtiir ✓ben...instr  
 Gallaay cook-BEN-INST-FIN Faatu meat palm.oil  
 ‘Gallaay cooked Faatu some meat with palm oil’
- b. \*Gàllaay togg-**e-al**-na Faatu yàpp diwtiir \*instr...ben  
 Gallaay cook-ISTR-BEN-FIN Faatu meat palm.oil

Based on the surface affix orderings we have seen to this point, we can deduce the following hierarchy of low functional heads:



The tree in (30) results from reasoning by transitivity. CAUS is higher than INST and INST is higher than BEN. Therefore, CAUS must be higher than BEN. We thus predict that if CAUS and BEN are affixes on a single verb, the order will be: V-BEN-CAUS, the mirror order. However, this is *not* the observed order of affixes:

- (31) a. Gàllaay bind-**loo-al**-na gan g-i xale y-i taalif  
 Gallaay write-CAUS-BEN-FIN guest CL-the child CL.PL-the poem  
 ‘Gallaay made the children write the visitor a poem’
- b. \*Gàllaay bind-**al-loo**-na gan g-i xale y-i taalif  
 Gallaay write-BEN-CAUS-FIN guest CL-the child CL.PL-the poem

The Wolof affix order data is strongly reminiscent of the so-called ‘transitivity failures’ (Van Craenenbroeck (2006) and Zwart (2007)).

Atransitivity failure is said to occur when it is established that A precedes B and B precedes C, but A cannot linearly precede C.

Bobaljik (1999), and Nilsen (2004) report on similar failures of transitivity in the domain of adverbs.

Nilsen shows first that ‘possibly’ must precede ‘not’ in Norwegian:

- (32) a. ståle har **muligens ikke** spist hvetekakene sine (= Nilsen (4a))  
 S has possibly not eaten the.wheaties his  
 ‘Stanley possibly hasn’t eaten his wheaties’
- b. \*ståle har **ikke muligens** spist hvetekakene sine (= Nilsen (4b))  
 S has not possibly eaten the.wheaties his

He then establishes that ‘not’ must precede the adverb ‘always’:

- (33) a. ståle hadde **ikke alltid** spist hvetekakene sine (= Nilsen (5a))  
 S had not always eaten the.wheaties his  
 ‘Stanley hadn’t always eaten his wheaties’
- b. \*ståle hadde **alltid ikke** spist hvetekakene sine (= Nilsen (5b))  
 S had always not eaten the.wheaties his

Given that *possibly* > *not* and that *not* > *always*, by transitivity, we expect that *possibly* must precede *always*.

- (34) dette er et morsomt, gratis spill hvor spillerne **alltid muligens** er et klikk fra å vinne \$1000! (= Nilsen (6a) plus (7a))  
 ‘This is a fun, free game where you’re **always possibly** a click away from winning \$1000!’<sup>6</sup>

Valency *decreasing* affixes are also found in Wolof:

- Wolof
- (35) a. jox-naa            Isaa tééré bi  
       give-1SG.PERF isaa book the  
       ‘I gave isaa the book’
- b. jox-e-naa            (\*Isaa) tééré bi  
       give-E-1SG.PERF isaa book the  
       ‘I gave (away) the book’, ‘I donated the book’

There is no passive in Wolof

## Buell and Sy

An attempt to *syntacticize* the valency-increasing affixes of Wolof.

Assumptions:

- Mirror Principle (Baker)

Causative/Instrumental structures

Wolof has two type of causative constructions.

Analytic causatives are those in which there is a predicate expressing “cause” and another predicate expressing the “effect”:

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<sup>6</sup> Nilsen says that, ‘*muligens* does not have to precede *alltid*’ (p.10). He does not give an example where *muligens* precedes *alltid*, nor does he discuss if there is an interpretive difference between the two orders.

- (36) **Cause**                      **Effect**  
 [ I    make    [ the children    study ] ]

In a morphological causative, there is one complex (verbal) form that encodes both the cause and the effect:

- (37) a. The road is wide.  
 b. The workers widened the road.  
 c. The workers made the road wide.

Why pursue a syntactic approach to morphology? Consider the analytic causative cases discussed in B&S:

- (38) a. The teacher made the pupil write the essay with a pen.  
 b. With a whip, the teacher made the pupil write the essay.

Similar effects are seen in morphological causatives:

- (39) a. I opened the window  
 b. I reopened the window

B&S are concerned with the ordering of affixes:

- (40) a. Gállaa y    dóór    e    loo    na    Faatu    xeer    bi    (ag)    bant.  
           Gállaa y    hit    INSTR CAUS PAST    Faatu    stone    the    with    stick  
           “Gállaa y made Faatu hit the stone with a stick.”
- b. \*    ...    dóór            loo    e            na            ...  
           hit CAUS INSTR PAST

They also show that there are interpretive effects that go along with the morphological facts:

- (41)
- a. Jàngalekat            bi    bind    e            loo    na    ndongo    li    taalif    bi    kereyo\_.  
    teacher                    the    write    INSTR CAUS PAST    student    the    poem    the    pen  
    “The teacher made the student write the poem with a pen.
- b. \*    Jàngalekat            bi    bind    e            loo    na    ndongo    li    taalif    bi    yar.  
    teacher                    the    write    INSTR CAUS PAST    student    the    poem    the    whip  
    “The teacher made the student write the poem with a whip.”

They also show that benefactive and instrumental morphemes only occur in one order:

- (42) a. GállaaY togg al e na Faatu yàpp diwtiir.  
 GállaaY cook BEN INSTR PAST Faatu meat palm.oil  
 “GállaaY cooked Faatu some meat with palm oil.”  
 \*“(G. cooked meat for Faatu in such a way that Faatu used palm oil.”

- b. \* ... togge al na ...  
 cook INSTR BEN PAST

Benefactive and causative only occur in one order too:

- (43) a. GállaaY bind loo al na gan gi xale yi taalif.  
 GállaaY write CAUS BEN PAST visitor the child the poem  
 “GállaaY made the children write the visitor a poem.”

- b. \* ... bindal loo na ...  
 write BEN CAUS PAST