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LE VERBE CONJUGUE EN TEM*

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Cet article est une description de la morphologie verbale en tem, langue gur du Togo en Afrique de l'Ouest. Les infinitifs verbaux sont divisés en 17 types (première section) d'après leur schème syllabique-tonal et leur façon de former d'autres radicaux. Les morphèmes (deuxième section) sont décrits en termes de phonèmes, archiphonèmes, tons, zéros et jonctions. Les combinaisons possibles des radicaux avec les morphèmes sont présentées sous forme de tableau, suivi d'explications détaillées et d'examples (troisième et quatrième sections). Une cinquième section a été ajoutée pour présenter sommairement les processus tonals en tem. Sont d'intérêt particulier, les tons volants qui font partie des morphèmes.

0. Introduction

Le tem (ou kotokoli) est une langue de la famille gur de la branche Niger-Congo de J. Greenberg [1963]. Le tem appartient au groupe gur-central, au sous-groupe gununsi, dont il forme la branche est avec le kabiyè, le lama, le lukpa (dompago), le ḍelo, le cala et le bago [Bendor-Samuel 1971]. Les Tem habitent la région centrale du Togo et la région d'Alédjo-Koura au Bénin. Compte tenu d'importantes colonies au Ghana, le nombre total des Tem pourrait s'élever à 300.000.

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Le Tem a 25 phonèmes consonantiques: p, b, t, d, ɖ, c, j, k, g, kp, gb, f, v, s, z, m, n, ny, ŋ, ŋm, l, r, w, y, h; 9 phonèmes vocaliques: i, e, u, o, a, ɪ, ɛ, ʊ, ɔ; 2 tonèmes: H et B (haut et bas). Le ton H est représenté par un accent aigu (´), le ton B n'est pas marqué. Toute nasale non suivie d'une voyelle porte un ton B si elle n'est pas marquée d'un ton H. Les règles de la perturbation des tons sont données dans la section 5.1.

Dans l'analyse, les symboles suivants sont aussi utilisés.

(a) dans les radicaux:

v voyelle

c consonne

n nasale

La séquence phonologique vv (double voyelle) est réalisée phonétiquement comme une voyelle longue: vv => [v:] . Si les deux voyelles (toujours de timbre identique) portent des tons différents, le résultat phonétique est un ton modulé: v́v => [v̂:] ; vv́ => [v̌:] . En finale d'énoncé, la modulation tombante a tendence à se prononcer plus courte: v́v# => [v̂.] .

(b) dans les morphèmes:

v voyelle copiante (2.1.1)

' ton copiant (2.1.2.2)

¯ ton opposant (2.1.2.3)

Ø zéro (2.1.3)

/ } jonctions (2.1.4)

- }

Chaque forme verbale conjuguée est constituée d'un radical, qui représente le verbe en question, précédé (exceptionnellement suivi) d'un ou plusieurs morphèmes (voir définition section 2), qui apportent des précisions concernant l'action, telles que sujet, aspect, répétition, négation, etc.

Le verbe conjugué est donc présenté en quatre parties:

1. Le radical
2. Les morphèmes
3. Les formes conjuguées: formes de base
4. Les modalisations.

La section 5 donne une vue d'ensemble des processus tonals en tem.

1. Le radical verbal

Le radical verbal a été analysé comme ayant trois formes, appelées Rad_1, Rad_2, et Rad_3. Le choix de ces formes pour chaque verbe sera présenté dans la section 3, Tableau 5. Retenons seulement que:

Rad_1 = l'infinitif;
Rad_2 = l'impératif;
Rad_3 n'apparaît pas en forme libre.

Dans un premier temps, j'ai repris la classification de Tchagbalè [1976], qui regroupe les verbes selon leur structure syllabique à l'infinitif. (On notera que le schème tonal est compris dans la structure syllabique, la syllabe étant constituée de consonnes, de voyelles, et de tons. Par example, cv́vcv ≠ cvvcv́ , cv́v ≠ cv́v , etc.) Cette classification permet de constater que tous les verbes à ton H final forment les Rad_2 et Rad_3 de la même façon (section 1.1.1). Cependant, les verbes à ton B final ne se prêtent pas à une telle généralisation.

Il a été nécessaire de scinder en deux le groupe des verbes de structure cvcv́v, étant donné que, dans ce cas, il existe deux façons de former les Rad_2 et Rad_3. Les verbes ont donc été classés en 17 types selon ces deux critères, à savoir:

- la structure syllabique de l'infinitif (y compris le schème tonal)
- la façon de former les deux autres formes du radical.

Le premier critère, bien que non indispensable à une description de la conjugaison, a été retenu pour des raisons statistiques, les types 1-7, par exemple, représentant plus de 55% de verbes (voir Tableau 1), la colonne intitulée %).

Ces 17 types sont d'abord présentés sous forme de tableau (Tableau 1) et ensuite décrits en détail (1.1).

Tableau 1: Les 17 types

N°.	Rad_1 (= inf.)	Rad_2 (= impér.)	Rad_3	Exemple	%
1.	cvv́	cvv	cvv	sɛɛ́	7.75
2.a	cvcv́	cvcv	cvcv	bɪsí	13.85
b	cvŋ́ (*cvŋí)	cvŋ	cvŋ	naŋ́ (naŋí)	2
3.a	cvvcv́	cvvcv	cvvcv	fɪɪzí	23.88
b	cvvŋ́ (*cvvŋí)	cvvŋ	cvvŋ	bɛɛŋ́ (bɛɛŋí)	0.25
c	cvvcv́(m)	cvvcv	cvvcv	feerím	0.76
4.	cvncv́	cvncv	cvncv	lindí	0.76
5.a	cvcvcv́	cvcvcv	cvcvcv	sulukí	5.7
b	cvcvŋ́ (*cvcvŋí)	cvcvŋ	cvcvŋ	kpɛlɛŋ́ (-ŋí)	unique
6.	cvcvvcv́	cvcvvcv	cvcvvcv	walaazí	0.88
7.	cvcvncv́	cvcvncv	cvcvncv	bɛrɛndí	0.63
8.	cvv́cv	cvv́cv	cvv́cv	fɔ́lɪ	5.7
9.	cvv́ńcv	cvv́ńcv	cvv́ńcv	suúńdi	0.76
10.a	cvcv́cv	cvcv́cv	cvcv́cv	fɔrósɪ	5.3
b	cvcv́ŋ (*cvcv́ŋɪ)	cvcv́ŋ	cvcv́ŋ	yɛlɛ́ŋ (yɛlɛ́ŋɪ)	0.6
11.	cvcv́v́cv	cvcv́v́cv	cvcv́v́cv	biláázɪ	1.27
12.	cvcv́ńcv	cvcv́ńcv	cvcv́ńcv	buráńdɪ	0.88
13.a	cvcv́v	cvcv́	cvcv́	kɔrílɪ	7.75
b	cIwv́v	cvv́ (*cvwv́)	cvv́ (*cvwv́)	tuwúu	
c	-náa[1]	-ná	-ná	kɔnáa, bɪsɪnáa	
14.a	cvcv́v	cvcA	cvcí	salílɪ	10
b	cvwv́v	cvv (*cvwA)	cvwí	tɔwúʊ	
c	cvcv́m	cvcA	cvcí	farím	unique
15.	cv́v	cv́	cv́v	fáa	4
16.	cv́m	cv	cvḿ	lám	5.4
17.	cv́v́cv	cvv	cvv	cáádɪ	0.88

[1]Il ne s'agit pas vraiment d'un radical, puisqu'il contient le suffixe -na . Comme la combinaison radical + na double le nombre des verbes, les verbes 13 c ne sont pas comptés dans les pourcentages.

1.1. Description des types. Les verbes des types 1 à 7 se terminent par un ton H à l'infinitif (Rad_1). Ils forment les radicaux 2 et 3 en perdant ce ton H. Ils ont des formes identiques pour Rad_2 et Rad_3.

1.	cvv́	sɛɛ́	sɛɛ	sɛɛ	'saluer'
2a.	cvcv́	bɪsɪ́	bɪsɪ	bɪsɪ	'tourner'
3a.	cvvcv́	baazɪ́	baazɪ	baasɪ	'commencer'
3c.	cvvcv́(m)	Ces verbes ont un m qui apparaît facultativement dans le Rad_1, mais jamais dans Rad_2 ou Rad_3.			
		feerɪ́m	feeri	feeri	'dire (rapporter)'
	ou	feerɪ́	feeri	feeri	
4.	cvncv́	lindɪ́	lindi	lindi	'trier dans l'eau'
5a.	cvcvcv́	sulukɪ́	suluki	suluki	'rassembler'
6.	cvcvvcv́	walaazɪ́	walaazɪ	walaazɪ	'élargir'
7.	cvcvncv́	bɛrɛndɪ́	bɛrɛndɪ	bɛrɛndɪ	'pendre lourdement'

Une exception a été constaté pour 2a: kɔnɪ́ 'venir' reprend un ton H au Rad_3.

	kɔnɪ́	kɔnɪ	kɔnɪ́	'venir'

Les verbes 8 à 12 sont invariables, leur Rad_1, Rad_2 et Rad_3 étant identiques.

8.	cvv́cv	fɔ́lɪ	fɔ́lɪ	fɔ́lɪ	'porter sur l'épaule'
9.	cvv́ńcv	suúńdi	suúńdi	suúńdi	'marcher dans les hautes herbes'
10a.	cvcv́cv	fɔrɔ́sɪ	fɔrɔ́sɪ	fɔrɔ́sɪ	'gâter'
11.	cvcv́v́cv	bilɛ́ɛ́zɪ	bilɛ́ɛ́zɪ	bilɛ́ɛ́zɪ	'rouler'
12.	cvcv́ńcv	burɛ́ńdɪ	burɛ́ńdɪ	burɛ́ńdɪ	's'effriter'

Les verbes 2b, 3b, 5b et 10b se comportent comme 2a, 3a, 5a et 10a respectivement, si on considère que leur ŋ final est la réalisation de la syllabe ŋɪ , dont la voyelle a été perdue, le ton étant maintenant réalisé sur la nasale ŋ .

2b.	cvŋ́	*ɖaŋɪ́	*ɖaŋɪ	*ɖaŋɪ	est devenu
		ɖaŋ́	ɖaŋ	ɖaŋ	'attendre'

3b.	cvvŋ́	*bɛɛŋí	*bɛɛŋɪ	*bɛɛŋɪ	est devenu
		bɛɛ́ŋ	bɛɛŋ	bɛɛŋ	'regarder'
5b.	cvcvŋ́	*kpɛlɛŋí	*kpɛlɛŋɪ	*kpɛlɛŋɪ	est devenu
		kpɛlɛ́ŋ	kpɛlɛŋ	kpɛlɛŋ	'apprendre'
10b.	cvcv́ŋ	*yɛlɛ́ŋɪ	*yɛlɛ́ŋɪ	*yɛlɛ́ŋɪ	est devenu
		yɛlɛ́ŋ	yɛlɛ́ŋ	yɛlɛ́ŋ	'souffrir'

Les verbes des types 13 et 14 n'ont des structures différentes que dans le Rad_2.

13a. cvcv́v — perd sa voyelle finale pour former Rad_2 et Rad_3.

kɔrɪ́ɪ	kɔrí	kɔrí	'cueillir'

14a. cvcv́v — perd sa dernière voyelle pour former Rad_2 et Rad_3, mais dans Rad_2 le ton H devient B et la voyelle de la deuxième syllabe se fait identique à la première; dans Rad_3 la voyelle fermée et le ton H sont retenus.

salɪ́ɪ	sala	salí	'tomber'

Les verbes des types 13b et 14b se comportent comme 13a et 14a respectivement, si on considère la règle suivante: vwv → vv dans le cas de deux voyelles identiques, tandis que w est retenu dans les infinitifs (Rad_1) par convention orthographique.

13b. cIwv́v — Lorsque la voyelle de la première syllabe est une voyelle fermée (i, ɪ, u, ou ʊ, représentées ici par le symbole I), w disparaît dans Rad_2 et Rad_3.

tuwúu	*tuwú	*tuwú	devient
tuwúu	tuú	tuú	'faire cuire'

14b. cvwv́v — w disparaît entre deux voyelles identiques, ce qui est le cas de Rad_2: *tɔwɔ devient tɔɔ .

tɔwʊ́ʊ	tɔɔ	tɔwʊ́	'mastiquer'

Si en plus la première voyelle est fermée, toutes les voyelles

étant ainsi identiques, w disparaît aussi dans Rad_3.

suwúu	*suwu	*suwú	devient
suwúu	suu	suú	'planter'

13c. -náa — Ce type inclut tous les verbes qui se terminent par le suffixe -náa .

cv-náa	kɔnáa	'amener'
cvv-náa	bɛɛnáa	'regarder'
cvcv-náa	bɪsɪnáa	'ramener'
cvvcv-náa	laazɪnáa	'accompagner avec'
cvcvcv-náa	sulukináa	'rassembler avec'
cvcvncv-náa	bɛrɛndɪnáa	'pendre avec'
cvcvvcv-náa	walaazɪnáa	'élargir avec'

Tous perdent leur voyelle finale pour former Rad_2 et Rad_3.

14c. cvcv́m — se comporte comme 14a, comme si m était une voyelle.

farím	fara	farí	'cultiver'

15. cv̋v — Rad_2 n'a qu'une seule voyelle dont le ton est copiant (voir section 2.1.2.2); Rad_3 ressemble à Rad_1, mais il a un comportement tonal différent (voir section 1.4).

fáa	fa̋	fáa	'donner'

16. cv̋m — perd m et le ton H pour former Rad_2. Pour Rad_3 m est retenu mais le schème tonal est inversé pour devenir cvḿ

lám	la	laḿ	'faire'

17. cv̋v̋cv — perd ses tons H et sa dernière syllabe pour former Rad_2 et Rad_3, qui ressemblent ainsi à ceux du type 1.

cáádɪ	caa	caa	'chercher'

Il existe quelques verbes qui n'appartiennent à aucun de ces 17 types. Ils sont presque tous défectifs.

(a) les verbes en -ɖE :

boɖé	bo	bolí	'aller'
kɔnɖɛ́	—	—	'venir'

(b) les verbes en -wɔ́ɔ:

sewɔ́ɔ	—	—	'courir'
lewɔ́ɔ	—	—	's'étendre'
lʊwɔ́ɔ	—	—	'lutter'

1.2. Rad$_1$ et Rad$_3$ du type verbal 15. Cette section, qui n'est qu'une sorte de parenthèse, est placée ici car elle concerne le radical verbal. Mais comme les exemples sont des formes conjuguées, contenant des morphèmes, il sera plus facile de la comprendre après lecture des sections 2, 3 et 5.

cv̌v	cv̀	cv́v
1	2	3

Rad$_1$ et Rad$_3$ sont identiques en forme, mais l'influence qu'ils exercent sur le ton de la syllabe suivante est différente.[2]

(1) wa- ʼn- mʊ́ʊ → wánmʊ́ʊ [wanmʊʊ̀] 'il achète(ra)'
3s ina 15:1

(2) wa- ʼń- mʊ́ʊ → wáńmʊ́ʊ [wanmʊʊ] 'il a déjà acheté'
3s i:a 15:3

L'inaccompli prenant Rad$_1$ et l'insistance sur l'accompli Rad$_3$, les exemples ci-dessus démontrent (par la courbe phonétique) que ces deux radicaux se comportent de la même façon en position finale de proposition: il s'agit donc bien d'un ton H suivi d'un ton B dans les deux cas.

(3) wa- ʼn- mʊ́ʊ tɪmátɪ [wanmʊʊtɪmatɪ̌] 'il achète(ra) des tomates'
3s ina 15:1 tomates

[2]Voir Tableau 4 (p. 16) pour la liste complète des morphèmes aussi bien que la signification des abbréviations dans les exemples.

(4) wa- ʼń- mʊ́ʊ tɪmátɪ [wanmʊʊtɪmatɪ] 'il a déjà acheté des tomates'
3s i:a 15:3

Les deux exemples ci-dessus démontrent que cv́v Rad_1 ne relève pas le ton B de la première syllabe du mot suivant, tandis que cv́v Rad_3 relève le ton B de la première syllabe du mot suivant (tɪmátɪ).

(5) wa- ʼn- fáa → wánváa [wanvaa] 'il donne(ra)'
3s ina 15:1

(6) wa- ʼń- fáa → wáńváa [wanvaa] 'il a déjà donné'
3s i:a 15:3

(7) wánváa ma [wanvaama] 'il me (le) donne(ra)'

(8) wáńváa ma [wanvaama] 'il me (l') a déjà donné'

Les deux examples ci-dessus prouvent (par la courbe phonétique) que cv́v Rad_1 ne relève pas le pronom complément, tandis que cv́v Rad_3 le relève; c'est-à-dire qu'il lui donne un ton H réel qui relèvera le ton B de la première syllabe du mot suivant, comme on le verra dans les deux exemples suivants.

(9) wánváa ma tɪmátɪ [wanvaamatɪmatɪ] 'il me donne(ra) des tomates'

(10) wáńváa ma tɪmátɪ [wanvaamatɪmatɪ] 'il m'a déjà donné des tomates'

(Dans l'orthographe les tons sur les pronoms complément ne sont jamais écrits.)

2. Les morphèmes

Le terme morphème est utilisé ici pour indiquer tous les éléments du verbe conjugué en dehors du radical verbal. Selon la terminologie française [Martinet 1969], on distingue à l'intérieur des monèmes entre lexèmes (monèmes lexicaux) et morphèmes (monèmes grammaticaux).

2.1. Les éléments des morphèmes. Pour décrire les morphèmes, certains symboles seront utilisés qui ne figurent pas dans l'orthographe. Ce sont les tons volants, copiants et opposants, les zéros, et les jonctions. Ces symboles sont expliqués ci-dessous avant la présentation de la liste exhaustive des morphèmes.

2.1.1. Les segments. Rien de spécial n'est à signaler pour les consonnes. Pour les voyelles, on ne rencontre dans les morphèmes que a , ɪ et ʊ , et le symbole v (voir section 2.2). Les symboles a et ɪ représentent les archiphonèmes à un trait: A ouvert, I fermé, tandis que ʊ représente la voyelle proprement dite. Le symbole v̈ signifie voyelle copiante, c'est-à-dire qui prend le timbre de la voyelle précédente.

Les archiphonèmes A et I sont réalisés selon le tableau suivant.

Tableau 2: Les archiphonèmes vocaliques avec leurs réalisations

A	a __/a,ɪ,ʊ		
	ɛ __/ɛ		
	ɔ __/ɔ		
	e __/e		
	o __/o		
		(variation dialectale)	
I	ɪ __/a,ɛ,ɪ,ɔ,ʊ	ɪ __/a,ɛ,ɪ	
	i __/e,i,o,u	i __/e,i	
		ʊ __/ɔ,ʊ	
		u __/o,u	

2.1.2. Les tons. Le ton H est représenté par un accent aigu (́) dans la représentation des morphèmes comme dans l'orthographe. Le ton B n'est jamais marqué dans l'orthographe, mais dans la représentation des morphèmes il y a deux cas où le ton B est représenté par un accent grave (̀): (a) le ton volant B, par exemple `raa-' 'irréel positif'; (b) sur un segment qui refuse tout ton H, même un ton H volant qui voudrait s'y poser, par exemple, ǹ- '2ème personne du singulier 3ème série'; '≠kà≠' 'négation 2ème série'.

2.1.2.1. Le ton volant. Dans la représentation des morphèmes nous rencontrons des tons (H ou B) suspendu en l'air, c'est-à-dire sans support segmental. Ces tons "volants" se réalisent sur la syllabe contiguë, dont ils remplacent le ton original.

(11) má- 'n- baazí → mánbaazí 'je commence(rai)'
ls ina 3:l

Le ton volant de ˈn- se place sur má- ; comme má- a déjà un ton H, rien ne change.

(12) ba- ˈn- baazí → bánbaazí 'ils commence(ro)nt'
3p ina 3:1

Le ton volant de ˈn- se place sur ba- , dont il remplace le ton B.

L'exemple suivant (13) démontre que le ton H fait réellement partie du morphème ˈn- et non de ba- . Lorsque la négation ta≠ s'insère entre la personne et l'inaccompli, le ton volant de ˈn- se pose sur ta≠ .
ina neg

(13) ba- ta≠ ˈn- baazɪ → badánbaazɪ 'ils ne commencent pas'
3p neg ina 3:3

(Pour le changement de Rad_1 en Rad_3, voir section 3.)

(14) wa- v̀-ˈ la → waalá 'il (l') a fait'
3s acc 16:2

Le ton H volant de v̀-ˈ 'accompli' se pose sur la , dont il remplace le ton B.

L'exemple suivant (15) démontre que ce ton H n'appartient pas au radical la . Lorsque la marque de distance ka- s'insère entre l'accompli et le radical, le ton volant se pose sur ka- .
dist

(15) wa- v̀-ˈ ka- la → waagála 'il (l') a fait au loin'
3s acc dist 16:2

Si le ton volant se pose sur une syllabe à deux segments porteurs de ton (vv ou vn), les deux sont affectés par le ton volant, sauf en position finale de mot.

(16) wa- v̀-ˈ baazɪ → waabáázɪ 'il a commencé'
3s acc 3:2

Le ton H volant de v̀- s'est posé sur les deux voyelles de baazɪ .

(17) wa- v̀-ˈ fʊn- baazɪ → waavʊ́nbaazɪ 'il a commencé avant'
3s acc ant 3:3

Le ton H volant de v̀-ˈ s'est posé sur ʊ et n de fʊn- 'antérieur'.

(18) wa- v̀-́ baa → waabáa 'il a dansé'
3s acc 17:2

Comme baa est la syllabe finale du mot, le ton H volant de v̀-́ ne se place que sur le premier a .

Tous les tons H volants, qui se trouvent à droite d'un morphème, ont un comportement commun. Il s'agit des morphèmes suivants:

v̀-́	accompli
Ǿ	subjonctif
ˋraa-́	irréel-positif
́fʊn-́	irréel-antérieur
́≠ta≠́	irréel-négatif
́≠kà≠́	négation$_2$
ɪ-́	2ème personne pluriel 3ème série

Si le ton volant qui se trouve à droite du morphème est précédé par un ton B, il n'est pas réalisé sur les Rad$_2$ et Rad$_3$ des verbes 8 à 13, ni sur le Rad$_2$ de 15.

(19) ba- v̀-́ fɔrɔ́sɪ → bɔɔvɔrɔ́sɪ 'ils sont gâtés'
3p acc 10:2

(20) ba- v̀-́ fà → baava 'ils ont donné'
3p acc 15:2

mais

(21) ɖá- v̀-́ fɔrɔ́sɪ → ɖɔ́ɔ́vɔ́rɔ́sɪ 'nous sommes gâtés'
1p acc 10:2

(22) ɖá- v̀-́ fà → ɖáává 'nous avons donné'
1p acc 15:2

Dans les deux derniers exemples le ton volant en question est précédé par un ton H (le ton copiant de v̀-́ devenu H après ɖá-) et c'est donc réalisé normalement.

2.1.2.2. Le ton copiant. Le ton copiant est représenté par un trait vertical ('), qui indique que la syllabe en question aura le même ton que la syllabe précédente, par exemple, le Rad$_2$ des verbes du type 15 cv̀ et le morphème v̀-́

'accompli'.

(23) má- v̀-́ baazɩ → máábáázɩ 'j'ai commencé'
1s acc 3:2

La voyelle de v̀-́ (est devenu a et) a copié le ton H de má- .

(24) wa- v̀-́ baazɩ → waabáázɩ 'il a commencé'
3s acc 3:2

La voyelle v̀-́ a copié le ton B de wa- .

(25) má- v̀-́ fá → máává 'j'ai donné'
1s acc 15:2

La voyelle v̀-́ a copié le ton H de má- et fá a ensuite copié le ton H résultant; il a en plus reçu le ton H volant de v̀-́ , ce qui ne change plus rien.

(26) wa- v̀-́ fá → waava 'il a donné'
3s acc 15:2

La voyelle v̀-́ a copié le ton B de wa- ; fá a copié le ton B résultant et a refusé le ton volant de v̀-́ (voir dernier paragraphe de la section 2.1.2.1 sur le comportement des tons volants).

(27) wa- v̀-́ ka- fá → waagává 'il a donné au loin'
3s acc dist 15:2

La voyelle v̀-́ a copié le ton B de wa- ; son ton H volant s'est posé sur ka- et a été copié par fá .

Exception: le ton copiant de v̀-́ 'accompli' est toujours réalisé B devant le morphème ka- 'distance'.

(28) má- v̀-́ ka- mʊ̀ → máagámʊ̀ 'j'ai acheté au loin'
1s acc dist 15:2

2.1.2.3. Le ton opposant. Le ton opposant est representé par un trait horizontal (¯) qui indique que la syllable en question aura un ton différent de la syllabe précédente; par exemple le morphème tā 'négation répétée'.

(29) ɩ- ta/ sala tā → ɩdasala tá 'il n'est pas encore tombé'
3s nég 14:2 nég$_r$

(30) ɩ- ta≠ sɛlí tā → ɩdɛsɛlí ta 'il n'a pas encore soulevé'
3s nég 13:2 nég$_r$

Après le ton B de sala , tā a pris un ton H, et après le ton H de sɛlí , il a pris un ton B.

2.1.3. Les zéros. Les zéros sont représentés par Ø. Ils servent de point d'atache à un ton volant avec lequel ils forment les morphèmes suivants:

Ø′ 'subjonctif'
′Ø 'exhortatif'

La seule fonction de zéro est d'indiquer si le ton volant se place sur la syllabe précédente (à gauche) ou sur la syllabe suivante (à droite).

(31) ɩ≠ Ø′ kɔnɩ ɩkɔ́nɩ 'qu'il vienne'
3s sub 2:2

(32) ɩ≠ ′Ø kɔnɩ ɩ́kɔnɩ 'il faut qu'il vienne'
3s exh 2:2

2.1.4. Les jonctions. Les signes - et ≠ , qui accompagnent les segments, font partie des morphèmes. Ils indiquent l'influence qu'a le morphème en question sur la consonne suivante: si le morphème se termine par - , la consonne suivante devient sonore; si le morphème se termine par ≠ , une consonne sourde suivante restera sourde; si le morphème commence par ≠ , sa consonne initiale reste toujours sourde, même aprés un morphème qui se termine par - .

2.2.1. Liste des morphèmes. Le Tableau 3 présente des morphèmes verbaux. Chaque morphème est sous-titré de l'abréviation de son sens.

2.2.2. La personne. Dans chaque verbe conjugué il n'y a qu'un seul morphème qui indique la personne, mais il est choisi dans le Tableau 4, p. 16, qui présente 30 possibilités.

La marque de personne dans le verbe conjugué exprime le sujet de l'action. C'est donc ce sujet qui en détermine le nombre, la personne et le genre; mais la série sera déterminée par le mode du verbe (voir section 3, Tableau 5).

Tableau 3: Les morphèmes verbaux

inaccompli	ˈn- ina
accompli	v̀-ˈ acc
insistance sur l'accompli	ˈn̄- i:a
subjonctif	øˈ sub
exhortatif	ˈø exh
impératif	ø imp
statif	-áa st
irréel-positif	`raa-ˈ irr-pos
irréel-négatif	ˈ≠ta≠ˈ irr-nég
irréel-antérieur	ˈ≠fʊn-ˈ irr-ant
négation$_1$	ta≠ nég
négation$_2$	ˈ≠kà≠ˈ nég
négation$_3$	raa- nég
négation répétée	tā nég$_r$
répétition	ta≠ tara- rép rép
habituel	tárá-‴ hab
emphatique	tan- emph
antérieur	fʊn- ant
distance	ka- dist
insistance sur le sujet	`kʊ nā i:s i:s
personne	voir section 2.2.2

Tableau 4: La personne

nombre	pers	genre	1ère série	2ème série	3ème série
singulier	1		má-	ma-	
	2		nyá-/ń-	n-	ø/ǹ-
	3	I	wa-/ɩ-	ɩ≠	
		II	kɩ-	kɩ≠	
		III	ka-	kɩ≠	
		IV	ɖɩ-	ɖɩ≠	
indénombrable		V	bɩ-	bɩ≠	
pluriel	1		ɖá-	ɖɩ≠	
	2		mí-	ɩ≠	ɩ-'
	3	I	ba-	ba≠	
		II	tɩ-	tɩ≠	
		III	sɩ-	sɩ≠	
		IV	a-	a≠	

(a) Le nombre

Le sujet de l'action peut être singulier, pluriel, ou indénombrable. Cette dernière catégorie correspond au V^{e} genre, qui contient des mots comme l'eau, l'huile, etc., et aussi l'influence impersonnelle.

(b) La personne

Ici nous trouvons les trois personnes conventionnelles:

1ère personne: le locuteur
2ème personne: l'interlocuteur
3ème personne: une tierce personne

(c) Le genre

A la troisième personne nous trouvons en tem une subdivision en 5 genres, dont I, II, III et IV ont un singulier et un pluriel, et V est indénombrable.

(d) La Série

Nous avons établi trois séries de marques de personne, selon leur fonctionnement dans différentes formes conjuguées. La troisième série n'apparaît que dans l'impératif, la deuxième dans le subjonctif et l'exhortatif, et la première série apparaît dans toutes autres formes.

Quant à l'alternative Ø/ǹ- (2s, 3ème série), Ø apparaît dans les formes positives, ǹ- dans les formes négatives.

(33) Ø Ø fá → fa 'donne!'
2s imp 15:2

(34) ǹ- '≠kà≠' Ø fá → nkafa 'ne donne pas!'
2s nég imp 15:2

Pour les alternatives de la 1ère série, on peut constater un conditionnement phonologique, qui n'opère cependant pas dans tous les cas de la 2ème personne: nyá- (2s) et wa- (3s) apparaissent devant voyelle ou nasale syllabique; ń- (2s) et ɩ- (3s) devant toute autre consonne.

(35) nyá- 'n- salíɩ → nyánzalíɩ 'tu tombe(ra)s'
2s ina 14:1

(36) ń- ta≠ 'n- salí → ńdánzalí 'tu ne tombe(ra)s pas'
2s nég ina 14:3

(37) nyá- v̀-' sala → nyáázála 'tu es tombé'
2s acc 14:2

(38) ń- ta≠ (v̀-)' sala → ńdásála 'tu n'es pas tombé'
2s nég acc 14:2

(39) wa- 'n- salíɩ → wánzalíɩ 'il tombe(ra)'
3s ina 14:1

(40) ɩ- ta≠ 'n- salí → ɩdánzalí 'il ne tombe(ra) pas'
3s nég ina 14:3

(41) wa- v̀-' sala → waazála 'il est tombé'
3s acc 14:2

(42) ɩ- ta≠ (v̀-)' sala → ɩdasála 'il n'est pas tombé'
3s nég acc 14:2

Pour wa-/ɩ- (3s) ce conditionnement opère aussi dans le cas du nom possé-

dé, tandis que la 2s sera toujours nyá- (sauf pour les noms qui expriment une relation personnelle et qui prennent la marque de personne de la 2ème série pour la 1s et 2s, (47-48).

(43) ɪ- nʊ́ʊ́nɪ → ɪnʊ́ʊ́nɪ 'sa main'
(44) wa- ɪzá → (*waɪzá →) waazá 'ses yeux'
(45) nyá- nʊ́ʊ́nɪ → nyánʊ́ʊ́nɪ 'ta main'
(46) nyá- ɪzá → (*nyáɪzá →) nyáázá 'tes yeux'
(47) ma- ɖɔndʊ́ʊ → mɔɖɔndɪ 'mon ami'
(48) n- ɖɔndʊ́ʊ → nɖɔndɪ 'ton ami'

Une autre irrégularité a été constatée devant le morphème `raa-´ où apparaît nyá- . Cependant, dans les dialectes qui disent `taa-´ pour `raa-´ , c'est ń- qui apparaît.

(49) nyá- `raa-´ sala → nyaraazála 'tu serais tombé'
2s irr-pos 1ɬ:2

(50) ń- `taa-´ sala → ndaazála 'idem'
2s irr-pos 1ɬ:2

3. Les formes conjugées: les formes de base

Les formes conjuguées du verbe tem seront donc des combinaisons d'un radical et un nombre de morphèmes verbaux. Tableau 5, en face, présente toutes les combinaisons possibles. Les trois premières formules constituent le mode indicatif, les trois suivantes (subjonctif, exhortatif et impératif) le mode injonctif. Irréel et statif sont aussi des modes.

Les éléments dont la présence est obligatoire sont précédés du signe + , et les éléments facultatifs de ± . Les accolades regroupent les éléments dont il ne peut y avoir qu'un à la fois dans un verbe conjugué.

Tableau 5: Les formules

Ina:	+Pers$_1$	±nég$_1$	+ina	± {rép, emph, hab}	±ant	±dist	+Rad$_{1/3}$	±i:s
Acc:	+Pers$_1$	±nég$_1$	+acc	± {rép, emph}	±ant	±dist	+Rad$_{2/3}$	± {nég$_r$, i:s}
I:a:	+Pers$_1$		+i:a	±rép		±dist	+Rad$_3$	±i:s
Sub:	+Pers$_2$	±nég$_2$	+sub	± {rép, emph}	±ant	±dist	+Rad$_{2/3}$	±i:s
Exh:	+Pers$_2$	±nég$_2$	+exh	± {rép, emph}	±ant	±dist	+Rad$_{2/3}$	
Imp:	+Pers$_3$	±nég$_2$	+imp	± {rép, emph}	±ant	±dist	+Rad$_{2/3}$	
Irr:	+Pers$_1$		+ {irr-pos, irr-nég, irr-ant}		±ant	±dist	+Rad$_2$	±i:s
St:	+Pers$_1$	±nég$_3$		± {rép, emph}	±ant	±dist	+Rad$_3$ +st	±i:s

Distribution des radicaux:

L'alternative 1/3 n'apparaît que dans l'inaccompli. Ce sont les formes positives qui prennent le Rad$_1$ et les formes négatives (celles qui contiennent une négation) qui prennent le Rad$_3$. Dans tous les cas où la formule indique l'alternative 2/3, la distribution est la suivante: Rad$_3$ dans toutes les formes qui contiennent *ant*, *emph*, ou *rép*; Rad$_2$ ailleurs.

3.1. Le verbe conjugué à l'inaccompli.

Le morpheme: ˈn- 'inaccompli'

- une nasale n à ton B
- un ton H volant à gauche (2.1.2.1)
- une jonction - (2.1.4)

La formule représentant toutes les formes conjuguées qui contiennent le morphème ina .

$$+\text{Pers}_1 \quad \pm\text{nég}_1 \quad +\text{ina} \quad \pm\left\{\begin{matrix}\text{rép}\\ \text{emph}\\ \text{hab}\end{matrix}\right\} \quad \pm\text{ant} \quad \pm\text{dist} \quad +\text{Rad}_{1/3} \quad \pm\text{i:s}$$

($\text{Rad}_{1/3}$, voir Tableau 5; morphèmes, voir Tableau 3.)

Exemples:

(51) má- ˈn- lám → mánlám 'je (le) fais (ferai)'
1s ina 16:1

(52) ba- ˈn- lám → bánlám 'ils (le) f(er)ont'
3p ina 16:1

(53) ba- ta≠ ˈn- laḿ → badánlaḿ 'il ne (le) f(er)ont pas'
3p nég ina 16:3

(54) ɪ- ta≠ ˈn- tan- fʊn- ka- salí → ɪdándanvʊngazalí
3s nég ina emph ant dist 14:3
'il ne tombait même pas avant'

Dans certains dialectes le ton volant de l'inaccompli ˈn- saute la négation pour aller se poser sur la personne:

(55) ba- ta≠ ˈn- laḿ → bádanlaḿ 'ils ne (le) f(er)ont pas'
3p nég ina 16:3 (cf. 52)

Dans ce cas, un ton supplémentaire vient se poser sur les radicaux qui n'ont pas de ton H (2 à 7).

(56) ɪ- ta≠ ˈn- bɪɪzɪ → ɪdánbɪɪzɪ ou ɪdanbíízɪ 'il ne peut pas'
3s nég ina 3:3

3.2. Le verbe conjugué à l'accompli.

Le morphème: v̀-ˊ 'accompli'

- une voyelle copiante v (2.1.1) portant un ton copiant (2.1.2.2)
- une jonction - (voir section 2.1.4)
- un ton H volant à droite (voir section 2.1.2.1)

Dans les formes négatives la voyelle est supprimée; nous l'écrivons alors (v̀-)ˊ dans les formules. Dans les formes à nég_r, le ton volant est aussi

supprimé.

La formule représentant toutes les formes conjuguées qui contiennent le morphème *acc*.

$$+\text{Pers}_1 \quad \pm\text{nég}_1 \quad +\text{acc} \quad \pm\left\{\begin{matrix}\text{rép}\\ \text{emph}\end{matrix}\right\} \quad \pm\text{ant} \quad \pm\text{dist} \quad +\text{Rad}_{2/3} \quad \pm\left\{\begin{matrix}\text{nég}_r\\ \text{i:s}\end{matrix}\right\}$$

($\text{Rad}_{2/3}$, voir Tableau 5; morphèmes, Tableau 3)

Exemples:

(57) wa- v́- tala → waadála 'il est arrivé'
3s acc l4:2

(58) ɩ- ta/ (v́-)' tala → ɩdatála 'il n'est pas arrivé'
3s nég acc l4:2

(59) ɩ- ta/ (v́-)' tala tā → ɩdatala tá 'il n'est pas encore arrivé'
3s nég acc l4:2 nég$_r$

(60) wa- v́-' fɒn- talí → waavɒ́ndalí 'il est arrivé avant'
3s acc ant l4:3

(61) bɩ- ta/ (v́-)' ta/ ka- salí → bɩdatákazalí
3i nég acc rép dist l4:3
'ce n'est plus tombé'

3.3. Le verbe conjugué avec insistance sur l'accompli.

Le morphème: ′ń- 'insistance sur l'accompli'

- une nasale n à ton H (cf. ina: ton B)
- un ton H volant à gauche (2.1.2.1)
- une jonction - (2.1.4)

La formule représentant toutes les formes conjuguées qui contiennent le morphème *i:a*.

$$+\text{Pers}_1 \quad +\text{i:a} \quad \pm\text{rép} \quad \pm\text{dist} \quad +\text{Rad}_3 \quad \pm\text{i:s}$$

Exemples:

(62) wa- ′ń- laḿ → wáńláḿ 'il (l') a déjà fait'
3s i:a l6:3

(Pour le ton H sur le a de lam , voir section 5.2.)

(63) má- ˊńˊ- taˊ ka- laˊ → máńdakalaˊ 'je (l') ai déjà refait au loin'
ls i:a rép dist l6:3

Exception: Des tons supplémentaires se posent sur le Rad_3 des verbes 1 et 17.

(64) má- ˊńˊ- ɖɛɛ → méńɖéé 'je suis déjà passé'
ls i:a l:3

(65) má- ˊńˊ- caa → máńjáá 'j'ai déjà cherché'
ls i:a l7:3

3.4. Le verbe conjugué au subjonctif.

Le morphème: Øˊ 'subjonctif'

- un zéro (2.1.3)
- un ton H volant à droite (2.1.2.1)

La formule représentant toutes les formes conjuguées qui contiennent le morphème *sub*.

$$+Pers_2 \ \pm nég_2 \ +sub \ \pm \left\{ \begin{matrix} rép \\ emph \end{matrix} \right\} \ \pm ant \ \pm dist \ +Rad_{2/3}$$

($Rad_{2/3}$, voir Tableau 5.)

Exemples:

(66) ɖɪˊ Øˊ kʊrɓ → ɖɪkʊrɓ 'que nous nous levions'
lp sub l3:2

(67) baˊ Øˊ ka- kʊrɓ → bakágɓrɓ 'qu'ils se lèvent au loin'
3p sub dist l3:2

(Pour le ton H sur gʊ , voir section 5.1.)

(68) ma- ˊˊkàˊ Øˊ sɔɔ → mókɔsɔ́ɔ 'que je n'oublie pas'
ls nég sub l:2

3.5. Le verbe conjugué à l'exhortatif.

Le morpheme: ˊØ 'exhortatif'

- un zéro (2.1.3)
- un ton H volant à gauche (2.1.2.1)

La formule représentant toutes les formes conjuguées qui contiennent le morphème *exh*.

$$+\text{Pers}_2 \quad \pm\text{nég}_2 \quad +\text{exh} \quad \pm\left\{\begin{matrix}\text{rép}\\ \text{emph}\end{matrix}\right\} \quad \pm\text{ant} \quad \pm\text{dist} \quad +\text{Rad}_{2/3}$$

($\text{Rad}_{2/3}$, voir Tableau 5.)

Exemples:

(69) ɩ- ʹØ yeɩe → ǐyeɩe 'il faut qu'il laisse'
3s exh 14:2

(70) ka- ʹØ ka- bɪsɪ → kákabɪsɪ 'il faut qu'elle (la lune) tourne
3sIII exh dist 2:2 au loin; il faut qu'elle revienne'

(71) kaǂ ʹǂkàǂʹ ʹØ ka- bɪsɪ → kákakábɪsɪ
3sIII neg exh dist 2:2
'il ne faut pas qu'elle revienne'

(72) baǂ ʹǂkàǂʹ ʹØ kʊ̀ → bákakʊ 'il ne faut pas qu'ils tuent'
3p nég exh 15:2

3.6. Le verbe conjugué à l'impératif.

Le morphème: Ø 'impératif'
- un zéro

La formule représentant toutes les formes conjuguées qui contiennent le morphème *imp*.

$$+\text{Pers}_3 \quad \pm\text{nég}_2 \quad +\text{imp} \quad \pm\left\{\begin{matrix}\text{rép}\\ \text{emph}\end{matrix}\right\} \quad \pm\text{ant} \quad \pm\text{dist} \quad +\text{Rad}_{2/3}$$

($\text{Rad}_{2/3}$, voir Tableau 5.)

Exemples:

(73) Ø Ø sʊʊ → sʊʊ 'entre!'
2s imp 1:2

(74) ɩ-ʹ Ø sʊʊ → ɩzʊ́ʊ 'entrez!'
2p imp 1:2

(75) ǹ- ʹǂkàǂʹ Ø ɩɩɩ → nkaɩ́ɩ 'ne sors pas!'
2s nég imp 1:2

(76) Ø Ø fʊn- yeɩǐ → fʊnÿeɩǐ 'laisse d'avance!'
2s imp ant 14:3

(77) ø ø ta≠ bɪsɪ → tabɪsɪ 'retourne encore!'
2s imp rép 2:3

(78) ø ø tan- yelí → tenÿelí 'laisse seulement!'
2s imp emph 14:3

(79) ɪ-′ ø tan- mʊŋ → ɪdáńmʊŋ 'souriez donc!'
2p imp emph 2:3

3.7. Le verbe conjuguée à l'irréel.

Les morphèmes: `raa-′ 'irréel-positif'

- la syllabe raa à tons B (variation dialectale: taa)
- un ton B volant à gauche (2.1.2.1)
- une jonction - (2.1.4)
- un ton H volant à droite (2.1.2.1)

′≠ta≠′ 'irréel-négatif'

- la syllabe ta à ton B
- un ton H volant de chaque côté (2.1.2.1)
- une jonction ≠ de chaque côté (2.1.4)

′≠fʊn-′ 'irréel-antérieur'

- la syllabe fʊn à tons B
- un ton H volant de chaque côté (2.1.2.1)
- une jonction ≠ à gauche
- une jonction - à droite (2.1.4)

La formule représentant toutes les formes conjuguées qui contiennent un morphème irréel.

$$+\text{Pers}_1 + \left\{\begin{matrix}\text{irr-pos}\\ \text{irr-nég}\\ \text{irr-ant}\end{matrix}\right\} \pm\text{ant} \quad \pm\text{dist} \quad +\text{Rad}_2 \quad \pm\text{i:s}$$

Restrictions: (1) l'irréel-antérieur (′≠fʊn-′) n'apparaît jamais avec l'antérieur (fʊn-)

(2) l'insistance sur le sujet (i:s) n'a été attestée qu'avec l'irr-pos.

Exemples:

(80) má- `raa-´ kɪzi → mereegɪzi 'j'aurais refusé'
1s irr-pos 2:2

(81) ba- `raa-´ la → baraalá 'ils (l')auraient fait'
3p irr-pos 16:2

(82) má- ´≠ta≠´ sala → mátasála 'je ne serais pas tombé'
1s irr-nég 14:2

(83) ń- ´≠ta≠´ nà → ńtana 'tu n'aurais pas vu'
2s irr-nég 15:2

(84) ɪ- ´≠ta≠´ fʊn- sɛɛ → ɪtafʊ́ńzɛɛ 'il n'aurait pas salué d'avance'
3s irr-nég ant 1:2

(85) má- ´-fʊn-´ tɪɪná → (a) máfʊndɪɪná '(si) je possédais'
1s irr-ant 14:2

3.8. Le verbe conjugué au statif.

Le morphème: -áa 'statif'

- une voyelle longue à ton tombant et du timbre a
- la voyelle fait coalescence avec la voyelle finale du Rad_3 selon le tableau suivant:

(i)i + áa → ée (parfois áa)
(e)e + áa → ée
(u)u + áa → óo
(o)o + áa → óo
(a)a + áa → áa
(ɪ)ɪ + áa → ɛ́ɛ (ɪ́ɪ pour 15:3)
(ɛ)ɛ + áa → ɛ́ɛ
(ʊ)ʊ + áa → ɔ́ɔ
(ɔ)ɔ + áa → ɔ́ɔ

- une jonction - à gauche (2.1.4)

La formule représentant toutes les formes conjuguées qui contiennent le morphème *st*.

$$+Pers_1 \pm \left\{ \begin{matrix} rép \\ emph \end{matrix} \right\} \pm ant \pm dist +Rad_3 +st \pm i{:}s$$

Exemples:

(86) ɪ- ʈɔɔzɪ -áa → ɪdɔɔzɛ́ɛ 'il se souvient'
3s 3:3 st

(87) ba- cɔwɓ -áa → (*bɔjɔwɔ́ɔ →) bɔjɔɔ́ɔ 'ils sont là'
3p 14:3 st
(w disparaît entre voyelles identiques)

(88) ɪ- fúu -áa → ɪvóo 'il suit'
3s 15:3 st

(89) bɪ- tan- cɔwɓ -áa → bɪdanjɔɔ́ɔ 'c'est là sans plus'
3i emph 14:3 st (cf. 87)

(90) bɪ- tara- cɔwɓ -áa → bɪdɔrɔjɔɔ́ɔ 'de nouveau'
3i rép 14:3 st

(91) ɪ- ɋíɪ -áa → ɪɋíɪ 'il est lié'
3s 15:3 st

4. Les modalisations

Les formes de base (3.1 à 3.8) peuvent subir les modalisations suivantes, toujours selon les formules au Tableau 5:

1. négation
2. répétition
3. emphatique
4. habituel
5. antérieur
6. distance
7. insistance sur le sujet

4.1. La négation.

Les morphèmes: ta≠ 'négation$_1$'
- la syllabe ta à ton B
- la jonction ≠ à droite (2.1.4)
- supprime la voyelle de 'v̀-' → (v̀-)' (3.2)

'≠kà≠' 'négation$_2$'
- la syllabe ka à ton B persistant (2.1.2)

- un ton H volant de chaque côté (2.1.2.1)
- la jonction ≠ de chaque côté (2.1.4)

raa- 'négation$_3$'

- la syllabe raa à tons B
- la jonction - a droite (2.1.4)

tā 'négation répétée ("pas encore")

- la syllabe ta avec un ton opposant (2.1.2.3)
- supprime le ton volant de l'accompli ˊv-ˊ , qui en cas de négation est déjà réduit à (ˊv-)ˊ (3.2)

Exemples:

ta≠ (53-56, 58-59, 107-108)

ˊ≠kà≠ˊ (68, 71-72, 75)

tā (59)

(92) bɪ- raa- cɔwɓ -áa → (*bɪraajɔwɔ́ɔ →) bɪraajɔɔ́ɔ
3i nég 14:3 st
bɪraajɔɔ́ɔ bolíni 'ce n'est pas loin'

Exceptions:

Dans certaines des formes des verbes des types 14 et 15 la perte de ton H imposée par tā entraine un changement de radical:

(93) type 14 má- ta≠ (ˊv-)ˊ tan- salí → mádátáńzalí
1s nég acc emph 14:3
'je ne suis même pas tombé'

Le Rad$_3$ est utilisé à cause de l'emphatique (voir Tableau 5) mais lorsqu'on ajoute tā , le Rad$_2$ prend sa place:

(94) má- ta- (ˊv-)ˊ tan- sala tā → mádatanzala tá
1s nég acc emph 14:2 nég$_r$
'je ne suis même pas encore tombé'

(95) type 15 ɖá- ta≠ (ˊv-)ˊ kpà → ɖádákpá 'nous ne sommes pas montés'
1p nég acc 15:2

En ajoutant tā , le Rad_2 est remplacé par Rad_3:

(96) ɖá- ta/ (v̀-)' kpáa tā → ɖádakpáa tá
1p nég acc 15:3 nég
'nous ne sommes pas encore montés'

4.2. La répétition. Il y a deux morphèmes synonymes:

Les morphemes: ta/ 'répétition'

- la syllabe ta à ton B
- la jonction / à droite (2.1.4)

(ne se distingue du morphème ta/ 'négation$_1$' que par sa position dans le verbe conjugué; cf. Tableau 5)

tara- 'répétition'

- les syllabes tara à tons B
- la jonction - à droite (2.1.4)

Exemples:

(97) wa- v̀-' ta/ ka- bɪsɪ → waadákabɪsɪ 'il est encore revenu'
3s acc rép dist 2:3

(98) wa- v̀-' tara- ka- bɪsɪ → waadáragabɪsɪ 'idem'
3s acc rép dist 2:3

(99) wa- 'n- ta/ ka- bɪsí → wándakabɪsí 'il reviendra encore'
3s ina rép dist 2:1

(100) wa- 'n- tara- ka- bɪsí → wándaragabɪsí 'idem'
3s ina rép dist 2:1

(cf. 61, 63, 77, 90)

4.3. L'emphatique.

Le morphème: tan- 'emphatique'

- la syllabe tan à tons B
- la jonction - (2.1.4)

Exemples: (54, 78-79, 89, 92-93)

(101) wa- 'n- tan- salíɪ → wándanzalíɪ 'il ne fait que tomber'
3s ina émph 14:1

(102) wa- v̀-ʹ tan- salí → waadáñzalí 'il est tombé tout seul'
3s acc emph 14:3

(103) ɩ- ta≠ ʹn- tan- salí → ɩdándanzalí 'il ne tombe même pas'
3s ńég ina emph 14:3

(104) ɩ- ta≠ (v̀-)ʹ tan- salí → ɩdatáñzalí 'il n'est même pas tombé'
3s ńég acc emph 14:3

4.4. L'habituel.

Le morphème: tárá-ʹʹʹ 'habituel'

- les syllabes tara avec tons H
- la jonction - à droite (2.1.4)
- de multiples tons H volants, qui se posent sur toutes les syllabes suivantes tant qu'ils ne rencontrent pas de ton H appartenant au radical.

Exemples:

(105) wa- ʹn- tárá-ʹʹʹ fɔ́ɩ → wɔ́ndɔ́rɔ́vɔ́ɔ́ɩ
3s ina hab 8:1
'il porte sur l'épaule habituellement'

(106) má- ʹn- tárá-ʹʹʹ farím → ˙mándárávárím
1s ina hab 14:1
'je cultive habituellement'

(107) má- ta≠ ʹn- tárá-ʹʹʹ farí → mádándárávárí
1s ńég ina hab 14:3
'je ne cultive pas habituellement'

(108) má- ta≠ ʹn- tárá-ʹʹʹ fʊn- ka- bɪsɩ → mádándárávʊńgábísí
1s ńég ina hab ant dist 2:3
'd'habitude je ne rentre pas avant'

4.5. L'antérieur.

Le morphème: fʊn- 'antérieur'

- la syllabe fʊn à ton B
- la jonction - à droite (2.1.4)

Exemples: (54, 60, 76, 84, 108)

4.6. La distance.

Le morpheme: ka- 'distance' "l'action se déroule au loin"

(dans les verbes de mouvement, ce morphème exprime que l'action a été initiée au loin et se déroule vers le locuteur.)

- la syllabe ka à ton B
- la jonction - à droite (2.1.4)

Exemples: (54, 61, 67, 70-71, 97-100, 108)

4.7. L'insistance sur le sujet.

Les morphèmes: `kʊ 'insistance sur le sujet'

- la syllabe kʊ à ton B (variation dialectale: kʊʊ)
- un ton B volant à gauche, qui se pose sur la dernière voyelle ou nasale du radical verbal.

nā 'insistance sur le sujet'

- la syllabe na à ton opposant (2.1.2.3)
- ne permet pas au ton H volant de v́- 'accompli' de se poser sur le radical verbal.

`kʊ s'emploie avec Rad_1, nā avec Rad_2 et Rad_3, nā peut être renforcé par kʊ (voir 115).

Exemples:

(109) má- ′n- lám `kʊ → mánlám kʊ 'c'est moi qui le fais (ferai)'
1s ina 16:1 i:s

(110) wa- ′n- fɪɪzí `kʊ → wánvɪɪzɪ kʊ 'c'est lui qui essuie'
3s ina 3:1 i:s

(111) má- v́- ′ la nā → (*máála ná →) máálá ná 'c'est moi qui l'ai fait'
1s acc 16:2 i:s
(pour le ton H sur la , voir 5.2)

(112) wa- v́- ′ la nā → waala ná 'c'est lui qui l'a fait'
3s acc 16:2 i:s

(113) ba- v́- ′ sɛlí nā → bɛɛzɛlí na 'ce sont eux qui ont soulevé'
3p acc 13:2 i:s

(114) wa- ʼń- salɩ́ nā → (*wáńzalɩ́ na →) wáńzálɩ́ na
3s i:a 14:3 i:s
(idem 111)
'c'est lui qui est déjà tombé'

(115) wa- ꜜv-ʼ faraná nā kʊ → waavaraná na kʊ
3s acc 13c:2 i:s i:s
'c'est bien lui qui a déjà cultivé avec (cette houe)'

5. <u>La perturbation et les changements des tons</u>

Cette section a été ajoutée pour donner une vue d'ensemble des processus tonals en tem. Ces processus ne se limitent pas aux verbes, mais s'étendent aussi aux autres classes de mots. (Pour une analyse complète du système tonal en tem, voir Tchagbalè [1976].)

5.1. <u>La perturbation des tons</u>. L'orthographe tem étant phonologique, elle représente les tons de base. Nous présentons ici les deux règles principales de la perturbation des tons.

1. <u>1ère règle</u>: Lorsqu'un ton B suit immédiatement un ton H, il est relevé au niveau de ce dernier, sauf en position finale de proposition.

(116) jɔlɔ 'gourde' mʊ́tʊ 'pâte'

(117) máána jɔlɔ [maanajɔlɔ] 'j'ai vu la gourde'

(118) máána mʊ́tʊ [maanamʊtʊ] 'j'ai vu la pâte'

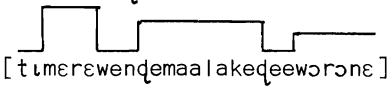
(119) máána mʊ́tʊ gɛ [maanamʊtʊgɛ] 'c'est que j'ai vu la pâte'

Dans (117) le ton B de jɔ- est relevé par le ton H de -ná . Le ton B de -tʊ est relevé en (119) mais pas en (118) où il se trouve en finale de proposition.

2. <u>2ème règle</u>: Lorsque deux tons H sont séparés par un ou plusieurs tons B à l'intérieur d'une même proposition, le deuxième est surbaissé par rapport au premier.

Ceci donne lieu à une suite descendante de terrasses tonales.

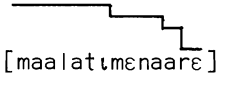
(120) tɪmɛ́rɛ wenɖé máálá keɖee-wɔ́rɔ́ né 'le travail que j'ai fait avant-hier'



[tɪmɛrɛwenɖemaalakeɖeewɔrɔnɛ]

tɪ- ton B
-mɛ́- ton H
-rɛ ton B relevé par le ton H de -mɛ́- (1ère règle)
we- ton B
-n- ton B
-ɖé ton H surbaissé par rapport à -mɛ́- à cause de la présence de plusieurs tons B (2ème règle)
má- ton H
-á- ton H
-lá ton H
} au même niveau que -ɖé
ke- ton B relevé (1ère règle)
-ɖee ton B
-wɔ́- ton H surbaissé (2ème règle)
-rɔ́ ton H
né ton H
} au même niveau que wɔ́-

(121) máálá tɪmɛ́ naárɛ 'j'ai fait certains travaux'



[maalatɪmɛnaarɛ]

má- ton H
-á- ton H
-lá ton H
tɪ- ton B relevé par -lá (1ère règle)
-mɛ́ ton H surbaissé par rapport à -lá (et donc à tɪ-) par la présence du ton B de tɪ- , bien que ce dernier soit relevé.
na- ton B relevé par -mɛ́
-á- ton H surbaissé par rapport à -mɛ́ par le ton B de na-
-rɛ ton B, reste B en finale de proposition.

5.2. Changements de ton: HBH → HHH.

5.2.1. Changement d'un ton B en un ton H. Un ton B qui se trouve entre 2 tons H devient un ton H réel dans les contextes morphologiques suivants:

5.2.1.1. Le ton B initial d'un nom avec le schème tonal BH(...) est changé en ton H réel, lorsqu'il est préfixé d'une marque de personne à ton H.

(122) má- ɖɔkʊ́ → mɔ́ɖɔ́kʊ́ 'mon panier'
(123) má- sɔwírɛ → mɔ́zɔ́wírɛ 'mon mortier'
(124) má- mʊʊ́rɛ → mámʊʊ́rɛ 'mon os'
(125) má- lːːyá → málːːyá 'ma perdrix'

Ce dernier exemple montre qu'une syllabe à deux voyelles à tons identiques subit le changement comme s'il s'agissait d'un seul ton. Ceci est vrai pour les syllabes VV et VN.

Exception: Les noms qui commencent par les préfixes suivants ne subissent pas le changement de ton: nI- , ɖI- , kA- , kI- .

(126) má- nʊvɔ́rɛ → mánʊvɔ́rɛ 'mon pied'
(127) má- ɖɪdáarɛ → máɖɪdáarɛ 'ma place'
(128) má- kowúrɔ́ɔ → mógowúrɔ́ɔ 'mon royaume'
(129) má- kʊjɔ́ɔ́nɪ → mágʊjɔ́ɔ́nɪ 'mes offrandes'

5.2.1.2. Le ton B initial d'une enclitique BH est changé en ton H réel, lorsqu'elle est préfixée d'une marque de personne à ton H.

(130) má- -daá → mádáá '(moi-dans) en moi'
(131) má- -rɔɔzí → mórɔ́ɔ́zí '(moi-sur) sur moi'

5.2.1.3. Le ton B de la négation ta/ est changé en ton H réel, lorsqu'elle se trouve entre une marque de personne à ton H à gauche, et une syllabe à ton H (un morphème ou un radical frappé du ton volant H de v̀-′ acc) à droite.

(132) ɖá- ta/ (v̀-)′ bɪsɪ → *ɖádabísɪ → ɖádábísɪ
1p nég acc 2:2
'nous ne sommes pas retournés'

(133) ɖá- ta✓ (v̀-)' ta✓ bɪsɪ → *ɖádatábɪsɪ → ɖádátábisi
lp nég acc rép 2:3
'nous ne sommes plus retournés'

5.2.1.4. Le ton B initial d'un radical verbal avec le schème tonal BH(...) est changé en ton H réel, lorsqu'il est précédé d'un ton H, ce qui arrive dans les cas suivants:

Le statif

(134) má- cɔwʊ́ -áa → *mójɔ́ɔ́ɔ → mójɔ́ɔ́ɔ
1s 14:3 st
'je suis là'

(135) má- tɔɔzɪ -áa → *módɔɔzéɛ → módɔ́ɔ́zéɛ
1s 3:3 st
'je me souviens'

L'exhortatif des verbes 8 à 13

(136) ɪ✓ 'ø fɔrɔ́sɪ → *ífɔrɔ́sɪ → ífɔ́rɔ́sɪ
3s exh 10:2
il n'a qu'à gâter'

(137) ɪ✓ 'ø sɛlí → *ísɛlí → ísélí
3s exh 13:2
'il faut qu'il soulève'

L'insistance sur l'accompli des verbes 8 à 14 et 16

(138) wa- 'ń- fɔrɔ́sɪ → *wɔ́ńvɔrɔ́sɪ → wɔ́ńvɔ́rɔ́sɪ
3s i:a 10:3
'il est déjà gâté'

(139) wa- 'ń- sɛlí → *wéńzɛlí → wéńzélí
3s i:a 13:3
'il a déjà soulevé'

(140) wa- 'ń- salí → *wáńzalí → wáńzálí
3s i:a 14:3
'il est déjà tombé'

(141) wa- ʼń- taḿ → *wáńdaḿ → wáńdáḿ
3s i:a 16:3
'il a déjà attaché'

<u>Après ka- 'distance', frappé d'un ton volant H</u>

(142) wa- v̍-ʼ ka- fɔrɔ́sɩ → *wɔɔgɔ́vɔrɔ́sɩ → wɔɔgɔ́vɔ́rɔ́sɩ
3s acc dist 10:2
'il est gâté au loin'

Remarquez que ceci n'est pas vrai pour les autres morphèmes qui peuvent précéder le radical verbal (fʊn- (ant), tan- (emph), ta-́ (rép), tara- (rép))

(143) wa- v̍-ʼ fʊn- fɔrɔ́sɩ → waavʊ́ńvɔrɔ́sɩ
3s acc ant 10:3
'il était gâté avant'

5.2.2. <u>Changement de plusieurs tons B en tons H</u>. Tous les tons B qui se trouvent entre 2 tons H deviennent des tons H réels dans les contextes morphologiques suivants:

5.2.2.1. Dans le cas des verbes du type 13c, tous les tons B du radical sont changés en tons H réels dans les contextes exemplifiés en (136-143) ci-dessus.

Exemples:

<u>L'exhortatif des verbes 8 à 13</u>

(144) ɩ-́ ʼØ mʊʊzɩná → *ímʊʊzɩná → ímʊ́ʊ́zíná
3s exh 13;c:2
'il faut qu'il s'amuse avec'

<u>L'insistance sur l'accompli des verbes 8 à 14 et 16</u>

(145) wa- ʼń- bɩsɩná → *wáńbɩsɩná → wáńbísíná
3s i:a 13;c:3
'il est déjà retourné avec'

<u>Après ka- 'distance', frappé d'un ton volant H</u>

(146) wa- v̍-ʼ ka- bɩsɩná → *waagábɩsɩná → waagábísíná
3s acc dist 13.c:2
'il est revenu avec'

5.2.2.2. Dans les formes conjuguées (de n'importe quel type) qui se terminent par nā 'insistance sur le sujet', les mêmes changements s'opèrent dans les contextes exemplifiés en (136-143) ci-dessus, ainsi qu'après le ton copiant de v́- 'accompli', devenu H après une marque de personne à ton H (le ton volant H n'étant pas réalisé, cf. le morphème nā section 4.7.)

(147) má- v́- bɪsɪ nā → *máábɪsɪ ná → máábísí ná
ls acc 3:2 i:s
'c'est moi qui suis retourné'

(148) má- v́- suluki nā → *móózuluki ná → móózúlúki ná
ls acc 5:2 i:s
'c'est moi qui ai rassemblé'

(149) má- v́- sala nā → *máázala ná → máázálá ná
ls acc 14:2 i:s
'c'est moi qui suis tombé'

(150) má- v́- ka- sala nā → *máagázala ná → máagázálá ná
ls acc dist 14:2 i:s
'c'est moi qui suis tombé au loin'

5.2.2.3. Exemples supplémentaires pour illustrer les ressemblances et les différences entre -ná 'terminaison du $rad_{2/3}$ des verbes 13c et nā 'insistance sur le sujet'.

(151) wa- v́- bɪsɪná → waabɪsɪná 'il est retourné avec'
3s acc 13.c:2

(152) wa- v́- bɪsɪ nā → waabɪsɪ ná 'c'est lui qui est retrouné'
3s acc 2:2 i:s

Ces formes sont homophones; elles ont cependant une influence différente sur un pronom de complément qui les suit:

(153) waabɪsɪná wɛ́ 'il est retourné avec eux'

(154) waabɪsɪ ná wɛ 'c'est lui qui les a (re)tournés'

Le premier impose un ton H au complément,[3] le deuxième un ton B. L'exemple suivant complète la liste des possibilités:

(155) waabɪsɪná na wɛ 'c'est lui qui est retourné avec eux'

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[3]Dans l'orthographe on n'écrit pas les tons H sur les pronoms complément, sauf pour ɖáa et mí ɪ .

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CROSS RIVER AS A MODEL FOR THE EVOLUTION OF BENUE-CONGO NOMINAL CLASS/CONCORD SYSTEMS

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Cross River languages exhibit nominal class/concord systems which typify almost every possible stage of simplification of the proto-Benue-Congo system, from full retention in some Upper Cross and Bendi languages to near complete elimination in the Ogoni group. The synchronic facts from Cross River shed light on some of the psycholinguistic processes involved in class/concord systems acquisition and retention as well as some of the sociolinguistic processes involved in the modification or loss of such systems. Taken together, the nominal class/concord systems of the Cross River languages correspond to points along a continuum or implicational scale which may prove to be of value in establishing a typology of class/concord systems throughout the Benue-Congo subbranch.

1. Introduction

1.1. Cross River languages and the Benue-Congo east-west interface. In light of recent work by the members of the Benue-Congo Working Group, it has been convincingly shown that a strict east-west division corresponding to Greenberg's Kwa-Benue-Congo divide is no longer justifiable. The results of careful examination and analysis of the data fully support the inclusion of the former Eastern Kwa languages in the Benue-Congo subbranch. The significance of this great step forward in Niger-Congo studies, however, should not lead us to overlook certain very general tendencies (perhaps areal characteristics) which serve to

[1]Special thanks are due to Prof. K. Williamson, whose forthcoming article entitled "How to become a Kwa language" served both as an inspiration for this work as well as providing crucial data concerning the Ogoni group. Prof. W. Chafe of the University of California, Berkeley is also to be thanked for encouraging me in my comparative work on Cross River in general, and Lower Cross in particular. Dr. L. Marchese and Dr. K. Demuth provided helpful suggestions, and financial support was furnished in part by the National Science Foundation.

distinguish many of the languages to the west of an arc formed roughly by the Niger Delta, the Cross River basin, and the Niger-Benue confluence from those to the east. This arc in fact defines the area where the languages of the Cross River group are spoken, and, in many ways, the Cross River[2] group represents the interface between the western and eastern Benue-Congo languages. In the area of phonology, while -CVCV[3] roots predominate to the east and -CV roots predominate to the west, -CVC, -CVV, and -CVVC roots typify the Cross River languages. While many Bantu pitch systems are clearly accentual and often have only two levels of contrastive tone as opposed to western Benue-Congo systems, where accentual phenomena play a more limited role and where three-level tonal systems are quite common, many Cross River languages exhibit very interesting and complex pitch systems in which basically two-level tone systems interact with accent or stress systems to establish conditions favorable to the phonemicization of a third level of contrastive tone. In the area of morphology, the nominal class/concord systems of the Upper Cross languages once again represent a transition from the conservative systems of the east to the more innovative or simplified systems of western Benue-Congo. In fact, each subgroup of Cross River represents a macro-link in a very smooth chain of development from proto-Benue-Congo-type systems with CV- prefixes, full class/gender distinctions, and numerous concord points to prefixless systems with no class/gender distinctions and pronominal subject-verb concord only.

1.2. Cross River languages used in this work. Several languages from each subgroup of Cross River have been singled out as sub-links or micro-links in the

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[2]The Cross River languages are spoken by some sixty language communities found primarily in the Cross River and Rivers States of southeastern Nigeria. The definition of Benue-Congo used in this work will be that developed by the Benue-Congo Working Group of the West African Linguistic Society (1984) which includes the former Eastern Kwa subbranches of Yoruboid, Edoid, Nupoid, Idomoid, and Igboid, along with the "traditional" Benue-Congo subbranches, that is, Plateau, Jukunoid, Cross River, Bantoid, and Bantu.

[3]The following abbreviations are used in this work:

C	- consonant	PBC	- proto-Benue-Congo
E	- east	S	- singular
N	- syllabic nasal	V	- vowel
P	- plural	W	- west

above-described chain, typifying even finer increments along the continuum of class/concord systems evolution. Choice of language was in some cases dictated at least in part by availability of data. At least four languages were selected from each subgroup (except for Bendi) including the following:

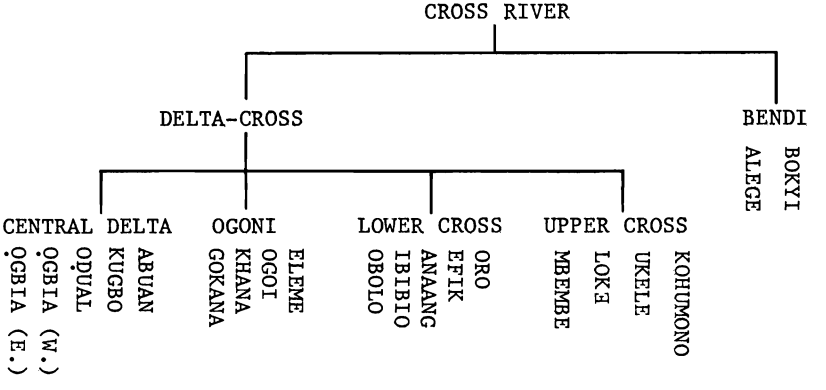

Table 1. Cross River languages used in this work

2. Morphophonology: Prefix Shape and Prefix Alternations

2.1. Upper Cross and Bendi: conservative systems. As shown in Table 2 on the following page, proto-Benue-Congo-type CV- prefixes have survived in Upper Cross languages, but to varying degrees, ranging from roughly 75% of the prefix inventory in Kohumono and Ukele to 55% in Lokə and only 13% in Mbembe. Kohumono seems to be the most conservative system, allowing only prefixes of the form V- beside CV- prefixes, while the other languages allow N- prefixes, especially in the plural, which, if we accept De Wolf's [1971] reconstructions, must be innovations. The Bendi languages seem to exhibit a similar range of CV- prefix retention as in Upper Cross (from roughly 80% of the prefix inventory in Bokyi to 10% in Alege). There are, however, key differences between the two groups as well. While Upper Cross makes widespread use of N- prefixation in the plural, the N- prefix is of relatively little importance in Bendi. In Bokyi (as well as in other Bendi languages?) there may be a tendency toward the incorporation of the reflexes of PBC *CV- prefixes into roots and subsequent pre-prefixation of a vowel to the collapsed [proto-prefix + root] form (see the form for 'twen-

		'egg'	'tooth'	'tree'	'twenty'
PROTO-BENUE-CONGO					
[De Wolf 1971]	S	(Class 5) *li-	(5) *li-	(7) *ki-	(5) *li-
	P	(Class 6) *à-	(6) *à-	(8) *bì-	----
UPPER CROSS					
Kohumono	S	rɛ́-sɛ̀rɛ̄	rɛ̀-tán̄	hè-sɛ̄	rə̀-nùβ
	P	rá-sɛ̀rɛ̄	rà-tán̄	bè-sɛ̄	----
Ukele	S	lɛ̄-s:ɛ̄lɛ̄	lɛ̄-t:à:̄l	kɛ̀-s:è	lɔ̄-lɔ̄p
	P	?	lā-t:à:̄l	bɛ̀-s:è	----
Lokə	S	é-sê:ŋ́	lɛ̀-tâ:	kè-tǐ	lè-já̋w
	P	ǹ-sê:ŋ́	à-tâ:	jè-tǐ	----
Mbembe	S	é-ʃ̌	ɛ̀-tá	è-tʃ́ǐ	ɛ̀-rɔ́β
	P	ń-ʃ̌	à-tá	ǹ-tʃ́ǐ	----
BENDI					
Bokyi	S	djǐ-cɛ̌:	bù-ʃán	kì-tʃ́ǐ	ì-rìtʃ́ǐ
	P	á-cɛ̌:	à-ʃán	?	?
Alege	S	ɛ-cī	ó-ʃān	ɔ̀-sǐ	lé-zi:
	P	?	é-ʃān	ì-sǐ	?

? = a gap in available data; ---- = no plural form

Table 2. Reflexes of proto-Benue-Congo CV- prefixes in the Upper Cross and Bendi subgroups

ty' in Table 2).

2.2. Central Delta: "incorporated" CV- prefixes and pre-prefixation. The above mentioned tendencies exhibited by the Bendi languages seem to be of even greater importance in the Central Delta languages, where the N- prefix is apparently non-existant and where the incorporation of the reflexes of PBC *CV- prefixes into roots and subsequent vocalic pre-prefixation is still in progress. Abuan, Kugbo, and Odual VCV- structures are in free variation with CV- structures noun-initially in some items. In most cases incorporated prefixes have /r/ or /ʃ/ as their initial consonant. Incorporated CV- prefixes most often

occur only in plural forms and are often the only phonological material differentiating the plural form from the singular, where nouns typically consist of the original root and a V- prefix. The pre-prefix is invariably /A-/ (realized as [a-] or [ə-] in harmony with the value for [±WIDE (PHARYNX)] of the vowel(s) of the root. /A-/ is also the most (the only?) productive nominal prefix, loan words being assigned only this prefix in Ọgbia [Isukul 1982].

2.3. Further developments in the Central Delta subgroup. As shown in Table 3 below, in Western Ogbia PBC *CV- prefixes are often replaced by the suffix

	'tooth (P)'	'twenty'
PBC	*à	*ɪ̀ɪ-
UPPER CROSS		
Kohumono	rà-tán	rè-nùβ
CENTRAL DELTA		
Abuan	a-ra|a:|	ʃì-síβ
Kugbo	x	è-ʃùsúβ
Oḍual	à-ra|:a:ì	è-ʃìsíβ ∿ ʃì-síβ
Ọgbia	(W) à-ɪ:àɣ-za	(E) ə-rùsùβ

x = no cognate was found

Table 3. PBC *CV- prefix incorporation into roots and pre-prefixation in Central Delta

/-za/ in the plural rather than being incorporated into roots. In most of the rest of the Central Delta languages PBC *CV- prefixes are replaced by V- prefixes which exhibit only one generalized singular/plural alternation (V-/I-) and that only for some nouns, many V- prefixes showing no alternation between singular and plural forms.

The net result of the above outlined processes is a [V prefix + root] structure for most Central Delta nouns, but with recoverable reflexes of PBC *CV- prefixes incorporated into many roots, especially in the plural.

		'tree'	'egg'	'husband, man'
PBC	S	*ki-	*li-	*ù-
	P	*bì-	*à-	*bà-
UPPER CROSS				
Kohumono	S	hè-sē	ré-sèrɛ̄	ò-rōm
	P	bè-sē	rá-sèrɛ̄	βà-rōm
Ukele	S	kɛ̀-s:ɛ̀	lɛ̄-s:ɛ̄lɛ̄	wanwo-lam
	P	bɛ̀-s:ɛ̀	?	bambe-lan
BENDI				
Bokyi	S	kì-tʃí	djí-cèé	x
	P	----	á-cèé	x
CENTRAL DELTA				
Abuan	S	ò-rép	è-ɣèlè	ò-lòm
	P	ì-rép	à-rèɣèlè ∿ rè-ɣèlè	ò-lòm
Kugbo	S	ò-rèrén	à-gá	ò-wòlòm
	P	ì-rèrén	rà-gá	ò-wòlòm
Oḍual	S	ò-rĕn	ò-gà	ò-l:òm
	P	ì-rĕn	ì-gá	ə-bùrùlòm ∿ bùrù-lòm
E. Ọgbia	S	ò-rèrén	à-gá	ò-w̃ùnòm
	P	ì-rèrén	à-gá	ò-w̃ùnòm
W. Ọgbia	S	ò-rén	à-gɛ́n	ò-w̃ùnòm
	P	ì-rén	à-gɛ́ń-zà	ò-w̃ùnòm

Table 4. Gradual collapse of singular/plural distinctions in Central Delta

2.4. Lower Cross: proliferation of the N- prefix. Plural nouns are distinguished from singular nouns in Oro and Efik only among the Lower Cross languages, and then only in a minority of cases (mainly nouns referring to humans in Efik). While incorporated prefixes are sometimes used for this purpose in these languages, the N- prefix is much more commonly used. The occurrence of the N- prefix in Lower Cross is by no means restricted to plural forms

in Oro and Efik, however. In all Lower Cross languages, the N- prefix occurs quite frequently on nouns which do not vary in form from the singular to the plural. CV- prefixes are non-existent in Lower Cross.

2.5. Reduced vowel inventories in Lower Cross prefixes. Only nine of the ten phonemic vowels of Lòkə (Upper Cross, see Runsewe [1982]) may occur in nominal class/concord prefixes, reflecting a general tendency among Benue-Congo languages which may play a significant part in the reduction of vowel inventories [Williamson 1982]. Via a process of merger and assimilation of prefix vowel quality to that of the following root, prefix vowel inventories have been significantly reduced in all Lower Cross languages. In Ibibio and Anaang, for example, roots containing -o or -ɔ may only be preceded by o- or ɔ- prefixes, respectively. Subject concord prefixes on verbs harmonize with root vowels in all Lower Cross languages except Obolo.

2.6. Lower Cross: limited prefix loss. Prefix-less nouns occur in all Lower Cross languages, except Oro. The proportion of nouns without a prefix is slightly higher in Obolo (from 5-10%) than in Efik, Anaang, or Ibibio (less than 5%) (see the plural form of 'woman' in Table 5 on the next page, for example). In Efik, some "prefix-less" nouns "regain" their prefixes when modified by (certain?) adjectives. Interestingly the quality of these "resurfacing" V- prefixes is not predictable and therefore must be included in the lexical specification of the noun.

EFIK [Cook and Ita 1967]:

$[\text{NOUN}]_{NP}$		$[\text{ADJECTIVE-NOUN}]_{NP}$	
bjà	'yam'	á-kànì à-bjà	'old yam'
bùd	'shame'	à-kámbà ó-bùd	'great shame'
bjɔ̀ŋ	'hunger'	à-kámbà ɔ́-bjɔ̀ŋ	'great hunger'

In the Okorete (Eastern dialect of Obolo as well as in the speech of children in that language, a syllabic nasal "prefix" bearing low tone occurs on nouns which are prefixless in the other dialects.

		INCORPORATED	V-/N- ALTERNATION		NO ALTERNATION
		'woman'	'chief'	'road'	'thing'
PBC	S	*ù-nina	x	*ì-fan	x
	P	*ba-nina	x	*í-fan	x
LOWER CROSS					
Oro	S	ɛ-ŋʷà	ɔ́-fɔ̄ŋ	à-fàŋ	Ń-kpɔ́
	P	Ǹ-mà	Ń-fɔ̄ŋ	Ǹ-fàŋ	----
Efik	S	(Ń)-ŋʷân	ɔ́-bɔ̄ŋ	à-fàŋ	Ń-kpɔ́
	P	ǹ-bân	N-bɔ̄ŋ	----	----
Anaang	S	N-ŋʷân	ɔ́-bɔ̄ŋ	à-fàŋ	Ń-kpɔ́
	P	ǹ-bàn	----	----	----
Ibibio	S	Á-ŋʷâ:n	Á-bɔ́:ŋ	à-fàŋ	Ń-kpɔ́
	P	ǹ-bâ:n	----	----	----
Obolo	S	ŋʷân	ú-bɔ́:ŋ	à-fɔ̀ŋ	Ń-kpɔ́
	P	ǹ-bâ:n	----	----	----

Table 5. Relics of singular/plural distinctions in Lower Cross

Examples:	OBOLO	'oil palm'	'children'
	Western and Northern Dialects	kô:k	bô:n
	Eastern Dialects	Ǹkô:k	Ǹbô:n
	children's speech	Ǹkô:k ∿ kô:k	Ǹbô:n ∿ bô:n

2.7. Ogoni: complete loss of prefixes. Among the Ogoni languages, Eleme stands out as the most conservative in terms of class/concord prefix retention. The Eleme system is in many ways similar to that of Obolo (Lower Cross) in terms of the proportion of prefixless nouns it contains and in terms of the predominance of V- and N- prefixes in the language. Some important differences exist between Eleme and Obolo, however, which indicate that Eleme has actually gone further than Obolo toward simplification of the PBC class/concord system. Eleme as well as the rest of Ogoni (except for some isolated

cases in Khana) differentiates itself from Obolo (and the rest of Cross River!) in that tone over prefixes is not contrastive (prefixes in the Ogoni languages either invariably bear low tone, as in Eleme and Ogoi or copy their tone from the initial syllable of the following root, as in most Khana forms). While both V- and N- prefixes occur in Eleme, the proportion of N- to V- prefixes is much higher in Eleme than in Obolo. Finally, only three contrastive vowel qualities (/a-/ , /E-/ and /O-/) are found in Eleme prefixes, showing an even greater tendency toward merger and harmonization than that noted above for Lower Cross (see section 2.5). In less conservative Ogoi, all V- prefixes are eliminated and only N- prefixes persist (usually on nouns which also take the N- prefix in Eleme as well). In Khana and Gokana class/concord prefixes are virtually non-existent. In all Ogoni languages (including Gokana), however, some independent pronouns bear an initial vowel (prefix) which in some persons agrees in quality with the corresponding dependent subject pronoun (subject concord prefix relic; see section 3.2).

		'tooth'	'tree'	'ashes'
PBC		*lì-/a- (5/6)	*ki-/bi- (7/8)	*-twáŋ
UPPER CROSS				
Kohumono	S	rè-táǹ	hè-sɛ̄	----
	P	rà-táǹ	bè-sɛ̄	ì-tɔ̀tɔ́ɪ (P only)
LOWER CROSS				
Efik	S,P	é-dèt	è-tɔ́	Ń-tɔ́ŋ
OGONI				
Eleme	S,P	à-dá:̄	è-té	Ǹ-tɔ̃
Ogoi		dá:̄	té	Ǹ-tɔ̃́
Khana		dá:̄	té	tɔ̃́
Gokana		dá:̄	té	(-rù)

Table 6. Class/concord prefix loss in Ogoni

3. Concordial Agreement

3.1. Upper Cross, Bendi, and Central Delta: conservative systems. In the Upper Cross, Bendi, and Central Delta languages, many languages (if not most) have retained most of the loci of concordial agreement which are traceable to proto-Benue-Congo, including pronominal, subject-verb, adjectival, determiner, demonstrative, and numeral concord points. Numeral concord is often a relic, usually holding only in the case of a few of the lowest numerals.

3.2. Lower Cross and Ogoni: relics of concord only. In the Lower Cross and the Ogoni languages, only a few relics of concordial agreement systems survive. In most of Lower Cross and Ogoni the only type of concord exhibited is limited to the agreement in some persons between the initial vowel (prefix) of the independent subject pronoun and the dependent verbal subject prefix.

OBOLO

ò-mɔ̂	ó -	nù	'he/she came'
he/she	3rd S dep. PN	come	
è-mâ	é	nù	'they came'
they	3rd P dep. PN		

In Oro and in Efik, however, noun-adjective concord occurs sporadically. In Oro, adjectives in some cases show singular/plural distinctions not normally marked on the nouns which they modify (this may be due to the fact that such adjectives are derived from verbs and their prefixes alternate according to patterns typical of dependent subject pronouns, as in the Obolo example just given).

EFIK [Cook and Ita 1967]

à-kánſ á-bjà-ìbɔ̀k	'old doctor'
old doctor	
Ǹ-kánſ Ń-bjà-ìbɔ̀k	'old doctors'

ORO [Kuperus 1978]

è-fjɛ́ á-bà	'white dog'
white dog	
ì-fjé á-bà	'white dogs'

4. Class/Gender Membership

4.1. Upper Cross, Bendi, and Central Delta: retention of PBC class/gender distinctions. As shown in Tables 2-4, the distinctions between the major classes and genders of proto-Benue-Congo are maintained in such Upper Cross and Bendi languages as Kohumono and Bokyi, but in languages such as Mbembe and Alege as well as in the Central Delta languages, there is a tendency toward the merger of singular classes into a single class marked by /O-/ and the merger of plural classes into a single class marked by /ɩ-/ , /e-/ , or /N-/ (see sections 2.4 and 2.5 above).

4.2. Lower Cross and Ogoni: complete loss of gender distinctions, partial loss of class distinctions. As shown in Tables 5 and 6, relics of plural prefixes /ì-/ or /N-/ occur sporadically in Lower Cross, while no plural prefixes at all are retained in Ogoni (except for one or two isolated cases in Eleme).[4] Only in the case of some of the reflexes of nouns belonging to the "human" (*1/2) gender of proto-Benue-Congo are singular/plural distinctions maintained throughout Lower Cross, via the incorporation of PBC prefixes into roots and subsequent pre-prefixation (see 'woman' in Table 5). Despite the high degree of class merger, the widespread loss of singular/plural distinctions (and the concomitant proliferation of the N- prefix across all classes) as well as the extensive reharmonization of prefix vowels to stem vowels which typify many Cross River (especially Lower Cross and Ogoni) languages, a few prefixes can still be associated (albeit rather loosely) throughout the subbranch with the semantic categories corresponding to one or another of the noun classes of PBC. A case in point is the "large animal" gender (PBC 9/10 *ì-/*í-) whose reflexes still show regular patterning throughout Cross River. (see Table 7 on the following page).

[4]My thanks to Kay Williamson for bringing this to my attention.

PBC 9/10 (*ì-/í-)	'animal, meat' (S/P)	'leopard' (S/P)	'goat' (S/P)
UPPER CROSS			
Kohumono	è-zɛ̀n/ì-zɛ̀n	è-kpɛ̀/ì-kpɛ̀	x
Ukele	ɛ̄-sɛ̄:n/ī-sɛ̄:n	N-bɛ	x
Lokə	è-tɛ̀ń/Ǹ-tɛ̀ń	è-kpɛ̀/Ǹ-kpɛ̀	è-bú/Ǹ-bǔ
Mbembe	è-tèn/Ǹ-tèn	è-tʃè/Ǹ-tʃè	-vú
BENDI			
Bokyi	è-ɲàm	----	x
Alege	í-njã	ɩ-kpɔ̀ŋ	x
CENTRAL DELTA			
Abuan	ɛ-nam/ɩ-nam	x	x
Kugbo	è-nàm/ìnàm	x	è-wèl/ì-wèl
Oḍual	è-nàm/ì-nàm	x	è-vèl/ì-vèl
E. Ọgbia	è-n:àm	(à-bírì)	è-wèl
W. Ọgbia	è-nàm/è-nàm-zà	(à-bírì)	è-wèl/ì-wèl
LOWER CROSS			
Oro	ú-nà	----	ó-fú
Efik	ú-nàm	é-kpè	é-bót
Anaang	ú-nàm	é-kpè	é-bót
Ibibio	ú-nâm	é-kpê	é-bót
Obolo	á-nâm	é-gbè	é-bót
OGONI			
Eleme	Ǹ-nã̄	Ǹ-kpê:	Ǹ-bó
Ogoi	x	----	Ǹ-bó:
Khana	nã̄m	kúè	----
Gokana	nɔ̃̄m	kpɛ̃	ból

Table 7. Reflexes of PBC "large animal" gender (9/10) in Cross River

5. An Implicational Scale for Class/Concord Systems Simplification in Benue-Congo?

Table 8 on the following page represents a summary of the developments outlined in the preceding sections of this work. At least four patterns exhibited by the data deserve further mention here because of their possible significance for the study of the evolution of class/concord systems throughout Benue-Congo (and perhaps Niger-Congo as well; see Demuth et al. [forthcoming]).

5.1. Class/gender distinctions: patterns of simplification. The Cross River data suggests the following, all other factors being equal:

(1) Class/gender distinctions are lost for [-animate] nouns before [+animate] nouns (see Table 7).

(2) Class/gender distinctions are lost for [-human] nouns before [+human] nouns.

(3) Gender distinctions are lost before class distinctions.

5.2. Concord points: hierarchy of persistence. All other factors being equal, the evidence from Cross River indicates the following hierarchy of persistence can be set up with agreement patterns least likely to be lost at the top and those most likely to be lost at the bottom:

PERSISTENCE HIERARCHY

1) Strongest: subject-verb concord
2) Strong: adjective-noun concord
3) Weak: other concord points, especially numeral-noun concord

5.3. Prefix shape: template-type processing and areal phenomena. The patterns of simplification of prefix shape outlined above for the Cross River languages suggest that prefix shape could be influenced to a large extent by areally-determined templates. In other words, the canonical form of class/concord affixes for each subgroup reflects a generalized areal pattern of prototypical prefix shapes. CV- prefixes are not only typical of many Upper Cross and Bendi languages, but also of the neighboring Bantu languages. N-prefixes are found throughout Western Benue-Congo as well as in some Western Bantu languages and, therefore, their widespread occurrence in the subgroups of Cross River which border on areas where these languages are spoken may not

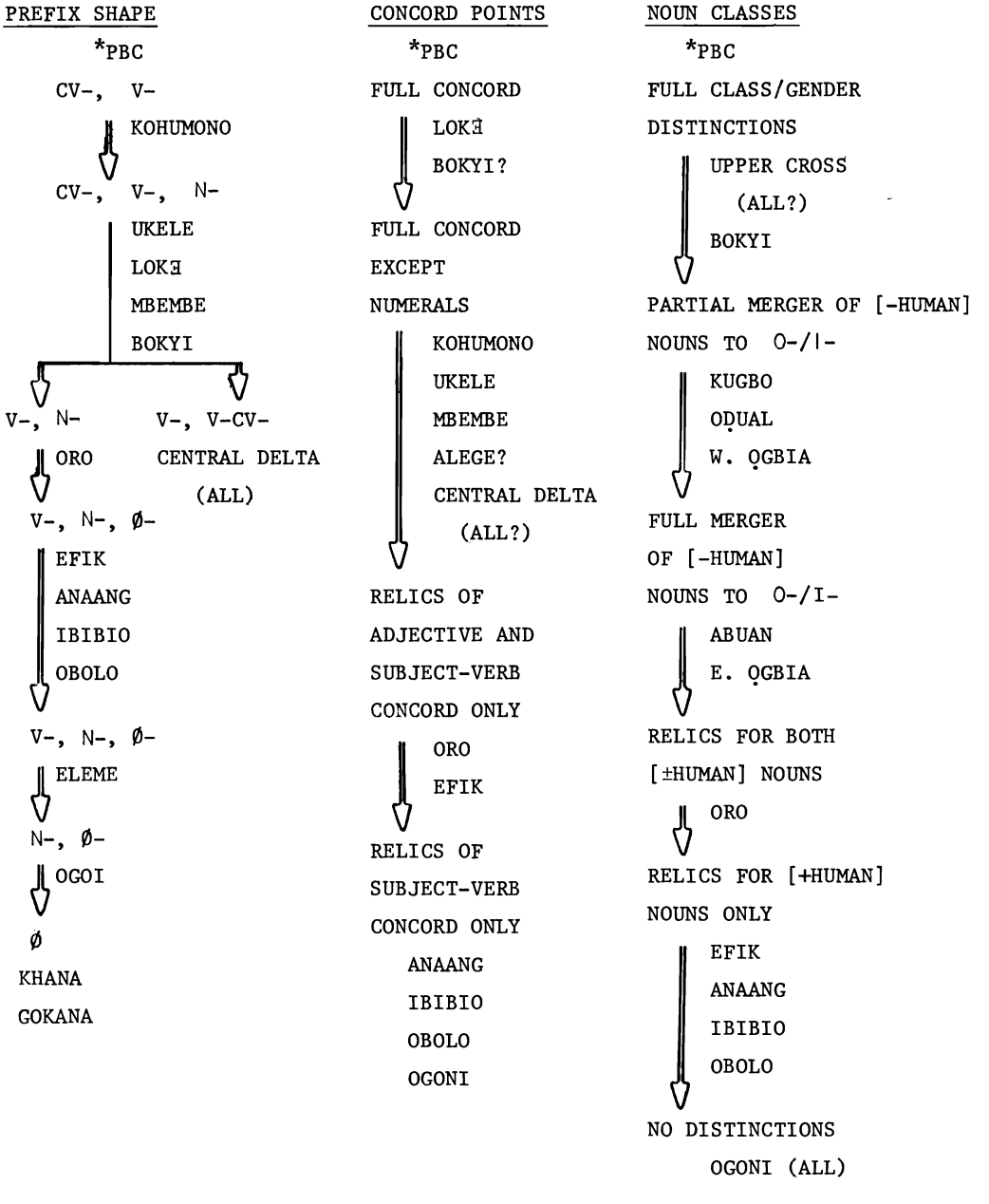

Table 8. Reflexes of the proto-Benue-Congo nominal class/concord system in Cross River

be as surprising as it would seem at first glance. The fact that the Ogoni and Lower Cross languages are spoken in close proximity to the prefixless Ịjọ languages may in part explain the occurrence of prefixless nouns in their inventories. The suffixation patterns found in W. Ọgbia may also correspond to a generalized tendency toward suffixation in neighboring Ịjọ languages. It should be stressed here that, due to the high frequency of intermarriage between speakers of different but geographically contiguous languages, many children of speech communities where Cross River languages predominate are actually raised by a parent who is not a native speaker of a Cross River language.

5.4. Primacy of concord over class: an argument for prosodic processing. As indicated in Table 8, morphological concord systems persist after both phonological marking of prefixes and morphosemantic class/gender distinctions are virtually reduced to zero in Gokana. This surprising fact would seem to indicate that class/concord systems are processed primarily as prosodies over entire phrases rather than as nomino-centric prefix copying systems. This argument is given further support by the "resurfacing" prefixes described for Efik in section 2.7 as well as by experimental language acquisition data for some Bantu languages [Demuth et al, forthcoming].

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TONE SPLITTING AND VOWEL QUALITY: EVIDENCE FROM LUGBARA*

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In recent surveys of tonal phenomena it is suggested that vowel quality rarely affects tone. In the present paper it is argued that one such case can be found in Lugbara. Internal and comparative evidence is presented that the vowel feature Advanced Tongue Root (ATR) has had an initiating role in tone splitting in Western Lugbara. It is demonstrated that the pitch of a vowel with a high tone was raised if the vowel was [+ATR], and it is suggested that the resulting tonal allophony was later phonemicized due to vowel merger and reduction or loss of segments.

1. Introduction

It is well attested that features of consonants can be part of the condition for the application of tone rules in tone languages and that they can play a crucial role in tonogenesis (see Hombert [1978], Schuh [1978], and Maddieson [1978] for recent surveys of tonal phenomena). Features of vowels, on the other hand, seem rarely to have influenced the historical development of tone (see Hombert [1978:96], Schuh [1978:224], and Maddieson [1978:354] for comments on putative cases). While it is widely recognized that high vowels generally have higher F_0 than low vowels, this phonetic correlation appears not to have phonological consequences. In the present paper it will be argued that, in Lugbara, tone has been affected by another dimension of vowel quality.

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2. Tone Systems of Lugbara and Related Languages

Recent information on the Moru-Madi langauges, which are spoken in the Zaire-Uganda-Sudan border area, indicates that they are discrete-level tone languages with three level tones (cf. Callinan [1981], Goyvaerts [1983], and Andersen [1984]).[1] However, in Lugbara, one of the languages of this group, there is dialectal variation as to the number of tones. The Terego dialect of Ugandan Lugbara has three tones like the other Moru-Madi languages, whereas at least some of the dialects of Lugbara spoken in Zaire have four. These two varieties will henceforth be referred to as Eastern and Western Lugbara, respectively.

The phonemic status of the four pitch levels in Western Lugbara is shown by minimal sets like the following:[2]

(1)	L	(=low)	fɪ̀	'it exploded'
	M	(=mid)	fɪ̄	'he entered'
	H	(=high)	fɪ́	'intestines'
	E	(=extra high)	fɪ̋	'they entered'
(2)			tɛ̀	'he waited'
			tɛ̄	'but'
			tɛ́	'to be thick'
			tɛ̋	particle indicating Recent Past
(3)			rà	'all'
			rā	'it flowed'
			rá	particle indicating Completed Action
			rā́	'they flowed'

[1]The Moru-Madi group includes the following languages: Moru, Avokaya, Logo, Kaliko, Lugbara, Madi, Lulubo. In Greenberg's [1966] classification, the group is a member of the Central Sudanic branch of the Chari-Nile family, which is a subfamily of the Nilo-Saharan phylum.

[2]In his description of (Western) Lugbara, Crazzolara [1960:11] is somewhat self-contradictory or vague as to the number of tones. On the one hand he distinguishes three tones throughout his grammar and dictionary, but on the other hand he claims there to be five distinct tone levels, his mid-tone comprising

It should be noted, however, that there seems to be no minimal set in which tone distinguishes four words belonging to the same distributional class, such as four nouns or four verb stems.

Both H and E in Western Lugbara correspond to H in Eastern Lugbara and in the other languages, while M and L correspond to M and L, respectively. Cf. the examples of cognate series in Table 1 (next page) which only includes languages from which the present author has collected data himself.[3] Conclusions regarding Avokaya and Logo rely on Callinan [1981] and Goyvaerts [1983]. The regular tone correspondences indicate that the 4-tone system in Western Lugbara has developed from a 3-tone system by splitting of H into H and E or that the 3-tone systems of the other languages have developed from 4-tone systems by merging of E with H. Before any conclusion can be reached on this matter, the distribution of the tones in Western Lugbara will be examined. As vowel quality turns out to be a crucial factor in the tonal distribution, the vowel system of Lugbara will be outlined first.

3. Vowel System of Lugbara

At the phonemic level Western Lugbara has a symmetrical 7-vowel system:

(4)

i		u
ɪ		ʊ
ɛ		ɔ
	a	

At the phonetic level, however, there are 9 vowel qualities. The phonemes /ɛ/ and /ɔ/ are phonetically [e] and [o], respectively, when they cooccur

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three tone levels. In addition he says that "an ordinary high tone may sometimes be surpassed by a higher syllable". While the last statement probably reflects his perception of the extra high tone, his claim about three mid tone levels is not confirmed by the findings of the present author.

[3]The Moru data contained in the present article are from the Miza dialect, which is spoken in the northern part of the Moru area. Both Moru and Lulubo are spoken exclusively in the Sudan. 'S(outhern) Madi' refers to a variety of Madi spoken in Uganda, while 'N(orthern) Madi' refers to Burulo, the northernmost Madi dialect, which is spoken in the Sudan. The Proto-Moru-Madi forms are reconstructions by the present author.

Table 1. Tonal correspondences among Moru-Madi languages

		W.Lugbara	E.Lugbara	S.Madi	N.Madi	Lulobo	Moru Miza	Proto-Moru-Madi
L	'two'	èrì	ìrì	èrì	èrì	rì	rì	*èrì
	'to go out'	fɔ̀	fɔ̀	fɔ̀	fɔ̀	fɔ̀†	fɔ̀	*pɔ̀
	'to die	drà	drà	drà	dà	ɖà	drà	*drà
M	'not'	kɔ̄	kɔ̄	kɔ̄	kɔ̄	kɔ̄	kɔ̄	*kɔ̄
	'stomach'	ʔā	ʔā	ʔā	ʔā	ʔā	yā	*ʔā
	'to spear'	ʃī	ʃī	ʃī	ʃī	ʃī	ʃī	*ʃī
H	'foot'	pá	pá	pá	pá	pá	pá	*pá
	'child'	mvá	mvá	ŋgwá	ŋgwá	ŋgwá	ŋgɔ́	*ŋgwá
	'blood'	àrí	àrí	àrí	èrí	èrí	kàrí	*(k-)àrí
E	'field'	ámvű	ámvú	ámvú	ámvú	ámbú	ʌ́mvú	*ʌ́mbú
	'tooth'	sî	sî	sî	sî	sî	sî	*sî
	'spear'	àdzű	àdzú	àdzú	àdzú	àdzú	ʌ̀zú	*ʌ̀dzú

†'to appear'

with /i/ or /u/ within a word. Furthermore, /i/ and /u/ do not cooccur with /ɪ/ and /ɔ/ . Thus, Western Lugbara has vowel harmony defined by the following sets of vowels:[4]

(5)

[+ATR]			[-ATR]		
/i/		/u/	/ɪ/		/ɔ/
[e]	[o]		/ɛ/	/ɔ/	
/a/			/a/		

The two sets are distinguished by the feature Advanced Tongue Root (ATR), which was suggested by Stewart [1967] to account for the type of vowel harmony found in the Akan language of Ghana and in many other African languages as well. In Western Lugbara /a/ is phonetically [-ATR] in both sets. In Eastern Lugbara, which has the same vowel system, /a/ is phonetically [+ATR], transcribed [ʌ], in the [+ATR] set.

4. Distribution of Tones

Although the four tones in Western Lugbara are phonemically distinct, there are certain restrictions on their distribution. As the restrictions are clearest in the case of verb stems, this subsystem of the language will be dealt with first. Inflected verb forms, which behave in a different way tonally, will be taken up in section 5.3.

4.1. Verb stems. The segmental structure of a verb stem is either CV, VCV, or VCVCV. For monosyllabic stems, only low and mid tones are possible. With disyllabic stems the following tone patterns occur:

(6)

V̀CV̀	àlɛ̀	'buy'	ɔ̀pì	'close'
V̄CV̄	ɛ̄rɪ̄	'hear'	ādɗ̄ī	'tie'
V́CV́	ávɪ́	'play'	édɗ́á	'show'
V́CV̋	édɗ́ű̋	'bring'	átsɪ̋	'walk'

Finally, there are two possible tone patterns for trisyllabic stems:

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[4]Crazzolara [1960] is vague as to the number of vowel phonemes in Lugbara, and he did not realize the existence of vowel harmony in the language.

(7) V́CV́CV̀ ɔ́kɔ́nà 'collect'
V́CV̋CV̀ ɛ́yɪ̋kɪ̀ 'think'

V́CV̋ and V́CV̋CV̀ stems have the tonal variants V̄CV̋ and V̄CV̋CV̀.

Whereas the final vowel can be either [+ATR] or [-ATR], in V̀CV̀ and V̄CV̄ stems it can only be [-ATR] in V́CV́ stems and only [+ATR] in V́CV̋ stems. Similarly the penultimate vowel of V́CV́CV̀ and V́CV̋CV̀ stems can only be [-ATR] and [+ATR] respectively. Thus, H and E are in complementary distribution in verb stems, H occurring only on [-ATR] vowels and E only on [+ATR] vowels. Within this subsystem of the language, H and E might, accordingly, be considered variants of one tone, say H. The occurrence of E could then be accounted for by a phonological rule to the effect that the pitch of H is raised if supported by a [+ATR] vowel. Taking into account the language as a whole, however, the phenomenon is more adequately treated as neutralization between H and E. Note also that there is free variation between M and H before E, another case of neutralization.

4.2. Nouns. In nouns (and adjectives) the distribution of the four tones is less straightforward than in verb stems. Like for the latter, there are no restrictions on the occurrence of L and M in terms of vowel quality. But whereas H normally does not occur on [+ATR] vowels, E occurs on both [+ATR] and [-ATR] vowels.[5] Thus there is a 4-way tonal contrast in [-ATR] words, but only a 3-way contrast in [+ATR] words (cf. (8) and (9) respectively):

(8)	L	bà	'breast'	àŋgɔ̀	'place'
	M	ʔā	'stomach'	ɔ̀tɔ̄	'navel'
	H	ɓɪ́	'hair'	àrɪ́	'blood'
	E	zɔ̋	'house'	ɔ̀tsɛ̋	'dog'
(9)	L	ɓù	'sky'	àbì	'wall'
	M	tī	'mouth'	ɔ̀mvū	'nose'
	E	bɪ̋	'eye'	ɔ̀ɗű	'thigh'

[5]In some nouns H does occur on a [-ATR] vowel, e.g. kùmútī 'knee' and ɔ̀kɪ́ⁿ 'wife'. But in such nouns the [+ATR] vowel comes from a [-ATR] vowel which has been assimilated to a following [+ATR] vowel. In the Zaki dialect of Western Lugbara the word for 'knee' is kɔ̀mɔ́ , to which other dialects have added the suffix -tī (which is also the word for 'mouth'). ɔ̀kɪ́ⁿ 'wife' probably comes from *ɔ̀kɔ́-pī , which consists of ɔ̀kɔ́ 'woman' and the kinship suffix -pī occurring as, for example, in ágű-pɪ̋ < *ágű-pī 'husband'.

At least two historical layers of nouns can be identified. All nouns which can be proved to belong to the Moru-Madi proto-language are either monosyllabic or begin with a vowel (and are most often disyllabic). From this fact it may be inferred that consonant-initial di- or polysyllabic nouns, unless they are compounds, are likely to be loanwords borrowed after the proto-Moru-Madi period. Nouns belonging to the older layer (exemplified in (8-9) above) resemble verb stems by not having extra high tone on word-initial vowels, whether the word is [+ATR] or [-ATR]:

(10) énɪ́ 'skin'
énɪ̋ [énɪ̋] 'night'

By contrast, nouns belonging to the newer layer may have extra high tone on any syllable:

(11) sɛ̋ndɛ̄ 'money'
mɔ̀kɪ́kà 'mat' (from Swahili mkeka)
pàkɪ́ 'parcel' (from French *paquet*)
lɪ̋pùmbʊ̋ 'flower'
kʊ̋mbʊ̋sʊ̋ 'gorilla' (cf. Lingala mòkómbósó 'chimpanzee')
rɔ̋pɔ̀ 'dress' (from French *robe*)
pʊ̋ndà 'donkey' (from Lingala mpúndà)

Another difference is that in the older layer very few simplex nouns have high tone on the [-ATR] vowels ɪ , a , and ʊ , whereas these combinations are frequent in the newer layer. Finally, in the older layer the frequency of extra high tone on final ɛ and ɔ in simplex nouns is considerably lower than the frequency of high tone in the same environment.

4.3. Other word classes. In words belonging to other classes, i.e. adverbs, ideophones, particles, and interjections, there are no restrictions on the distribution of tones in terms of position within the word or in terms of vowel quality, apart from a general absence of high tone on [+ATR] vowels. For instance, extra high tone often occurs on [-ATR] vowels (cf. the ideophones in (12)):

(12) kɔ̋kɔ̋kɔ̋ 'forcefully'
trɑ̋kɑ̄trɑ̋́ɑ̋ 'being on the point of falling'

Thus, words belonging to these classes behave tonally like the newer level of nouns, and in fact few of them can be proved to be part of proto-Moru-Madi.

5. Tone Split and Vowel Merger

5.1. Tone split. The non-occurrence of H on [+ATR] vowels (except in inflected verb forms to be treated below) could be explained as the result of a merger of H with E on such vowels. This hypothesis would imply that all the other Moru-Madi languages have uniformly merged E and H in all environments. A priori, it seems unlikely that the other Moru-Madi languages have developed tonally in the same way, as they constitute the periphery of the Moru-Madi area and have developed divergently with respect to vowels and consonants. More importantly, however, the hypothesis fails to explain (a) why no verb stems have E on [-ATR] vowels, (b) why there are (almost) no old simplex nouns with E on ɪ , ʊ , and a , and (c) why there are relatively few old simplex nouns with E on ɛ and ɔ .

A priori, a more likely explanation for the distribution of H and E would be that Western Lugbara originally had three tones like the other Moru-Madi languages and that E arose as a result of pitch raising of H on [+ATR] vowels. In order for this hypothesis to work, a further assumption is needed, viz. that at an earlier stage Lugbara had a 9-vowel system including *e and *o in addition to the present 7 vowel phonemes and that later *e and *o merged with ɛ and ɔ . A result of this merger would be that the allophonic variation between H and E had been phonemicized, and loanwords borrowed after that point would not need to conform to the prior distribution of E.

5.2. Vowel merger. The vowel merger hypothesized to explain the occurrence of extra high tone on [-ATR] vowels in Western Lugbara is confirmed by comparative evidence from other languages of the Moru-Madi group.

Like Lugbara, all the other languages of the Moru-Madi group have vowel systems with vowel harmony based on the ATR feature. What it commonly considered the prototype of such vowel systems is found in Moru, which has a completely

symmetric 10-vowel system as shown in Table 2, although the phonemic status of e , ʌ , and o is somewhat marginal. Madi and Lulubo have a 9-vowel system, lacking the phoneme ʌ . Avokaya and Logo have 7 vowel phonemes like Lugbara (cf. Callinan [1981] and Goyvaerts [1983] respectively).[6] But whereas Lugbara has a "full" [-ATR] set with five vowels in addition to two [+ATR] vowels, Avokaya and Logo have only four [-ATR] vowels and on the other hand three [+ATR] vowels.[7]

Table 2. Vowel systems of Moru-Madi languages

	[+ATR]					[-ATR]				
Moru Miza	i	e	ʌ	o	u	ɪ	ɛ	a	ɔ	ɷ
Avokaya	i		ʌ		u	ɪ	ɛ	a	ɔ	
Logo	i		ʌ		u	ɪ	ɛ	a	ɔ	
Lugbara	i				u	ɪ	ɛ	a	ɔ	ɷ
Madi	i	e		o	u	ɪ	ɛ	a	ɔ	ɷ
Lulubo	i	e		o	u	ɪ	ɛ	a	ɔ	ɷ

Both ɛ and e in Madi and Lulubo regularly correspond to ɛ in Lugbara in root final position (cf. the examples of cognate sets shown in Table 3). As nothing indicates that ɛ has split into ɛ and e in Madi and Lulubo, it can be concluded that the proto-language had an opposition between *ɛ and *e , which merged in Lugbara. In Moru the same merger took place, but only under certain conditions not yet fully understood.

Similarly, both ɔ and o in Madi and Lulubo normally correspond to ɔ in Lugbara in root final position (cf. the examples in Table 3). It should be noted, however, that there is not always agreement among Southern Madi, Northern Madi, and Lulubo as to the choice between ɔ and o . But even the occurrence of o

[6]Although Goyvaerts [1983] does not analyze the Logo vowel system in terms of vowel harmony, the data he presents are compatible with an analysis using vowel harmony.

[7]In Avokaya and Logo *ɷ has merged with ɔ , cf. Logo _fɔ̀ , Eastern Lugbara fɷ̀ 'to go out', and Avokaya a|ɔ , Eastern Lugbara à|ɷ 'one'.

*ɛ	'neck'	ɔ̄mbɛ̄	ɔ̄mbɛ̄	ɛ̄mbɛ̄	ɛ̄mbɛ̄	ɛ̄mbɛ̄	cɛ̄mbɛ̄	*(k-)ɔ̄mbɛ̄
	'to give'	fɛ̀	fɛ̀	hwɛ̀	kɛ̀	kwɛ̀	-	*kwɛ̀
	'arrow'	ʼjɛ́	ʔɛ́	ɛ́ʔɛʼ	ɛ́ʔɛ́	ɛ́ʔɛ́†	-	*ɛ́ʔɛ́
	'white'	ɛ̄mvɛ̄	ɪ̄mvɛ̄	ɪ̄ŋgwɛ̄	ɪ̄ŋgwɛ̄	àŋgwɛ̄	ɔ̀ndʒɛ́	*-ŋgwɛ
*e	'to wait'	tɛ̀	tɛ̀	tè	tè	ṯè	kɔ̄tɛ̀	*tè
	'to buy'	dzɛ̄	dzɛ̄	dzē	gē	gē	jɛ̄	*gē
	'to burn'	vɛ̄	vɛ̄	gwē	gwē	gwē	dʒē	*gwē
	'to call'	ɔ̄mvɛ̄	ɔ̄mvɛ̄	ūŋgwē	lūŋgwē	ūŋgwē	-	*lō-ŋgwē
*ɔ	'to pierce'	sɔ̀	sɔ̀	sɔ̀	sɔ̀	sɔ̀	sɔ̀	*sɔ̀
	'to chase'	drɔ̄	drɔ̄	drɔ̄	dɔ̄	ɖɔ̄	-	*drɔ̄
	'eight'	àrɔ̀	àrɔ̀	àrɔ̀	àrɔ̀	àrɔ̀	-	*àrɔ̀
	'hoe (blade)'	-	àtsɔ́	àtsɔ́	àsɔ́	àsɔ̄	-	*àtsɔ́
*o	'to say'	ʼjɔ̄	dzɔ̄	ʼjō	ʼjō	ʼjō	-	*ʼjō
	'to sing'	ŋgɔ̄	ŋgɔ̄	ŋgɔ̄	ŋgō	ŋgō	ŋgɑ̄	*ŋgō

Table 4. Regular and irregular reflexes in Western Lugbara of high tone in proto-Moru-Madi

		W.Lugbara	E.Lugbara	S.Madi	N.Madi	Lulubo	Moru Miza	proto-Moru-Madi
i	'house'	dzɔ̋	dzɔ́	dzɔ́	zó	dzó	zɔ́	*dzó
ii	'urine'	ɔ́drɛ̋	ɷ̄drɛ́	ūdré	ūdwé	íɖwé	kūdré	*(k-)ōdrwé
iii	'grass'	ásɛ̋	āyísɛ́	āyísé	āyísé	āyí	kʌ̄yí	*(k-)ʌ̄yí(-sé)
iv	'dog'	ɔ̀tsɛ̋	ɷ̀tsɔ́-ɔ́	ɔ̀tsɛ́	ɔ̀kɛ́	ɔ̀kɛ́	kɔ̀cɛ́	*(k-)ɔ̀kɛ́
v	'yesterday'	ádzɛ̋¯	ádzɛ́¯	ádzɩ́nɩ̄	ágɩ́nɩ̄	ágɩ́nɩ̄	-	*ágɛ́nɩ̄
vi	'granary'	ɛ̀rɔ̋	ɛ̀rá	ɛ̀rɔ́	ɛ̀rɔ́	ɛ̀rɔ́	cɩ̀rɔ́	*(k-)ɛ̀rɔ́
vii	'hare'	ɛ̀tɔ́-ɔ́	ɷ̀tɔ́-ɔ́	ìtó	ìtó	ìt̪ó	cɩ̀tɔ́-ŋwà	*(k-)ìtó
viii	'witch-doctor'	ɔ́dzɔ́-ɔ́	ɷ́dzɔ́-ɔ́	ɔ́dzɔ́	ózó	ɔ́zɔ́	kɔ́zɔ́	*(k-)ódzó
ix	'bird'	àrɩ̋-a̋	ɩ̀rɩ́-á	àrɩ́-áŋgwá	àrɩ́-áŋgwá	àrɩ̄	àrɩ́	*àrɩ
x	'rope'	ba̋(-ka̋)	̀bá(-ká)	ɩ̀bá	ɩ̀bá	ɩ̀bā	ɩ̀bā	*ɩ̀ba
xi	'basket'	ɛ̀vɷ̋	ɔ̀vɷ́	ɛ̀vɷ́	ɛ̀vɔ́	ɛ̀bɔ̋	-	*ɛ̀bV́

in only one of these languages is evidence that the word had *o in the proto-language and, accordingly, that *o has merged with ɔ in Lugbara.

The frequency of *e and *o seems to have been much lower than the frequency of *ɛ and *ɔ in the proto-language. This explains why extra high tone is less frequent than high tone on ɛ and ɔ in final position in old simplex nouns in Western Lugbara.

5.3. Reduction or loss of segments. The sound change *e , *o > ɛ , ɔ in Lugbara immediately accounts for some cases of extra high tone on ɛ and ɔ in Western Lugbara (cf. examples (i-iii) in Table 4). However, it appears that the vowel change is neither a sufficient nor a necessary condition for the presence of extra high tone on [-ATR] vowels in old nouns. Firstly, there are some words with ɛ̋ and ɔ̋ for which there is no independent evidence of a change from [+ATR] to [-ATR], (cf. (iv-vi) in Table 4). Secondly, some words have é and ó , although cognates in the other languages have the corresponding [+ATR] vowels (cf. (vii-viii) in Table 4). Thirdly, some words have extra high tone on the other [-ATR] vowels ɪ , a , and ʊ (cf. (ix-xi) in Table 4).

Although the specific mechanisms are not yet understood, it seems likely that these irregularities in the tonal correspondences have resulted from influence from the tone of reduced, assimilated, or elided suffixes. Note for instance that ètó-ó 'hare' in (vii) has a suffix which in Moru exists with a less reduced form -ŋwá (< *ŋgwá 'child').

That loss of tone bearing segments has had an effect on the distribution of the tones in Western Lugbara is shown clearly by the development of verbal inflexion. From a synchronic point of view, one class of non-finite verb forms is characterized by addition of H to the tone of the final stem vowel, whatever the quality of that vowel. Similarly, E is added as a plural marker, if the subject is third person plural. If the tone of the final stem vowel is M, the resulting compound tones MH and ME are simplified to H and E respectively. The contrast between H and E is shown by forms like the following:

(13)

Stem	Non-finite	3rd plural	
nɛ̀	nɛ́	nɛ̋	'see'
zì	zí	zĩ	'open'
sā	sá	sā̋	'bury'
ʃ̄u	ʃ́u	ʃ̋u	'take'

In Eastern Lugbara a third person plural subject is indicated by a suffix -kɪ́ added to the verb stem. It seems reasonable to assume that this suffix is what has developed into the non-segmental extra high tone plural suffix in Western Lugbara. The non-finite form with a non-segmental high tone suffix is used in a number of syntactic constructions, but in one of them, viz. relative clauses in which the relativized element is the object, the tonal suffix alternates freely with -lɛ́ . This -lɛ́ is probably the origin of the tonal suffix, an assumption which is further evidenced by the fact that in Southern Madi -lɛ́ is used in all the syntactic constructions where Western Lugbara has the tonal suffix. Why -kɪ́ has developed into an extra high tone while -lɛ́ has kept its high tone is still a mystery, however.

6. Conclusion

It has been shown above that in Western Lugbara the vowel quality feature [+ATR] has had the effect of raising the pitch of high tones in stem-final position. Furthermore, evidence has been presented that the tonal allophony resulting from this pitch raising was later phonemicized by a merger of non-high [+ATR] vowels with the corresponding [-ATR] vowels and by elision or reduction of segments. It is still an open question, however, what could be a phonetic explanation for the pitch raising.

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THE LEXICOSTATISTIC BASE OF BENNETT & STERK'S RECLASSIFICATION OF NIGER-CONGO WITH PARTICULAR REFERENCE TO THE COHESION OF BANTU*

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In 1977, Bennett and Sterk published a reclassification of the Niger-Congo languages which has been highly influential. In this paper I try to discover their lexicostatistic method (section 1), then use their published data to do a conventional lexicostatistic subgrouping (section 2), and finally look at their evidence for denying the genetic unity of Narrow Bantu (section 3).

1. Bennett and Sterk's Method

Bennett and Sterk's lexicostatistic method is not fully described in their 1977 paper: "A full account of the procedures followed and their theoretical justification is being prepared for publication elsewhere" (p. 242). Since this full account has to my knowledge not yet appeared, and since they obviously use new methods which they developed themselves, some interpretation is necessary.

Bennett and Sterk used a "computer-aided weighted count study" (p. 242). The weighting seems to have consisted of a three-level cognate scoring: Level 1 (the most "generous" one) counts every likely cognate; at Level 2 cognate sets may be split into several sets on the basis of variations (they provide the example |em vs. me| 'tongue'); at Level 3 even finer details (such as noun classes) are distinguished. In practice, however, only Level 1 provided

*I wish to thank Kay Williamson for her helpful comments on a draft of this small paper. She also was so kind as to let me use a file which she had been given by Jan Sterk, containing data and notes that were used for the Bennett and Sterk [1977] article. I am grateful for this chain of generous cooperation which helped me to a better understanding of how Bennett and Sterk reached their important reclassification of Niger-Congo.

useful results since already at Level 2 most relationships fell below their cut-off point of 18%. It therefore remains unclear how much "weighting" actually entered their lexicostatistics. (The similarity matrix corresponding to their Level 1 cognate scoring is reproduced in their article.)

Bennett and Sterk augmented their lexicostatistic study with a search for group specific innovations. "Where the two types of study disagreed, the innovation-based evidence was given preference" (p. 245). I shall briefly return to the proposed innovations in section 3 in as far as they concern Bantu.

Tree-generating lexicostatistics is based on hierarchical cluster anaysis. Bennett and Sterk use two devices which make straightforward hierarchical analysis impossible. The first one is their use of blanks for all scores of less than 18%. I think one is right to disregard values below 20%, just as I would not use this kind of lexicostatistics to classify a language group in which most members score more than 80% cognates. However, in order to calculate hierarchical clusters a blank as such is not a possible input. It has to be interpreted as some value, possibly even zero. In my own study I have decided to interpret Bennett and Sterk's blanks as representing the value 17%. Hence, my results say nothing about those most remote relationships, which is exactly what Bennett and Sterk and I want. Interpreting blanks as zero or some intermediate value would lead to gross and undesirable distortions in the calculations of branch averages.

The other feature which is unsuitable for hierarchical cluster analysis is that two figures are provided for each pair of languages. In other words, the distance between language A and language B is not necessarily the same as the distance between language B and language A. This is the result of Bennett and Sterk's way to handle blanks of which there are two kinds. The first kind simply represents missing entries. The other kind of blank arises when one language has two entries for one meaning and the other has only one. Suppose we have four words in two languages:

	A	B	
ear	1	1	
eat	1	1,2	
egg	1	2	
eye	0	1	[0 = no entry]

B shares two of the three words in language A (67%), but A only shares two of the five words in B (40%). If that is what Bennett and Sterk have done then languages with complete lists, i.e. few gaps, should consistently score lower than languages with less complete lists. Such languages do exist, e.g. Kikuyu and Tiv. Since there are quite a few cases where the distance A:B differs by ten or more points from the distance B:A I fear that for some languages the available lists contained rather more gaps than is desirable for any lexicostatistics.

Since I think one should base cognation percentages on the number of comparisons rather than words, I have decided to use for each pair of languages the higher of Bennett and Sterk's figures. The underlying assumption is that if the blank were filled in the item would have the same likelihood of being cognate as the average likelihood of all other items taken together. This may not be quite true if different words have different likelihoods of being replaced in the course of time (cf. Dyen, James and Cole [1967]) and if in addition short wordlists are more likely to contain more stable words than less stable ones. It is a purely subjective impression of my own that the last condition may be true. A wordlist containing the less stable item 'leaf' will almost certainly also contain the more stable item 'tree', whereas the inverse does not hold. Still, as long as the number of missing items is small the most common and quite acceptable method is to base the percentage of cognates solely on the number of actual comparisons.

2. A Pure Lexicostatistic Subclassification[1]

The two extreme methods for hierarchical subclassification are the Nearest

[1]The lexicostatistic calculations used for this paper were carried out with the program LEXISTAT. I have written this program in Pascal, to run on

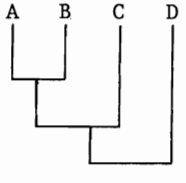
Neighbour (NN) and the Furthest Neighbour (FN) methods. They differ in what they take to be the distance (cognation percentage) between a cluster X and another cluster or language Y. NN assumes that the distance is equal to the closest distance between any member of X and (any member of) Y; FN takes the greatest distance as its measure. This can lead to competing clusterings when four or more languages are being classified. A hypothetical example will help to clarify the difference between NN and FN:

	A	B	C	D
A	-			
B	60	-		
C	50	40	-	
D	35	40	45	-

Nearest Neighbour

	AB	C	D
AB	-		
C	50	-	
D	40	45	-

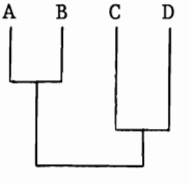
	ABC	D
ABC	-	
D	45	-



Furthest Neighbour

	AB	C	D
AB	-		
C	40	-	
D	35	45	-

	AB	CD
AB	-	
CD	35	-



IBM PC and compatible computers with PC-DOS or MS-DOS. LEXISTAT accepts either a table of cognation judgements or a similarity matrix as its input. It carries out several lexicostatistic analyses; it allows selective use of the cognation judgement table and the deletion of specified languages from particular cluster analyses. It produces tabular and graphic results. I would be happy to share this program with anyone who is willing to compensate me for the price of the diskette plus postage.

If the assumptions underlying lexicostatistics were fully correct, and if words were never borrowed between related languages (or could always be detected as such) then both methods should provide identical results. Unfortunately they seldom do. Nearest Neighbour (NN) typically produces "onion type" trees, i.e. a succession of splits between one or a few language(s) on one side as against the rest of the languages on the other side. Furthest Neighbour (FN) tends to produce more balanced trees. In principle, FN should be less distorted by borrowing between part of the languages of one branch and part of the languages of another branch. Various methods exist that mediate between NN and FN by taking various types of averages as the distance between clusters. That means that any node that appears in both extreme methods will also appear in any averaging method. Figures 1, 2, and 3 (in the Appendix) show the trees resulting from Branch Average (BA), NN, and FN subclassification. Table 2 gives the corresponding figures, and Table 3 contains the revised similarity matrix.

Accepting for the time being the reliability of the basic data I suggest interpreting these trees in the following way. First, let us accept all nodes that are common to both the NN and the FN trees. Then, on a somewhat lower level of confidence, let us accept the nodes that the BA tree shares with either the FN or the NN tree and that are not strongly contradicted by the "opposite" tree. The reasoning for this is that while FN, in principle, is most likely to produce genetic trees, both NN and FN are particularly sensitive to distortion by poor data, either primary or by wrong cognation judgements; this is where BA comes in as a corrective. In this way we may arrive at the following conclusions. There appear to be nine primary branches, and the largest of these may be divided into nine secondary branches (see list on following page). Branches marked with an asterisk represent nodes that are stable between NN and FN. Unmarked branches are less strongly supported. "(New) Kwa" represents Bennett and Sterk's "Western SCNC", i.e. the old Western Kwa. "(New) Benue-Congo" represents Bennett and Sterk's "Eastern SCNC", i.e. old Eastern Kwa plus Benue-Congo. According to the NN classification, (New) Kwa lacks internal unity presumably because a few figures have been inflated by

1. Fula*	9.1 Nupoid*
2. Dyola*	9.2 Idomoid*
3. Temne*	9.3 Yoruboid*
4. Kru*	9.4 Edoid*
5. Gur*	9.5 Igbo(id)*
6. Adamawa-Ubangi (?)	9.6 Jukunoid*
7. (New) Kwa	9.7 Cross-River
8. Ijo*	9.8 Plateau (?)
9. (New) Benue-Congo	9.9 Bantoid

areal contact. (New) Benue-Congo falls into three distinct branches in the FN classification; this is entirely due to a few scattered cognation scores below 18%. Adamawa-Ubangi has been marked as doubtful because it is only supported by the FN classification; in the BA classification, Tula clusters with the Gur languages and creates a link between Gur and Adamawa-Ubangi.

As far as the "primary" branches are concerned, our results do not disagree with those reached by Bennett and Sterk, though the 18% cut-off obliterates any possible evidence for the more detailed tree structure which they propose on different grounds.

The first six subbranches of (New) Benue-Congo are lexicostatistically stable between NN and FN subclassifications. The internal unity of Cross-River is not supported by NN because of the curiously low cognation scores between Efik and the other two representatives of this branch. Plateau is marked as doubtful, but in fact only the inclusion of Kambari is doubtful. Finally, Bantoid as a whole is not supported by NN because the non-Bantu Bantoid languages Tiv, Mambila, and Jarawan have individually varied affiliations within (New) Benue-Congo.

In summary then, lexicostatistics supports groupings rather similar to those proposed by Bennett and Sterk for their South-Central Niger-Congo, though the tree has less internal structure and notably lacks the intermediate nodes Central Niger and Benue-Zambesi.

3. The Internal Cohesion of Bantu

We have already found that Bantoid appears to be a lexicostatistically valid branch of (New) Benue-Congo since it appears in both the FN and the BA cluster analysis. In addition it must be observed that the internal structure of this branch is almost identical in both analyses, in particular the primary subdivision between non-Bantu Bantoid and (Narrow) Bantu. Moreover, (Narrow) Bantu is a stable node which appears not only in FN and BA but also in the NN tree. It would be unwise to base an internal subclassification of Bantu on the five languages represented in this study, but it must further be noted that there is no lexicostatistical evidence here to support the subdivision into "Equatorial" (Northwest Bantu: zones A, B, C, and part of D) and "Zambesi" (the remainder). Therefore, the present figures provide no support at all for the proposal by Bennett and Sterk that "the greatest departures from previous classifications lie ... among the Bantoid languages, now grouped under the heading Benue-Zambesi, where Guthrian Bantu does not appear to constitute a valid subgrouping" (p. 241).

I assume then, that the proposed disintegration (rather than just subclassification) of Bantu rests solely on (non-)shared innovations. Bennett and Sterk propose three isoglosses separating "Ungwa" (= Zambesi Bantu plus Tiv) from "Wok" (= Equatorial Bantu, Ekoid, and Mbam-Nkam plus Jarawan). Two of these isoglosses are defined as innovations: "Ungwa" has ungwa 'hear' where "Wok" has preserved wɔk , and "Wok" has -ɔŋ 'hair' where "Ungwa" has preserved SCNC nyúélé . The third isogloss concerns an item -baŋ 'red' which is found only in "Wok" (p. 261). The two innovations ('hear' and 'hair') may well refer to complex sound shifts, not to simple lexical isoglosses. The exact correspondences for these lexical items have not yet been worked out for (Narrow) Bantu.

Meeussen [1980] reconstructs *-jɟgɣ- 'hear' and notes uncertainty about the first vowel (ɟ/i/u) , the second vowel (ɣ/u) , and the medial consonant (g/ŋg..) . Guthrie's Common Bantu also contains -yɟ(n)g(ɣ)- and -yú(n)g(ɣ)- (plus some other variants). Bennett and Sterk's form wɔk is the equivalent of Guthrie's Bantu form -yúg- . The problem is complex be-

cause this verb is highly peculiar in its phonological make-up; it combines all the most difficult segment sequences in a rare, non-canonical shape. Since it is likely that all these forms are ultimately cognate, the real innovation could only be one of the sound shifts separating these forms. Zambesi Bantu attests both front and back vowels as V_1, and prenasalized as well as simple g as C_2. The only feature that consistently distinguishes Zambesi Bantu is the root final vowel ụ which has not been found in Equatorial Bantu. The loss of this vowel regularizes a phonologically deviant verb shape and might have occurred several times independently. At least, I find this more plausible than assuming the form -yúg- to be the retention.

The proposed "Wok" innovation is -ɔŋ 'hair', replacing the old nyuele , which is -juʃdí (cl.11) in the Bantu reconstruction by Meeussen [1980]; the initial nasal is at least for Bantu analysable as the class 10 prefix which is the regular plural for class 11. Forms corresponding to -oŋ (a "second degree aperture" vowel is more appropriate for Bantu) seem to be missing in Zambesi Bantu. However, it is not at all clear what the general Bantu form should look like; the clue could come from Londo (A.11) ɲ-ungá if this item is cognate. On the other hand, it seems that the form -juʃdí has survived in several Equatorial Bantu languages, though the exact sound correspondences have not been worked out.[2] I therefore hesitate to accept this isogloss—be it lexical or phonological—as evidence against the internal unity of Bantu.

Finally, Bennett and Sterk suggest that "Wok" languages are distinguished from "Ungwa" languages by reflexes of an item baŋ 'red'. Reflexes of this root do indeed occur in Equatorial Bantu, e.g. Bafia (A.53) -ɓaŋ 'become red/ripe/soft'. However, while 'red' is not one of the most stable words in Bantu, reflexes of *-pí- 'become burnt/cooked/hot/ripe/red' (with derived nouns and adjectives meaning 'fire', 'burnt grass', 'garden', 'hot', 'new', and 'red') appear in Equatorial and in Zambesi Bantu languages. (This root

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[2]An old Noho (A.32) vocabulary gives menjede 'hair'. Other possible reflexes are found in A.40 and A.60, e.g. Numand (A.46) tu-úɲ , Nukalong (A.67) tuúɲe . The reviewer of this paper has also pointed out that "some Zone A languages show both *ɔŋ and *jụidi as 'head-hair' and 'body-hair'."

has a wide distribution within Niger-Congo.)

Lexicostatistics can provide no more than a first hypothetical outline of a genetic classification. Conclusive evidence is hard to get from isoglosses, probably because we are unable to systematize in a useful way the facts of semantic change and language contact. The most promising approach to the complex problem of subclassifying Bantu and Bantoid languages appears to lie in the search for irreversible and characteristic sound shifts. This task still lies ahead. For the time being I know of no compelling evidence to deny the genetic unity of Bantu, which is moreover strongly supported by lexicostatistic inspection of the similarity matrix provided by Bennett and Sterk.

APPENDIX

Table 1: Language names, numbers, and codes

1.	GR	Grebo	26.	KJ	Kaje
2.	NE	Newole	27.	CH	Chori
3.	AS	Asante	28.	AF	Afusare
4.	LA	Larteh	29.	AT	Aten
5.	LE	Lelemi	30.	KM	Kambari
6.	GA	Ga	31.	JU	Jukun
7.	EW	Ewe	32.	KP	Kpan
8.	GW	Gwari	33.	TV	Tiv
9.	GD	Gade	34.	MB	Mambila
10.	NU	Nupe	35.	EL	Eloyi
11.	IA	Igbira	36.	TN	Tunen
12.	ID	Idoma	37.	JA	Jarawa
13.	IO	Igbo	38.	NY	Nyanja
14.	IG	Igala	39.	BO	Bobangi
15.	IF	Ife	40.	KK	Kikuyu
16.	YO	Yoruba	41.	KW	Kwanyama
17.	OR	Ora	42.	FU	Fula
18.	BI	Bini	43.	DY	Dyola
19.	UR	Urhobo	44.	TM	Temne
20.	IS	Isoko	45.	MO	Mossi
21.	DE	Degema	46.	KS	Kassena
22.	IJ	Ijo	47.	MP	Mamprusi
23.	AB	Abua	48.	TL	Tula
24.	EF	Efik	49.	GB	Gbaya
25.	OG	Ogoni	50.	ND	Ndogo

Figure 1: BA Subclassification

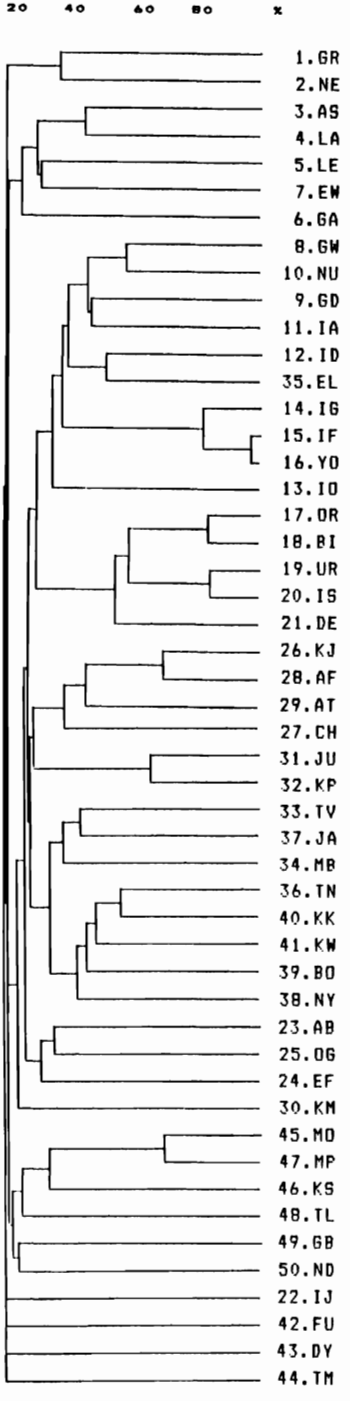


Figure 2: NN Subclassification

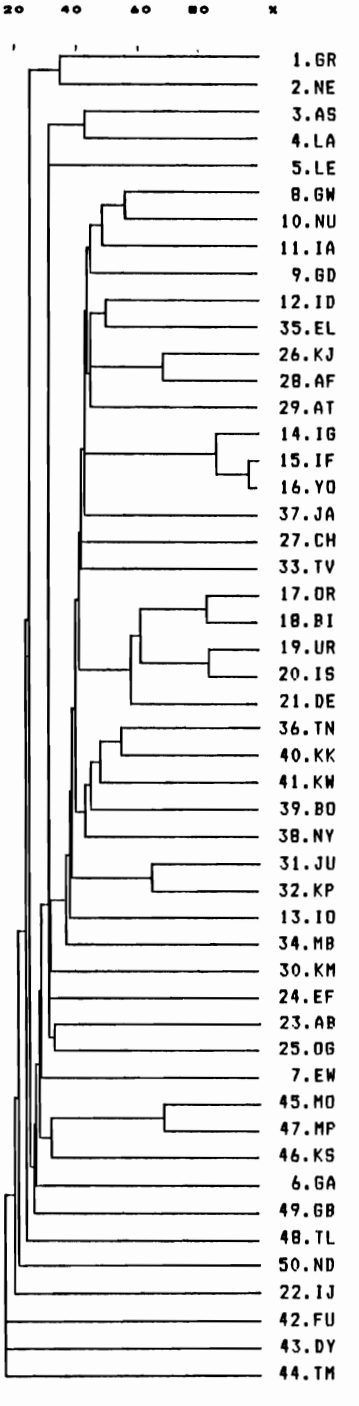


Figure 3: FN Subclassification

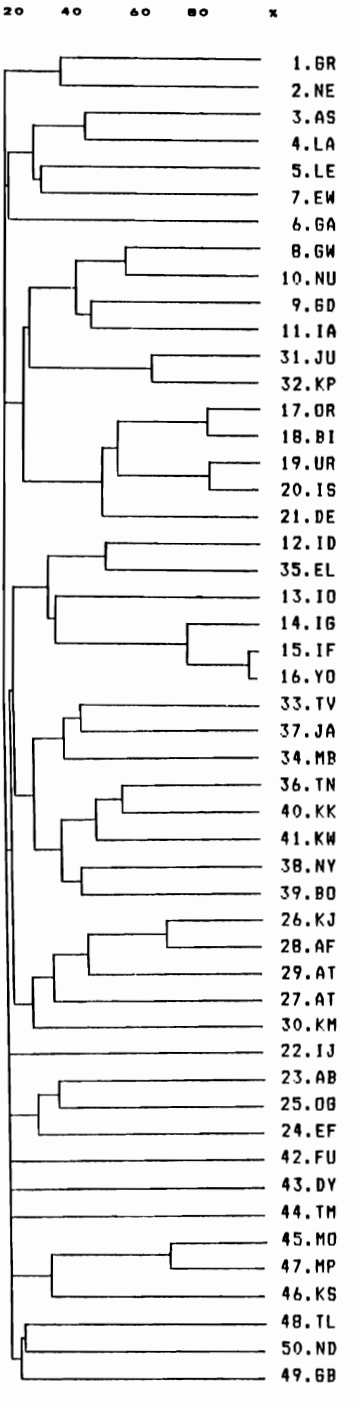
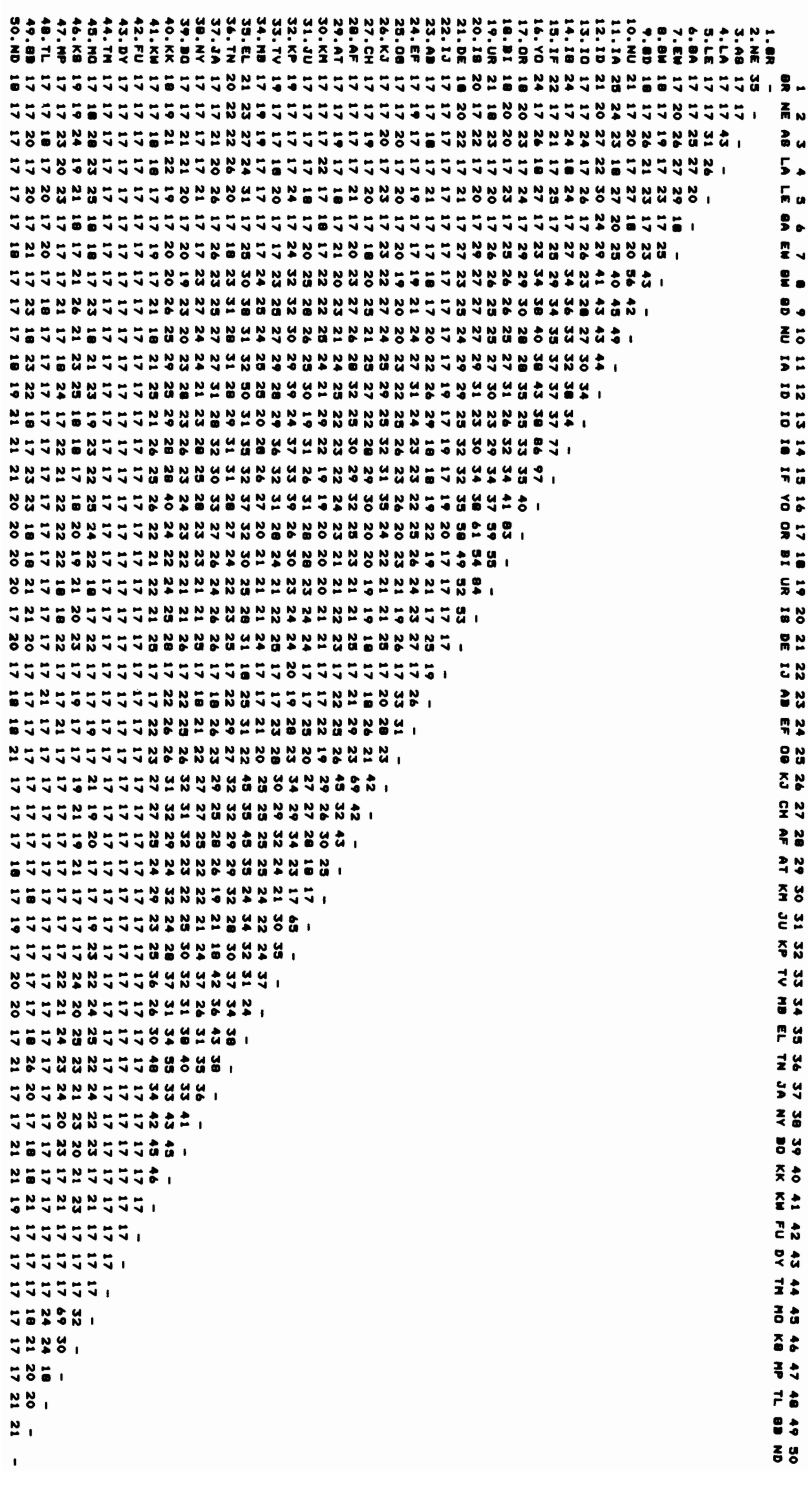


Table 2: NN, FN, and BA Cluster Analysis

	Nearest Neighbour			Furthest Neighbour			Branch Average		
	lg.x	lg.y	1/1000	lg.x	lg.y	1/1000	lg.x	lg.y	1/1000
cluster #1:	15	16;	970	15	16;	970	15	16;	970
cluster #2:	14	15;	860	19	20;	840	19	20;	840
cluster #3:	19	20;	840	17	18;	830	17	18;	830
cluster #4:	17	18;	830	14	15;	770	14	15;	815
cluster #5:	26	28;	690	26	28;	690	26	28;	690
cluster #6:	45	47;	690	45	47;	690	45	47;	690
cluster #7:	31	32;	650	31	32;	650	31	32;	650
cluster #8:	17	19;	610	8	10;	560	17	19;	573
cluster #9:	17	21;	580	36	40;	550	8	10;	560
cluster #10:	8	10;	560	17	19;	540	36	40;	550
cluster #11:	36	40;	550	12	35;	500	17	21;	530
cluster #12:	12	35;	500	17	21;	490	12	35;	500
cluster #13:	8	11;	490	36	41;	460	36	41;	470
cluster #14:	36	41;	480	9	11;	450	9	11;	450
cluster #15:	8	9;	450	3	4;	430	26	29;	440
cluster #16:	12	26;	450	26	29;	430	36	39;	438
cluster #17:	12	29;	450	33	37;	420	8	9;	435
cluster #18:	36	39;	450	38	39;	410	3	4;	430
cluster #19:	8	12;	440	8	9;	400	33	37;	420
cluster #20:	3	4;	430	33	34;	360	36	38;	408
cluster #21:	8	14;	430	1	2;	350	8	12;	378
cluster #22:	8	37;	430	36	38;	350	26	27;	370
cluster #23:	36	38;	430	13	14;	340	33	34;	365
cluster #24:	8	27;	420	23	25;	330	8	14;	359
cluster #25:	8	33;	420	26	27;	320	1	2;	350
cluster #26:	8	17;	410	12	13;	310	23	25;	330
cluster #27:	8	36;	400	45	46;	300	8	13;	328
cluster #28:	8	31;	390	5	7;	290	33	36;	317
cluster #29:	8	13;	380	3	5;	260	45	46;	310
cluster #30:	8	34;	370	23	24;	260	5	7;	290
cluster #31:	1	2;	350	33	36;	260	23	24;	285
cluster #32:	23	25;	330	26	30;	250	8	17;	278
cluster #33:	8	30;	320	8	31;	250	3	5;	275
cluster #34:	45	46;	320	8	17;	230	26	31;	269
cluster #35:	3	5;	310	48	50;	210	26	33;	257
cluster #36:	3	8;	310	12	33;	200	8	26;	247
cluster #37:	3	24;	310	48	49;	200	8	23;	237
cluster #38:	3	23;	310	12	26;	190	3	6;	225
cluster #39:	3	7;	290	3	6;	180	45	48;	225
cluster #40:	3	45;	280	1	3;	170	8	30;	214
cluster #41:	3	6;	270	1	8;	170	49	50;	210
cluster #42:	3	49;	260	1	12;	170	45	49;	195
cluster #43:	1	3;	250	1	22;	170	3	8;	183
cluster #44:	1	48;	240	1	23;	170	3	45;	181
cluster #45:	1	50;	210	1	42;	170	1	3;	175
cluster #46:	1	22;	200	1	43;	170	1	22;	171
cluster #47:	1	42;	170	1	44;	170	1	42;	170
cluster #48:	1	43;	170	1	45;	170	1	43;	170
cluster #49:	1	44;	170	1	48;	170	1	44;	170

Table 3: Similarity Matrix



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A PHONETICO-SEMANTIC ANALYSIS OF VERB-NOUN CONTRACTIONS IN YORUBA[1]

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This paper highlights the various studies which have been carried out to determine the rules which govern the elision of one of the vowels in a verb-noun concatenation where the verb is vowel-final and the noun vowel-initial. It proposes that there are basically three phonological rules which come into play at the Deep Structure Level. However, at the Surface Structure Level, the paper recognizes that there is a Semantic Dissimilation Principle (SDP), which may block the application of otherwise well-motivated rules. The SDP, then, guarantees maximal perceptual distance between otherwise homophonous products of the phonological rules.

0. Introduction

Quite a significant number of authors have given some attention to verb-noun contractions in Yoruba—Bowen [1858], Bamgbose [1965], Rowlands [1969], Courtenay [1969], Oyelaran [1972]. But up till now, no one has been able to produce a satisfactory formulation of the rules which govern the elision of one of the vowels in a verb-noun concatenation where the verb is vowel-final and the noun vowel-initial.

From the outright pessimism of Rowlands [1954:384]:

> "An examination of the cases of elision soon makes it clear that at the phonological level of analysis it is impossible to formulate any rule as to which vowel survives ..."

to the cautious optimism of Bamgbose [1972:13]:

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[1]This paper is partly based on experimental phonetic research carried out at the Université de Montréal, Canada between 1979 and 1980.

> "Perhaps future research on this subject should probe more deeply possible lexical and semantic factors that influence which vowel is elided or retained in these verb-noun combinations"

there have been interesting conclusions drawn from studies of verb-noun contractions in Yoruba.

In this paper, we shall first consider the salient points in previous studies (especially those by Bamgbose and Oyelaran), before attempting to propose a new analysis that eliminates the thorny problem of "exceptions" which pervade previous proposals.

1. Previous Studies

Oyelaran [1972] gives quite a detailed review of relevant literature to the topic under discussion. He also rightly suggests that while Rowland's approach is mainly syntactic, judging by such statements as

> "... we can explain the difference in treatment between bímọ̀ and bọ́mọ̀ by saying that in the first our attention is focused on the verbal, in the second, on the nominal ..." [Rowlands 1954:384]

Courtenay's is based on a criterion of "familiarity" that determines which verbs elide their final vowel and which do not. That is, the less familiar a verb is, the more likely it is to lose its vowel.

1.1. Bamgbose's proposal. As for Bamgbose's "principles of contraction", Oyelaran justifiably attempts to prove that their inventory is "observational and taxonomic". One can easily observe that some of Bamgbose's principles are inconclusive: "the vowel i whether of the verb or of the nominal is *almost* always elided"; while others betray analytical disorder: "the vowel a of a verb having a high tone is usually retained, except in the case of bá and wá where the vowel is elided" (that is, *tone* is a determinant of *vowel* elision!). However, Bamgbose's major contribution lies in his categorization of Yoruba verb-noun combinations into three groups: (1) those in which the vowels in contact are identical, (2) those that are always contracted, (3) those whose vowels in contact are not identical, and are not always contracted. Although Oyelaran replaces this tripartite approach with a bipartite one, the

basis of his work owes a lot to that of Bamgbose (and of course, Rowlands, as he himself points out).

1.2. Oyelaran's proposal. The cornerstone of Oyelaran's analysis of verb-noun contractions is his binary approach. He proposes that verb-noun combinations belong to two groups: Group I, consisting of such combinations which are analyzable as verbs alone and therefore, cannot be split up; and Group II, others that can be split up into "verb and noun". Despite its analytical appeal, Oyelaran's proposal has a major problem, that of determining what combinations belong to which group since some of them appear to be "amphibious" [Bamgbose 1972:12].

We may also add that it is in treating "apparent exceptions" (to his rules) that Oyelaran stumbles on what should have been his guiding-light, viz. vowel quality, which, unfortunately, remains idle throughout the formulation of his rules:

> "In the case of verb + noun, (VP), vowel elision is optional, and when it takes place, it is the vowel quality (non-tonal features) of verb final vowel features that are neutralized" [Oyelaran 1972:189].

Nonetheless, Oyelaran should be credited for proposing that vowels and tones should be treated as "autosegments" (though he does not use the term), each independent of the other in Yoruba [Badejo 1979; Akinlabi 1982]. Regretably, Oyelaran does not adhere strictly to this principle in his analysis.

2. A New Approach

It is our aim to re-orient research on this topic and put it on the path that may lead to a permanent solution. That is, since our main object is to determine the cases when the contraction of *vowels* does or does not take place, our concern should be with *vowel quality* and not the grammatical status of the segments (such as verb or noun) to which these vowels belong. This notion is very crucial for an adequate understanding of our analysis because it is precisely this change of focus which distinguishes our approach from earlier analyses. This means then, that we will concern ourselves with the phonological nature of the vowels in contact, irrespective of the lexical

items to which those vowels may belong.

2.1. Yoruba oral vowel system.[2] Standard Yoruba[3] is said to operate a system of seven oral vowels which may be represented as follows:[4]

(1)
```
i                   u
   e             o
      ẹ       ọ
          a
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See Bamgbose [1965] for an accurate phonological description of all of them.

2.2. Vowel distribution. Generally, there are certain distributional restrictions on particular vowels. A consideration of these will permit us to accurately predict the probability of vowel contact in Yoruba. Since we are dealing with verb-noun contractions, we shall focus our attention on restrictions that concern the final position (of the verb) and the initial position (of the noun). A seven-vowel system will, therefore, present seven-squared (7^2) possibilities, that is, forty-nine (49) different kinds of combinations. But then, it has been observed that the vowel /u/ does not occur in the initial position of a word (see Awobuluyi [1967] among others). Therefore, the actual number of combinations permissible in the language is derivable as follows:

(2) $7^2 = \underset{(p)}{49} - \underset{(np)}{7} = \underset{(a)}{42}$ combinations

p = "possible"; np = "non-permissible"; a = "actual"

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[2]We are limiting ourselves to the oral vowels alone for operational reasons. Akinlabi [1982], for example, considers nasality to be autosegmental in Yoruba. If he is right, then our analysis is bound to become more complex (since we would be dealing simultaneously with two autosegments: vowel and nasality), if we were to consider nasalized vowels.

[3]According to Bamgbose [1966], Standard Yoruba is a *koine*, which is used among speakers of different dialects, and it is the form used on radio and television by newscasters. Although it is largely based on the Oyo dialect, it is quite distinct and is associated with the urbanized Yorubas.

[4]The Standard Yoruba orthographic symbols ẹ and ọ represent IPA ɛ

2.3. Vowel contraction. Having established at the pre-contraction level the actual number of permissible combinations of vowels (in verb-noun concatenations) in Yoruba, we may now proceed to categorize these combinations. In other words, we would like to be able to predict what should happen in each case. In order to do this, we will rely on data obtained from our 1979 experimental phonetics research.[5] A comparative study of "deliberately slow" and "normal" speech reveals that, based on their comportment on contact with one another, Yoruba oral vowels may be divided into two groups: the high and the non-high:

(3) [+high] [-high]
/i/ and /u/ /e/, /o/, /ẹ/, /ọ/ and /a/

2.3.1. Contact between [-high] and [+high] vowels. We have observed that a [-high] vowel usually absorbs either of the [+high] vowels. A simple contraction rule (CR I) may be formulated as follows:

(4) CR I: $\begin{bmatrix} V \\ +high \end{bmatrix} \rightarrow \emptyset \; / \left\{ \begin{array}{l} \_\_ \begin{bmatrix} V \\ -high \end{bmatrix} \\ \begin{bmatrix} V \\ -high \end{bmatrix} \_\_ \end{array} \right\}$

CR I above would apply in such combinations as those in (5) and (6):

(5) gé igi → gégi
cut tree

(6) rí abà → rábà
see farmhouse

However, there are some apparent exceptions to which we shall return shortly. In the meantime, it will be observed that the rule in (4) deals with combinations involving inter-group contact. Of the 42 combinations postulated in

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and ɔ respectively.

[5]This project was undertaken in connection with my Master of Arts thesis at the Université de Montréal. It involved an analysis of two distinct types of recordings: one in which the speech of those recorded is deliberately slow, so as to be able to isolate individual words in the sentence, whilst the other type of recording involved "normal" speech, that is, speech at the pace of the average native speaker.

(2), there will be only 15 types (10 involving /i/ and 5 involving /u/, since the latter does not occur in word-initial position). This means that we have to consider intra-group contacts in order to account for the 27 remaining types of combination.

2.3.2. Contact involving identical vowels. 6 of the intra-group contacts involve identical vowels. For example:

(7) a. jí igi → jígi
steal wood

b. gbé ewé → gbéwé
carry leaf

c. jẹ ẹ̀jẹ̀ → jẹ̀jẹ̀
eat blood

d. pa aja → paj́á
kill dog

(We would rather talk of a "reduction" than a "contraction" here since both vowels in contact are identical.)

2.3.3. Contact involving [+high] vowels. There is the case of intra-group contact between the [+high] vowels. There is only one possible combination here (because of the restriction on the distribution of /u/). That is, the case in which the verb ends in /u/ and the noun starts with /i/, e.g.

(8) ru ìlù → rùlù
carry drum

A contraction rule (CR II) that governs this contact is formulated in (9):

(9) CR II: $\begin{bmatrix} V \\ +high \\ -back \end{bmatrix} \rightarrow \emptyset \; / \; \begin{bmatrix} V \\ +high \\ +back \end{bmatrix} \_\_$

2.3.4. Contact involving [-high] vowels. The remaining 20 types of combination are intra-group contacts involving [-high] vowels. In this case, it is the relative positions of the vowels in contact that determine which one is to be elided: the second vowel remains, whereas the first is elided:

(10) CR III: $\begin{bmatrix} V \\ -high \end{bmatrix} \rightarrow \emptyset \; / \; \_\_ \begin{bmatrix} V \\ -high \end{bmatrix}$

Abundant examples of cases in which CR III operates may be cited:

(11) a. ta (sell) ẹran (meat) → tẹran

b. fẹ́ (want) owó (money) → fówó

c. wá (look for) ẹ̀fọ́ (vegetable) → wẹ́fọ́

d. pe (call) ajá (dog) → pajá

e. jẹ (eat) edé (shrimps) → jedé

f. kó (take) ẹ̀kọ (pap (cake)) → kẹ́kọ

g. kó (move) ọjà (market) → kọja

2.4.1. Semantic Dissimilation Principle (SDP). Although rules CR I, CR II, and CR III are capable of explaining most verb-noun contractions, there are some exceptions which require an additional mechanism, the Semantic Dissimilation Principle (SDP), in order to explain their surface forms. In such cases, SDP blocks the application of the three CRs and in fact, reverses the fate of the two vowels in contact. Thus, for instance, CR II states that the vowel /i/ is assimilated by the vowel /u/ when both of them are in contact (see (5) and (6)). However, it is quite possible for the rule to be reversed where SDP intervenes (we did not come across any instance of this in our research possibly because we limited ourselves to verb-noun contractions alone). Instances of the intervention of SDP were, on the other hand, seen with regard to the two other rules, CR I and CR III. For example, (12) appears to disobey CR I

(12) rí (disgust) ara (body) → ríra (*rara)

whilst (13) seems to disobey CR III

(13) bu (dish out) ọbẹ̀ (soup) → bubẹ̀ (*bobe)

In the two cases just mentioned, our attention is focused on the post-con-

traction structures of the phrases, and so we judge them as "non-conformists". However, an examination of their pre-contraction structures, i.e. lexical structure, shows that they would be homonymous with other structures if they obeyed the basic contraction rules. For instance, in (14) the acceptable post-contraction structure is rara , the unacceptable post-contraction structure in (12):

(14) ra ara → rára
rub body

And in the case of (13), the unacceptable output bọbẹ̀ becomes the acceptable one in (15):

(15) bo ọbẹ̀ → bọbẹ̀
cover soup

In other words, apparent exceptions to our rules are explicable in terms of dissimilatory necessity. Compare (i) to (ii) in each case presented in (16) below:

(16) a. (i) bí ọmọ → *bómọ → bímọ
born child

(ii) bọ́ ọmọ → bómọ
feed child

b. (i) dú ẹran → *dẹ́ran → dúran
kill animal

(ii) do ẹran → dẹ́ran
have sex animal

c. (i) rú omi → *rómi → rúmi
stir up water

(ii) rí omi → rómi
see water

d. (i) tu ọkọ̀ → *tọkọ̀ → tukọ̀
paddle boat

(ii) ti ọkọ̀ → tọkọ̀
push vehicle

e. (i)	fẹ́	ọwọ́	→	*fọ́wọ́	→	fẹ́wọ́
	pilfering	hand				
(ii)	fá	ọwọ́	→	fọ́wọ́		
	scrape	hand				
f. (i)	ra	ẹsẹ̀	→	*rẹsẹ̀	→	rasẹ̀
	rub	leg				
(ii)	ra	ẹsẹ̀	→	rẹsẹ̀		
	buy	leg				

It will be observed that the appropriate contraction rule is blocked in (i), whereas the corresponding (ii) complies with the CR in each case. In (16ai, bi, ci, di), it is our CR I that is blocked, whereas in (16ei, fi) it is CR III that is blocked.

3. Conclusion

Vowel contraction in verb-noun combinations depends largely on the intrinsic qualities of the vowels themselves. The 42 actually possible combinations are governed basically by three phonological rules, CRI, II, and III. So, for example,

CR I: $\left\{ \begin{array}{l} /\_\_i + ẹ \_\_/ \\ /\_\_ẹ + i \_\_/ \end{array} \right\} \rightarrow [\_\_ ẹ \_\_]$

CR II: $/\_\_u + i \_\_/ \rightarrow [\_\_ u \_\_]$

CR III: $\left\{ \begin{array}{ll} /\_\_ẹ + a \_\_/ & \rightarrow [\_\_ a \_\_] \\ /\_\_a + ẹ \_\_/ & \rightarrow [\_\_ ẹ \_\_] \end{array} \right\}$

Nevertheless, a supplementary semantic principle (SDP) predicts that in certain cases, these well-motivated rules will not apply. It must be noted, however, that whereas the CR's apply at the Deep Structure Level, the SDP applies only at the Surface Structure Level. The mechanisms of the application of the latter may belong to the unconscious part of the native speaker competence, unless future research is able to prove otherwise.

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SOME YORUBA QUANTIFIER WORDS AND SEMANTIC INTERPRETATION

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This paper examines the need to look at quantifiers from semantic perspectives unconnected with logical, existential, or universal claims. The focus here is on the quantifier 'many' in Yoruba. Among other observations it is noted that the Yoruba quantifier ọ̀pọ̀|ọpọ̀ 'many' may occur only with those NPs that are viewed as animate.

1. Introduction

Quantifiers have been the subject of considerable discussion in recent linguistic theory. Unfortunately, much of the work has focused on logical analyses and universal or existential claims. One of the few attempts made to examine the secondary semantic properties of quantifiers (assuming that calling a quantifier "universal" or "existential" can be considered a primary property) is that of McCawley [1977]. McCawley identifies the contribution of different quantifiers to the semantic interpretation of sentences and establishes a number of criteria. This paper examines another set of criteria not found in English which affects the interpretation of quantified sentences.

2. Morphology

Yoruba has four morphological encodings for the quantifier 'many'. These are pọ̀ , púpọ̀ , ọ̀pọ̀ , and ọ̀pọ̀|ọpọ̀ . This choice of different forms has semantic implications. However, before we go into that it is first necessary to examine their possible derivational source.

Of these four words having the meaning 'many' the most primary is pọ̀ , all the other three can be said to be derived from it. This assumption is based on the following facts: Firstly, the other three words, namely, púpọ̀ , ọ̀pọ̀ , and ọ̀pọ̀|ọpọ̀ contain the word pọ̀ . The word pọ̀ is thus a common denominator for all. The second piece of evidence comes from word formation

rules in Yoruba. Yoruba has the characteristic of forming nouns from verbs and from other nouns. This is done through various processes the most notable of which are by prefixing and reduplication.

Prefixing: A nominalising prefix may consist of a single vocalic element. The prefixes are o- , ọ- , e- , ẹ- , i- , and a- . Following are examples of nouns formed through this process from Awobuluyi [1978]:

ì-bínú	'anger'	from the verb	bínú	'to be angry'
ì-murá	'preparation'	from the verb	murá	'to prepare'
ọ-gbọ́n	'wisdom'	from the verb	gbọ́n	'to be wise'
o-gbó	'old age'	from the verb	gbó	'to be old'
a-gọ̀	'folly'	from the verb	gọ̀	'to be stupid'
è-gbè	'chorus'	from the verb	gbè	'to chorus'

Reduplication: There are two main types of reduplication. The first, which is known as "partial" reduplication, involves taking the first consonant of the verb, adding the prefix i- , and prefixing the resultant to the verb.

lílọ	'act of going'
rírà	'act of buying'
sísùn	'act of sleeping'
kíkà	'act of reading'

The second type of reduplication, which is called "total" reduplication, involves repeating a complete word. Examples of such words are:

ọ̀sẹ̀ - ọ̀sẹ̀	'weekly'
ẹ̀gbẹ́ - ẹ̀gbẹ́	'edge'
lẹ́ẹ̀hìn - lẹ́ẹ̀hìn	'far behind'

This type of reduplication denotes emphasis. Sometimes a word linker is interposed between the parts of the word reduplicated. The two main linkers are -ní , and -kí . These are exemplified below:

ẹnikẹ́ni	(ẹni kí ẹni)	'anybody'
chunkóhum	(ohun kí ohun)	'anything'
àgbàlagbà	(àgbà ní àgbà)	'elderly'

Several phonological rules may affect such derived words. For instance, it can be seen from the above words that the -i of the linkers -kí and -ní above have been omitted. This is a result of a contraction rule existing in the language: when a word ending in a vowel is followed by another beginning with a vowel one of the two vowels, usually the first, is dropped [Bamgboṣe 1965]. This results in a contraction of the two words. This explains the absence of -í in ohunkóhun , ẹnikẹ́ni , and àgbàlagbà above.

Another phonological rule affecting the derived words is the n and l alternation rule. The consonants [n] and [l] are in complementary distribution. This rule has been examined in detail in Awobuluyi [1968]. Their occurrence is determined by the following sound. The consonant [n] occurs immediately preceding a nasal vowel while [l] occurs before oral or non nasal vowels. This explains why we have àgbàlagbà and not àgbànagbà . From the above evidence ọpọ can be said to be derived from pọ̀ by the addition of the prefix ọ̀- to pọ̀ . This type of prefixing applies mainly to verbs, and a study of the behaviour of the word pọ̀ shows that pọ̀ is a verb.

Pọ̀ occurs in predicate position:

(1) ọsàn án pọ ní Fìdítì 'oranges are many at Fiditi'
oranges ASP many at Fiditi

The other three quantifiers cannot occur in predicate position:

(2) *ọsàn án púpọ̀ ní Fìdítì
oranges ASP many at Fiditi

(3) *ọsàn án ọ̀pọ̀ ní Fìdítì
oranges ASP many at Fiditi

(4) *ọsàn án ọ̀pọ̀lọpọ̀ ní Fìdítì
oranges ASP many at Fiditi

Like a true verb pọ cannot occur in nominal position:

(5) *ọsàn pọ̀ wà ní Fìdítì 'there are many oranges at Fiditi'
oranges many are at Fiditi

(6) ọsàn púpọ̀ wà ní Fìdítì
oranges many are at Fiditi

(7) ọ̀pọ̀ ọsàn wà ní Fìdítì
many oranges are at Fiditi

(8) ọ̀pọ̀lọpọ̀ ọsàn wà ní Fídítì
many oranges are at Fiditi

It can be seen from the above that púpọ̀ , ọ̀pọ̀lọpọ̀ , and ọ̀pọ̀ are nominals while pọ̀ is verbal. The verbal characteristics of pọ̀ support our claim that ọ̀pọ̀ is derived from pọ̀ by prefixing.

The derivation of ọ̀pọ̀lọpọ̀ and púpọ̀ can be attributed to the second type of word formation process, reduplication. Ọ̀pọ̀lọpọ̀ is derived by total reduplication of ọ̀pọ̀ and the insertion of the linker ni . This yields ọ̀pọ̀nípọ̀ . Then contraction of the vowel i and the n and l alternation rule changes ọ̀pọ̀nípọ̀ to ọ̀pọ̀lọpọ̀ .

Finally we consider the derivation of púpọ̀ . Púpọ̀ too can be traced to the process of reduplication but this time the reduplication process is partial. In partial reduplication, only the initial consonant sound of the word is copied. This is followed by the insertion of i . First, the initial consonant of pọ̀ is copied followed by the insertion of i after the copied consonant. This results in pípọ̀ . The occurrence of u rather than i in púpọ̀ may be attributed to vowel harmony which exists in Yoruba. (For more on vowel harmony see Bamgbose [1976] and Oyelaran [1971].)

3. Syntactic Features

Although morphologically related, there exist certain syntactic and semantic differences among these words. As mentioned earlier pọ̀ differs syntactically from the other three in that it only occurs in predicative positions while the other three ọ̀pọ̀ , ọ̀pọ̀lọpọ̀ , and púpọ̀ occur in nominal positions:

(9) *èníyàn án pọ̀ lọ ibi ìkórè náà
people ASP many went place-of festival the

(10) èníyàn púpọ̀ ó lọ ibi ìkórè náà
people many ASP went place-of festival the
'many people went to the festival'

(11) ọ̀pọ̀lọpọ̀ èníyàn án lọ ibi ìkórè náà
many people ASP went place-of festival the
'many people went to the festival'

(12) ọ̀pọ̀ èníyàn á́n lọ ibi ìkórè náà
many people ASP went place-of festival the
'many people went to the festival'

Example (9) can be grammatical if we change the construction to that of a relative clause:

(9') èníyàn tí ó lọ ibi ìkórè náà á́n pọ
people that they went place-of festival the ASP many
'the people that went to the festival were many'

But the other three cannot occur in a relative clause construction.

(10') *èníyàn tí ó lọ ibi ìkórè náà púpọ̀
people that they went place-of festival the many
'the people that went to the festival were many'

(11') *èníyàn tí o lọ ibi ìkórè náà ọ̀pọ̀lọpọ̀
people that they went place-of festival the many
'the people that went to the festival were many'

(12') *èníyàn tí ó lọ ibi ìkórè náà ọ̀pọ̀
people that they went place-of festival the many
'the people that went to the festival were many'

Pọ̀ in this sense behaves like English 'many'.

Consider the English sentences below:

(13) Many people attended the reception.
(14) The people that attended the reception were many.

In (13) *many* is in a nominal position while in (14) it is in a predicative position. The difference between English and Yoruba here is that whilst English uses the same word for both positions, Yoruba uses different words.

What these syntactic characteristics indicate is that pọ̀ is in a different class from ọ̀pọ̀ , ọ̀pọ̀lọpọ̀ , and púpọ̀ . We shall classify pọ̀ as a predicative quantifier. Our attention will therefore be focused on the other three which show nominal characteristics.

Púpọ̀ differs in certain respects from ọ̀pọ̀ and ọ̀pọ̀lọpọ̀ . One of these differences is that of syntactic position. Púpọ̀ has relative freedom of posi-

tion as compared to ọ̀pọ̀ and ọ̀pọ̀lọpọ̀ in the sense that it can precede or follow the noun. The others can only precede their nouns.

(15) a. wọ́n fún púpọ̀ wa ní ìwé 'they gave many of us books'
they gave many of-us prep books

b. wọ́n fún àwa púpọ̀ ni ìwé 'they gave many of us books'
they gave us many prep books

(16) a. wọ́n fún ọ̀pọ̀lọpọ̀ wa ní ìwé 'they gave many of us books'
they gave many of-us prep books

b. *wọ́n fún àwa ọ̀pọ̀lọpọ̀ ní ìwé
they gave us many prep books

(17) a. wọ́n fún ọ̀pọ̀ wa ní ìwé 'they gave many of us books'
they gave many of-us prep books

b. *wọ́n fún àwa ọ̀pọ̀ ní ìwé
they gave us many prep books

However, all three quantifiers can be used partitively. This is illustrated below:

(18) mo mọ̀ púpọ̀ nínú àwọn ọmọ ilé-ìwé tí ń gbé ọgbà
I know many of them students that ASP live campus
'I know many of the students that live on the campus'

(19) mo mọ̀ ọ̀pọ̀ nínú àwọn ọmọ ilé-ìwé tí ń gbé ọgbà
I know many of them students that ASP live campus
'I know many of the students that live on the campus'

(20) mo mọ̀ ọ̀pọ̀lọpọ̀ nínú àwọn ọmọ ilé-ìwé tí ń gbé ọgbà
I know many of them students that ASP live campus
'I know many of the students that live on the campus'

4. Semantic Features

A number of semantic differences can also be found to exist among the three quantifier words. This can be seen if we contrast the quantifiers in similar sentences:

(21) ọ̀pọ̀ ènìyàn lọ ibi ìgbéyàwó náà
many people went place-of wedding the
'many people went to the wedding'

(22) ọ̀pọ̀lọpọ̀ èníyàn lọ ibi ìgbéyàwó náà
many people went place-of wedding the
'many people went to the wedding'

(23) èníyàn púpọ̀ lọ ibi ìgbéyàwó náà
people many went place-of wedding the
'many people went to the wedding'

The above sentences are not synonymous. The first difference relates to set size. The size of the set referred to by ọ̀pọ̀ for instance, is larger than that referred to by púpọ̀ . Ọ̀pọ̀ is used when the number is very large. There is an additional implication, which is that the number is excessively large, i.e. beyond normal expectations. This additional connotation is absent in (23), which simply means the number was large, i.e. many people went. Ọ̀pọ̀lọpọ̀ is the largest of the three in terms of set size. In addition to it being the largest it is also used for emphasis. This interpretation of ọ̀pọ̀lọpọ̀ is in line with its derivation. As we noted earlier ọ̀pọ̀lọpọ̀ is derived from ọ̀pọ̀ through total reduplication of ọ̀pọ̀ , and in Yoruba reduplication is one of the means used for conveying emphasis. Thus (22) is more emphatic than (21).

The above can be denoted succinctly in set notation as

ọ̀pọ̀lọpọ̀ ⊃ ọ̀pọ̀ ⊃ púpọ̀ .

Another difference that exists between ọ̀pọ̀lọpọ̀ , púpọ̀ , and ọ̀pọ̀ is that of variety. With púpọ̀ and ọ́pọ̀ the emphasis is on the number or largeness of the set, whereas with ọ̀pọ̀lọpọ̀ the emphasis is on the variety within the set. This difference affects the interpretation of the following sentences:

(24) a. ọ̀pọ̀lọpọ̀ èníyàn lọ ibi òkú náà
many people went place-of funeral the
'many people attended the funeral'

b. ọ̀pọ̀ èníyàn lọ ibi òkú náà
many people went place-of funeral the
'many people attended the funeral'

c. èníyàn púpọ̀ lọ ibi òkú náà
people many went place-of funeral the
'many people went to the funeral'

The difference between (24a), (24b), and (24c) is not merely that of size or quantity, but also that of variety. (24a) does not just mean that there were many people, it also emphasises that the people were from different backgrounds or disciplines, for example, lawyers, bankers, engineers, teachers, etc. This implication is absent from (24b) and (24c). This distinction is not made by all languages which have reduplicated quantifiers. For example, Twi also has two morphological encodings of the quantifier 'many', pii and bebree . However, the difference bewteen the two is mainly that of emphasis, bebree being more emphatic than pii , not different in variety.

Another related difference among the quantifiers is that of mass versus individual interpretation. In (24b) and (24c), where the quantifiers are ọ̀pọ̀ and púpọ̀ respectively, the interpretation is that of an undifferentiated mass of people. The implication is that it is impossible to identify individual guests. In (24a), on the other hand, many of the people can be recognized. In fact, this is a necessary condition demanded by ọ̀pọ̀lọpọ̀ . Ọ̀pọ̀lọpọ̀ is used only when the objects or persons are recognizable and distinguishable by the speaker. For example, if a friend wanted to tell me there was a large crowd at the wedding but she did not happen to know anybody there, the appropriate quantifier to use will be púpọ̀ or ọ̀pọ̀ (depending on the set size) rather than ọ̀pọ̀lọpọ̀ . Ọ̀pọ̀lọpọ̀ implies ability on the part of the speaker to be able to distinguish or recognize many of the individuals that comprize the set. Hence (24a) can elicit a question like (25):

(25) àwọn wo ni o rí ní bẹ̀? 'who did you see there?'
they who be you saw at there

The speaker can then go on to enumerate some of the people like I saw A, B, C, etc. But a similar sentence with púpọ̀ or ọ̀pọ̀ will not elicit such a question.

A third factor that influences the choice of quantifier word which seems to relate to the earlier two criteria is the criterion of animacy. Yoruba makes a distinction within NPs. One way in which this distinction is manifested is in the use of certain quantifier words. Certain NPs are treated as being higher in animacy than others. NPs that are regarded as higher in animacy are quanti-

fied by ọ̀pọ̀lọpọ̀ while those that are regarded as lower in animacy are quantified by either ọ̀pọ̀ or púpọ̀ . Consider for example the sentences below:

(26) *ọ̀pọ̀lọpọ̀ iyanrìn ló ṣe é po sí bẹ́ńtì
many sands be do INF mix cement
'many sands can be used to mix cement'

(27) ọ̀pọ̀lọpọ̀ igi ló ṣe é kọ́ ilé
many trees be do INF build house
'many trees can be used to build a house'

The difference in acceptability between (25) and (26) is that in Yoruba society iyanrìn is viewed as lower in animacy while igi is viewed as higher in animacy.

The Yoruba data here agrees with Bernard Comrie's [1981:Chapter 9] observation on animacy. Bernard Comrie observed that the so-called animacy hierarchy is a combination of several factors. One of these is the factor of individuation. Individuated objects as Comrie points out are viewed by humans as being higher in animacy than less individuated objects. Iyanrìn is inherently less individuated. For instance, it is difficult to distinguish one grain of sand from another. It is not surprising therefore that it is low in animacy and thus not qualified to be quantified by ọ̀pọ̀lọpọ̀ .

This animacy criteria does not however necessarily corretate with living and non-living things, i.e., whether an entity is a living object or a dead object. Consider for example the two sentences below:

(28) *ọ̀pọ̀lọpọ̀ ẹ̀fọn máa ń kú ní àsìkò ọ̀yẹ́
many mosquitoes habitual die at time cold
'many mosquitoes die during the cold weather'

(29) ọ̀pọ̀lọpọ̀ èèrà máa ń kú ní àsìkò ọ̀yẹ́
many ants habitual die at time cold
'many ants die during the cold weather'

Sentence (28) is considered unacceptable while (29) is acceptable although the quantified NPs in both sentences are living objects. The difference in acceptability is due to the fact that èèrà is considered as high in animacy while ẹ̀fọn is low in animacy. What seems to determine the animacy of an object in

Yoruba is whether or not the object is individuated.

In Yoruba ẹ̀fọn 'mosquitoes' are not perceived as individuated objects because they are, to the Yoruba, undifferentiable, i.e. you cannot differentiate one ẹ̀fọn from another, whereas èèrà is differentiable, e.g. in terms of size, form, colour or even smell, and therefore individuated. Thus èèrà can be quantified by ọ̀pọ̀lọpọ̀ . Other examples that illustrate this point are the sentences below:

(30) wọ́n kó ọ̀pọ̀lọpọ̀ ìwé dà sí àjà
they carried many books throw at loft
'they threw many books in the loft'

(31) *wọ́n kó ọ̀pọ̀lọpọ̀ koríko dà sí àjà
they carried many grass throw at loft
'they threw many grass in the loft'

Here again the unacceptability of (31) is attributed to the fact that koríko is not individuated. However, if we substitute the quantifier in (31) with púpọ̀ or ọ̀pọ̀ the sentence becomes acceptable.

(31) a. wọ́n kó koríko púpọ̀ dà sí àjà
they carried grass many throw at loft
'they threw a lot of grass in the loft'

b. wọ́n kó ọ̀pọ̀ koríko dà sí àjà
they carried many grass throw at loft
'they threw a lot of grass in the loft'

Thus, ọ̀pọ̀lọpọ̀ is used for human NPs and for non-human NPs and other objects that can be viewed as single individual entities.

5. Conclusions

From the above it can be concluded that objects that can take the quantifier ọ̀pọ̀lọpọ̀ are those objects that are viewed as high in animacy while those that cannot occur with this quantifier are viewed as low in animacy. It is clear from this that quantifiers do contribute in many ways to the interpretation of sentences. However, the nature of this contribution may differ from one language to another. Although in this study we have concentrated mainly

on the use of the quantifier 'many', it is hoped that the above data from Yoruba adds to the point already made by McCawley [1977] of the need co examine quantifiers from semantic perspectives unconnected with universality or existentiality.

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PUBLICATIONS RECEIVED

J. Delheure, *Timğğa d-Yiwaln n At-Mzab, Faits et dires du Mzab*. Etudes Ethno-Linguistiques Maghreb-Sahara, 4. Paris: SELAF, 1986. Pp. 332. no price listed.

[Résumé from the book]: "Who are the Mozabites, the people of Mzab? What practices and customs do they observe? What type of dwellings do they have, and what occupations? How do they behave in all the circumstances of life, from birth to death, in marriage and family life, and in their social relations? These questions are answered here by the people themselves, and in their own dialect. The style is lively, with a touch of humour, and seasoned with stories, parables and legends from which morals are drawn. The sections, of varying length, are translated into French and provided with a few footnotes. Obviously the book does not reveal the whole of Mzab. Here, as everywhere, some corners remain hidden. Nevertheless *Faits et dires du Mzab* gives a very good idea of the country and of the heart and soul of its people."

Hilke Meyer-Bahlburg and Ekkehard Wolff, *Afrikanische Sprachen in Forschung und Lehre: 75 Jahre Afrikanistik in Hamburg (1909-1984)*. Hamburger Beiträge zur Wissenschaftsgeschichte, Band 1. Berlin & Hamburg: Dietrich Reimer, 1986. Pp. xxii, 230. no price listed.

[Translated from the back cover]: "This history of Africanistics in Hamburg is a valuable source of both comprehensive bibliographic and biographical documentation. The authors devote special attention to the colonial political involvement of the knowledge of African languages which was initiated as an academic discipline in 1909 in Hamburg." In 8 chapters the authors outline the history of African studies at Hamburg during the colonial period and after and the history of the Seminar für Afrikanische Sprachen und Kulturen. Included are complete lists of publications of all African language scholars at Hamburg by year. An appendix summarizes the history of the Seminar, lists theses and dissertations from Hamburg, and lists the publications of scholarly series emanating from Hamburg.

Periodicals

Bulletin de l'Institut d'Etudes et de Recherches Interethniques et Interculturelles (IDERIC), No. 3, Mars 1986.

Summary of research, meetings, and publications of IDERIC (63, Boulevard de la Madeleine 06000 NICE).

Mega-Tchad, No. 1, 1986. ORSTROM, Laboratoire d'Archéologie Tropicale et d'Anthropologie Historique, *Méga-Tchad*, 70-74 route d'Aulnay, 93140 Bondy, FRANCE.

Semiannual newsletter for scholars interested in the history and prehistory of the Chad basin. This first issue contains summaries of papers presented at a colloquium held at Bondy, October 2-3, 1985, resolutions passed there, and a list of those in attendance.

Swahili Language and Society: Notes, News, No. 3, 1986. Institut für Afrikanistik der Universität Wien, Doblhoffg. 5/9, A-1010 Wien, AUSTRIA.

Other Recent Publications

Gerhard Böhm, *Elemente des Satzbaus in den Mandesprachen und ihre Verbreitung im Sudan*. Beiträge zur Afrikanistik, 21. Wien: Afro Pub, 1984. Pp. 172. AS 200.-.

Gerhard Böhm, *Grammatik der Kunama-Sprache*. Beiträge zur Afrikanistik, 22. Wien: Afro Pub, 1984. Pp. 140. AS 200.-.

Samuel Greengus, *Studies in Ishchali Documents*. Bibliotheca Mesopotamica, Vol. 19. Malibu, CA: Undena Publications, 1986. cloth $44.00, paper $34.00.

Francis Jouannet, *Prosodologie et phonologie non linéaire*. Linguistique Générale, 1. Paris: SELAF. 240 F.

Mary Alice Kraehe, Cristina W. Sharretts and Christine H. Guyonneau, *African Languages: A Guide to the Library Collection of the University of Virginia*, 2nd ed. Charlottesville, VA: Collection Development Department, Alderman Library 215, University of Virginia. $10.00.

Lynell Marchese, *Tense/Aspect and the Development of Auxiliaries in Kru Languages*. Summer Institute of Linguistics Publications in Linguistics, 78. Dallas: SIL Academic Publications, 1986. Pp. 200. $20.00.

Joan Maw, *Twende! A Practical Swahili Course*. Oxford: OUP, 1985. Pp. 344. £14.00.

Joan Maw and David Parkin (eds.), *Swahili Language and Society*. Papers from the Workshop held at the School of Oriental and African Studies, April 1982. Beiträge zur Afrikanistik, 23. Wien: Afro Pub. Pp. 348. AS 450.-.

Studies in African Linguistics
Volume 17, Number 1, April 1986

SEVENTEENTH CONFERENCE ON AFRICAN LINGUISTICS

Indiana University

April 3-5, 1986

Thursday, April 3

Morning

Session 1. MORPHOLOGY 1: BANTU

G. N. Clements, "Verb stem reduplication and morphological reanalysis in Bantu"

Livingstone Walusimbi, "Typology of imperatives in Luganda"

Debra Spitulnik, "Semantic superstructuring and infrastructuring in Bantu noun classes"

Alexandre Kimenyi, "Repetition in Kinyarwanda: a case of syntagmatic phonetic iconicity"

Deborah Schlindwein, "On the invisibility of the first person singular object marker in Kirimi"

Session 2. SYNTAX 1: TOPIC, FOCUS

Janet Bing, "Focus in Liberian Krahn"

Ismail Junaidu, "The nature of topicalization in Hausa"

Victoria Bergvall, "On the form and function of focus: evidence from Kikuyu"

Lioba Moshi, "Preverbal ni in Kirua Vunjo Chaga"

Phil A. Nwachukwu, "A unified transformational account of Igbo questions"

Session 3. PHONOLOGY 1: SYLLABLES, CONSONANTS

Donald G. Churma, "Evidence from a *ganoore* against an autosegmental morphological account of Fula consonant gradation"

Omar Ka, "Consonant alternation in Wolof"

Keren Rice & Elizabeth Cowper, "The phonological nature of Mende consonant mutation"

Ritsuko Miyamoto, "A note on some features of Fula in Sokoto State, Nigeria"

Afternoon

Session 4. MORPHOLOGY 2: SWAHILI

Carol M. Scotton & Yunus Rubanza, "An account of Kwa and Swahili instrumental

case nouns"

Rick Treece, "Kiswahili agreement for kinship terms: a new description"

Robert A. Leonard, "The Swahili system of deixis and its utilization in structuring of discourse"

Timothy Wilt, "A localist analysis of the Swahili applied suffix"

Lee S. Bickmore, "The lexical phonology of Swahili"

Kenneth Shepardson, "Swahili suffix productivity"

Session 5. TONE 1

William R. Leben, Sharon Inkelas, & Mark Cobler, "Tonal phrasing in Chadic"

Paul Newman, "A theory of tone in Hausa"

James J. Tyhurst, "Tone association and vowel deletion in Kenyang"

Barbara Levergood, "Kiarusha (Maa) phrasal tonology"

Charles W. Kisseberth & Eluzai M. Yokwe, "Melodic and non-melodic aspects of Bari tonology"

Sharon Inkelas, "Tone shift and cyclicity in Chaga"

John R. Watters, "Tone in Ejagham (Etung): an autosegmental account of nominal and verbal forms"

Session 6. MORPHOLOGY 3

Jean Lowenstamm, "On the origins of type B verbs in Amharic"

Halima Kamaye & John P. Hutchison, "Aspects of Gur noun phrase typology: Gulmancema"

Keith Denning, "Morphological class and the structure of the morphological component: the Dinka noun"

Bernd Heine, "Possessive constructions and grammaticalization theory [Acholi, Kabiye]"

Francis Jouannet & Annie Rialland, "Faits prosodiques et structuration morphologique en Teda (langue saharienne de Tibesti)"

Ishetu Kebbede, "The verb "to be" in Oromo"

Friday, April 4

Morning

Session 7. PHONOLOGY 2

Moussa Bamba & Emmanuel Nikiema, "De la représentation phonologique de la nasalité dans les langues naturelles [Mahou, Lobiri, Dagara]"

José Tourville, "The representation of vowel nasality in Jula"

Mwamba Kapanga & Baber S. Khan, "The inadequacies of CSS rules: a case study from Dzamba"

Maria-Rosa Lloret-Romañach, "Grammatical marking and final vowels in Oromo"

Aleksandra Steinbergs, "Morphophonological processes in Oshikwanyama nouns"

Yousef Bader, "Verb morphology in Kabyle Berber: an autosegmental approach"

Tucker Childs, "Just another tone or a new system of prominence? [Kisi]"

Session 8. SYNTAX 2: BANTU

Kasangati Kinyalolo, "On the verb-subject word order in some Bantu languages"

Katherine A. Demuth & Mark E. Johnson, "Interactions of discourse functions and agreement in Sotho"

Lukowa Kidima, "Object agreement and topicality hierarchies in Kiyaka"

Eyamba G. Bokamba, "A mirror image phenomenon in Bantu syntax"

Jose Hualde, "Double object constructions in Kirimi"

Hussein A. Obeidat & Mwamba Kapanga, "Passivization and relativization in Shaba Swahili: a relational analysis"

Firmard Sabimana, "Does Kirundi have indirect objects?"

Session 9. CREOLES AND PIDGINS

Rose-Marie Déchaine, "An account of serial verb constructions in Haitian Creole"

Derek Nurse, "Has Swahili ever undergone creolisation?"

Nicholas Faraclas, "Toward a panlectal grammar of Nigerian Pidgin"

C. T. Msimang, "Impact of Zulu on Tsotsitaal"

Baltasar Fra Molinero, "The Pichinglis of Equatorial Guinea"

Session 10. LANGUAGE PLANNING, PEDAGOGY

Meterwa A. Ourso, "Polyglossia: the case of Togo [Ewe, Kabye, French]"

Mangoma Sumbu, "Penetration and choice of Kikongo in Bundundu Region (Zaire)"

Frank Wright, "Open market and closed classroom: an ethnography of language learning [Hausa, English]"

Janet Barrett, "Oromo tapestry"

Sammani Sani, "Towards an identification of Nigerian Standard Arabic"

Makasa Kasonde, "The basis of a Swahili menace in Zambia"

Abdel-Hadi Omer, "Arabic in the Sudanese (African) setting"

Afternoon

Session 11. SYNTAX 3

Lucia N. Omondi, "Dholuo NP movement: syntax and semantics of the trace theory of movement rules"

Helma Pasch, "The relator ti as a subordinating particle in Sango"

Fritz Serzisko, "Directionality in Ik (Kuliak)"

Session 12. MORPHOLOGY 4

Ronald P. Schaefer, "Lexicalization of manner and cause in Emai"

Robert L. Carlson, "Here and there, now and then: the grammaticalization of deictic verbs in Supyire"

Victor Manfredi, "Igbo infinitives and the case filter"

Session 13. LANGUAGES IN CONTACT

P. V. Premaratne, "Interference of Efik in English"

John Schneider, "African lexical borrowings: an analysis of their distribution by regions in Brazil [Bantu]"

Rajia Effat, "Structural differences between Swahili and English"

Session 14. LANGUAGE VARIATION, CODE-SWITCHING

Carol M. Scotton, "A markedness model of codeswitching as indexical of social negotiotions [Swahili]"

Eyamba G. Bokamba & Nkoko Kamwangamalu, "The significance of code-mixing to linguistic theory [Bantu]"

HANS WOLFF MEMORIAL LECTURE

Bernd Heine, "The Rise of Grammatical Categories: Cognition and Language Change in Africa"

Saturday, April 5

Morning

Session 15. TONE 2: BANTU

Mary M. Clark, "The role of the obligatory contour principle (the OCP) in the tonal phonology of Zulu"

Charles W. Kisseberth & Zacharia Mochiwa, "Some principles of Kizigua tonology"

Farida Cassimjee, "The role of low-deletion in Venda tonology"

Larry M. Hyman & Livingstone Walusimbi, "Tone reduction and syntax in Luganda"

Annie Rialland & Rutinywa Furere, "Tons, pieds et structures de dépendance en Kinyarwanda"

Jonnie Kanerva, "A cyclical analysis of tone in Chichewa verbs"

Joseph C. Drogo, John Goldsmith, & Karen Peterson, "Accent and tone in Xhosa verbs"

Session 16. PHONOLOGY 3: VOWELS, VOWEL/CONSONANT HARMONY

Russell G. Schuh, "Long vowels and diphthongs in Miya and Hausa"

Mary Laughren, "Status of the feature high in defining Senoufo vowels"

Christian Dunn & Michael Rouzier, "Les emprunts au français en Jula: processus de réinterprétation"

James Khumalo, "Consonant harmony in Zulu"

Sandra Filipovich & Mireille Tremblay, "The case of u in Tigre: towards a theory of phonological government"

B. O. Akioya, "Prolegomena to Edo (Bini) morphology"

Session 17. HISTORICAL

M. Lionel Bender, "Nilo-Saharan grammemes"

David J. Dwyer, "The early development of Mande"

Haig Der-Houssikian, "Linguistic archeology: the reconstruction of the noun class and concord system of a West African language (Tem/Cotocoli)"

Yime-Yime Katesi, "On the classification of Engwi (Ngoli)"

Carleton T. Hodge, "Lis-ramic and the prothetic alif"

Zygmunt Frajzyngier, "Two sources of locative extensions in Chadic"

Philip J. Jaggar, "From perfective to detransitive in Hausa: the case of the so-called "Grade 7" verb"

Session 18. JOINT SESSION WITH AFRICAN ARCHIVES LIBRARY COMMITTEE

Chair: Gretchen Walsh

Discussion topics: a) possibility of a "union" list of African language materials in major U.S. African Studies collections; b) acquisition and cataloguing priorities of African language materials; c) libraries' problems in identifying, acquiring, cataloguing, and processing African language materials.

Session 22. CAI WORKING SESSION

Chair: Eyamba Bokamba

University of Illinois demonstration of computer-assisted instruction in Swahili and Wolof, using the IBM PC interfaced with an Instavox audio device. Innovative features include audio interaction with native speaker recordings, on-line target language-English glossaries, videotaped cultural units.

Afternoon

Session 19. SYNTAX 4

Linda J. Schwartz, "Asymmetrical syntax and symmetrical morphology in African languages [Niger-Kordofanian, Nilo-Saharan, Chadic]"

Remi Sonaiya, "WH-movement of proper government in Yoruba"

E. Nọlue Emenanjọ, "How universal is transitivity? [Igbo, Akan, Ewe, Yoruba, Obolo]"

M. A. Mohammad IV, "Nominative case assignment in Modern Standard Arabic"

Wafaa Faheem Wahba, "On government in classical Arabic"

Session 20. LANGUAGE AS VERBAL ART

Daniel Avorgbedor, "Aesthetic foundation of the creation of new texts in Anlo Ewe"

Addisu Tolesa, "Ethno-historical background of Oromo language and literature"

Charles I. Nero, "The persuasive uses of proverbs in traditional African societies"

Enoch Mvula, "Women's words of power: Chichewa songs as performative acts"

Session 21. MORPHOLOGY 5: TENSE, ASPECT, MODALITY

Karen Peterson, John Goldsmith, & Joseph C. Drogo, "Accent and extra-metricality in the Xhosa final vowel"

Ashley Lommers-Johnson, "The semantics and morphology of Zulu aspect"

Robert Botne, "Conceptual boundaries and the tense systems of Kinyarwanda and Kikerebe"

John V. Singler, "Liberian English modality"

Rebecca Burns, "The verbal suffix e in Kru"

Selected papers from the conference will be published by Foris Publications as "Current Approaches to African Linguistics".

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In preparation for future African Linguistics conferences in North America, conference organizers are trying to increase the mailing list which passes from year to year to the host institution. We encourage scholars, especially those in Africa, Asia, and Europe, to send names of scholars involved in African language research to

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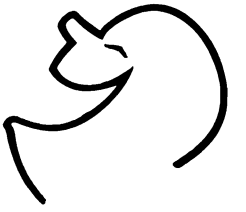

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