

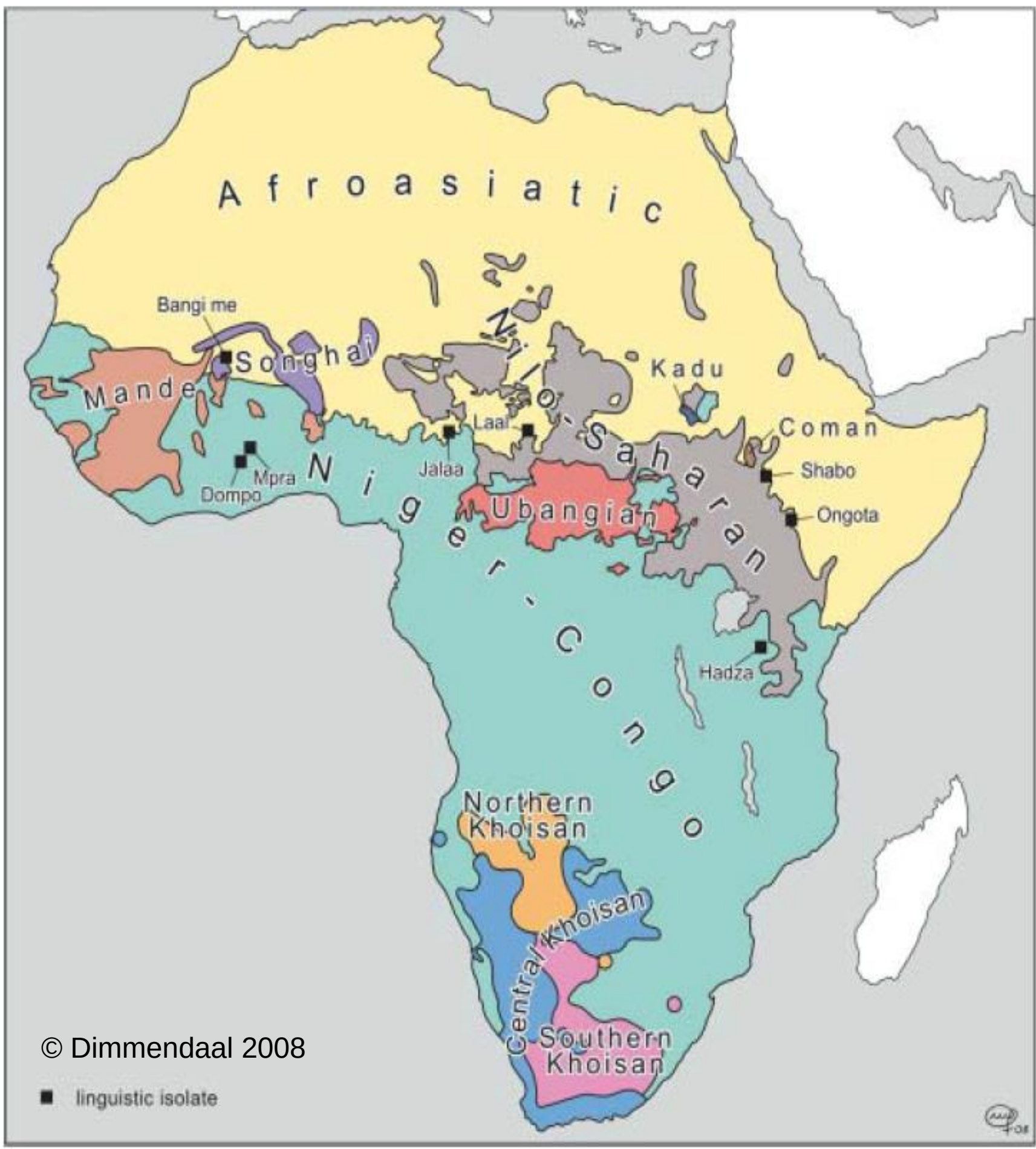
The noun class system of Ndunga (“Ubangi”, Mbaic) from a Niger-Congo perspective

Chrisnah R. MFOUHOU and Sara PACCHIAROTTI

Comparative Niger-Congo workshop, LLACAN, Villejuif, May 22-23 2025

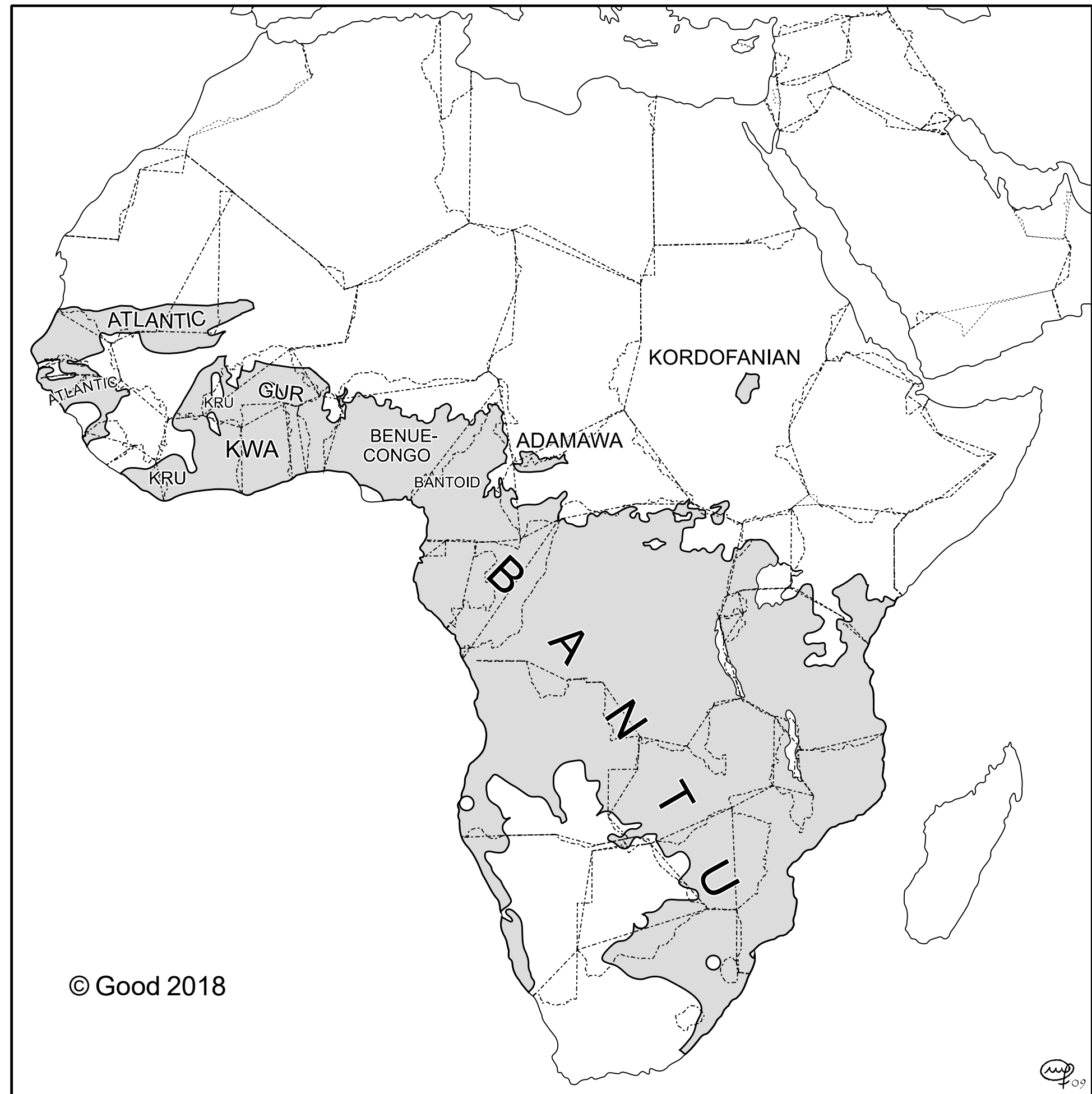
ROADMAP

1. A new account of the noun class system of Ndungalé (“Ubangi”, Mbaic) following the approach of Guldemann and Fiedler (2019)
2. Establish which formal and functional features in the Ndungalé noun class system are prototypically Niger-Congo (NC) and which deviated from the NC prototype
3. Look for cognates between Ndungalé (and/or Proto-Mbaic) noun class suffixes and noun class affixes in NC subgroups in order to provide (additional) morphological evidence for a NC affiliation of Mbaic

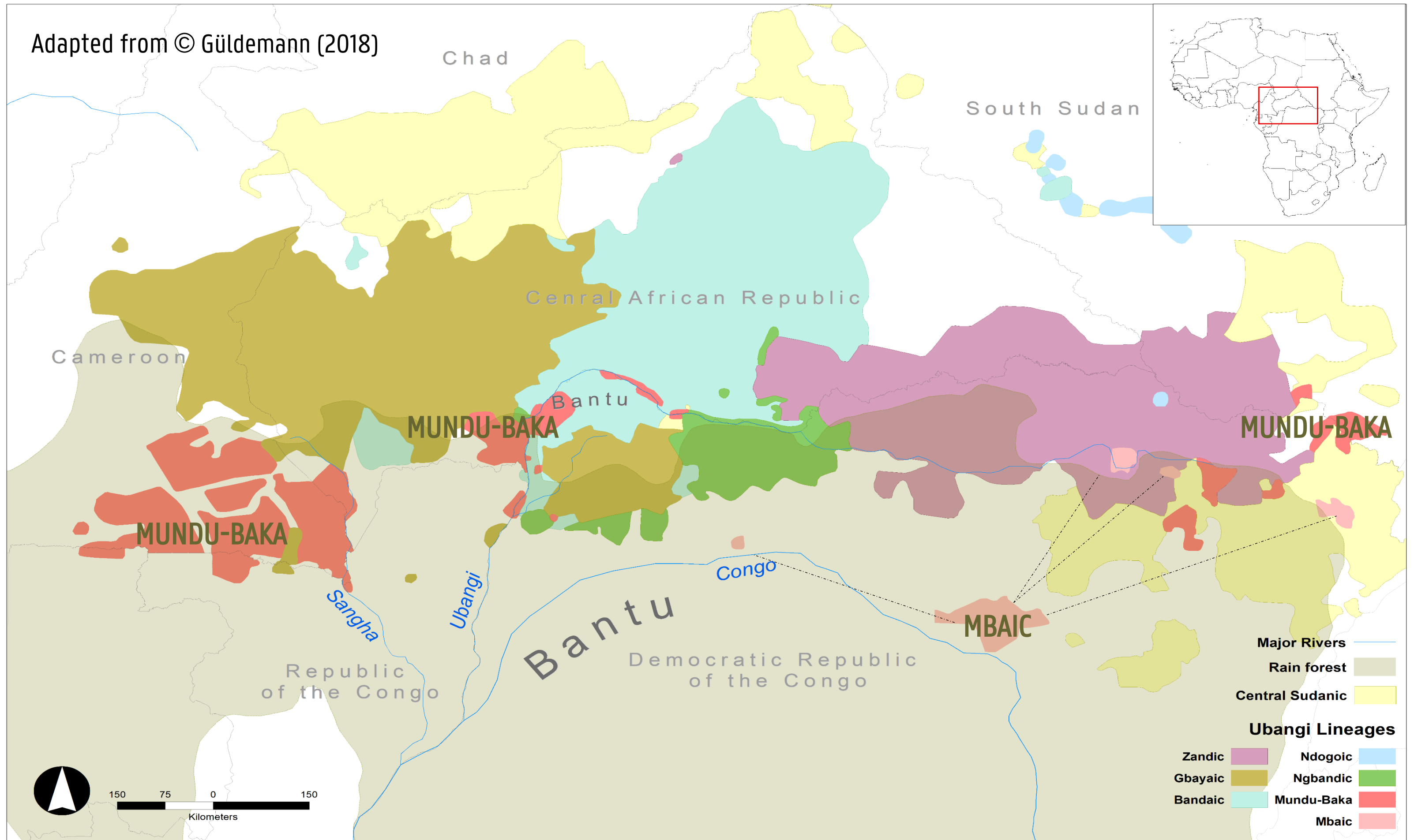


“CORE” NIGER-CONGO

Blench (2006: 109): “**Niger-Congo languages form large territorial blocks** with much less of the fragmentation and geographical isolation characteristic of Nilo-Saharan. Typically, this suggests **more recent expansions and the gradual spread of more sedentary populations colonizing areally** rather moving rapidly along line features such as waterways.”



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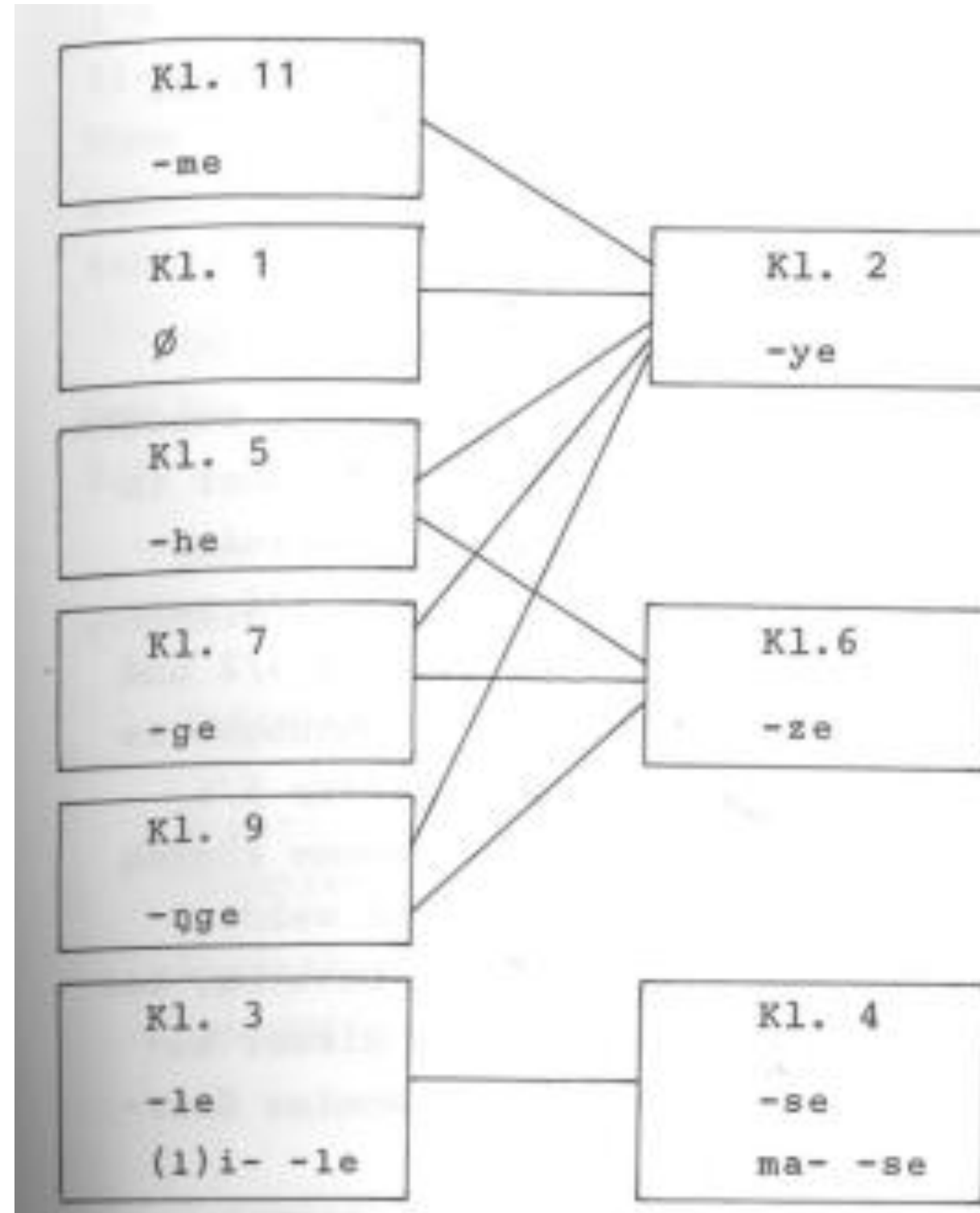


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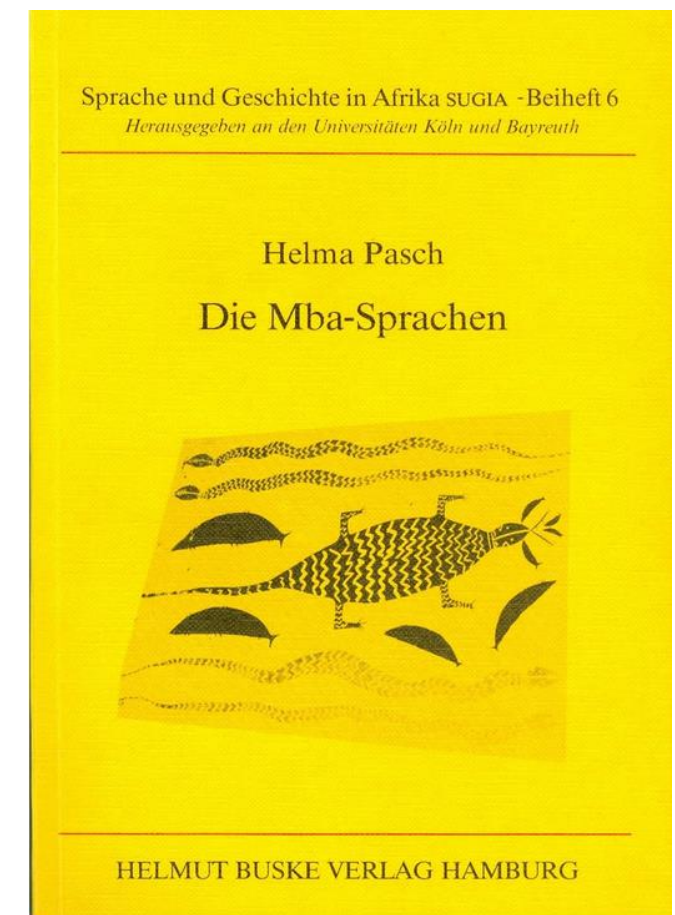


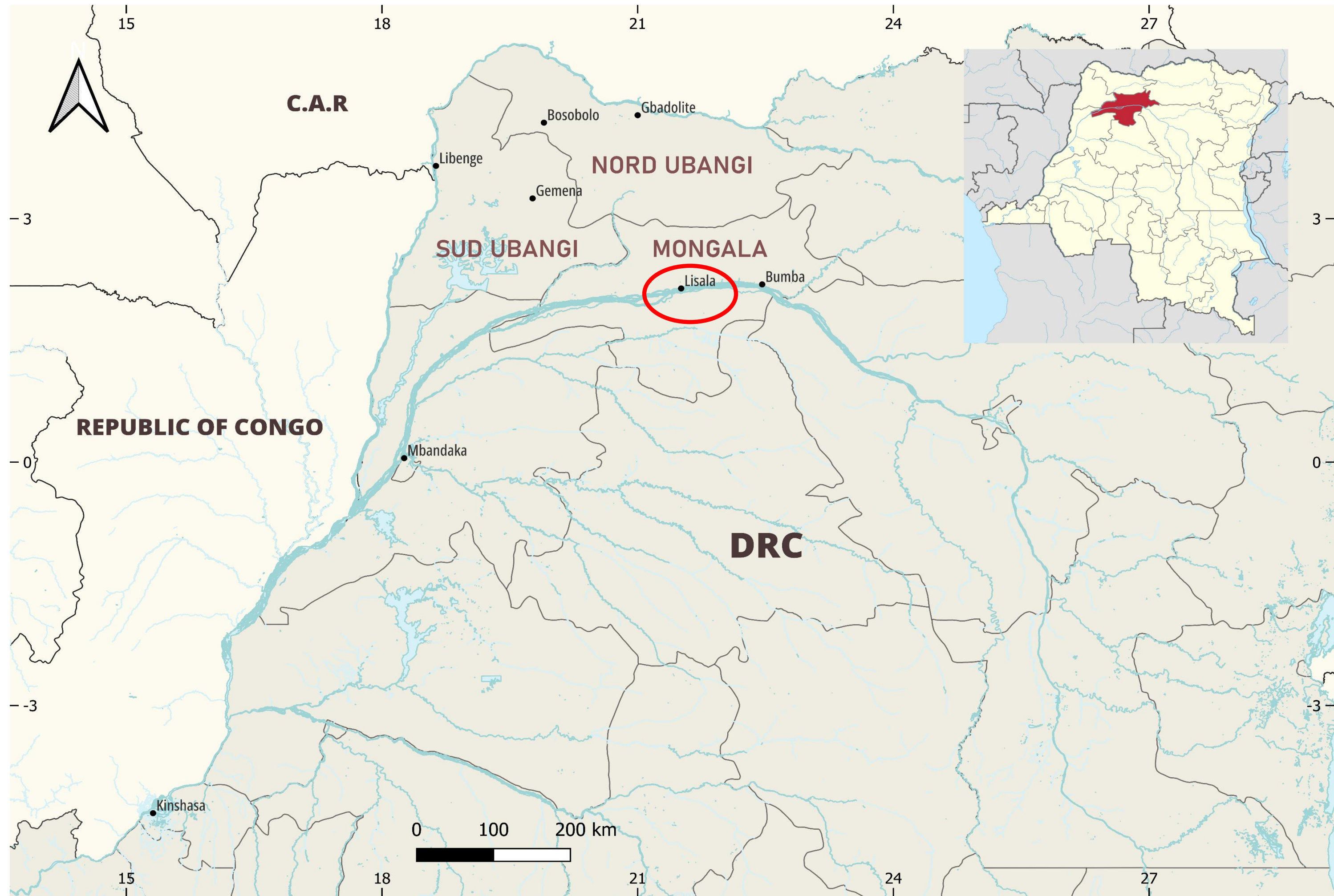
The work of Pasch (1986)

- Synchronic descriptions of noun class systems of all four Mbaic languages
- Reconstruction of a Proto-Mba noun class system and of intermediate subgroupings
- Data on Ndunga in Pasch (1986): first hand (Pasch's fieldwork) and second-hand sources from 1950-1970
- Some data points on agreement targets missing
- Proposed analysis not always confirmed

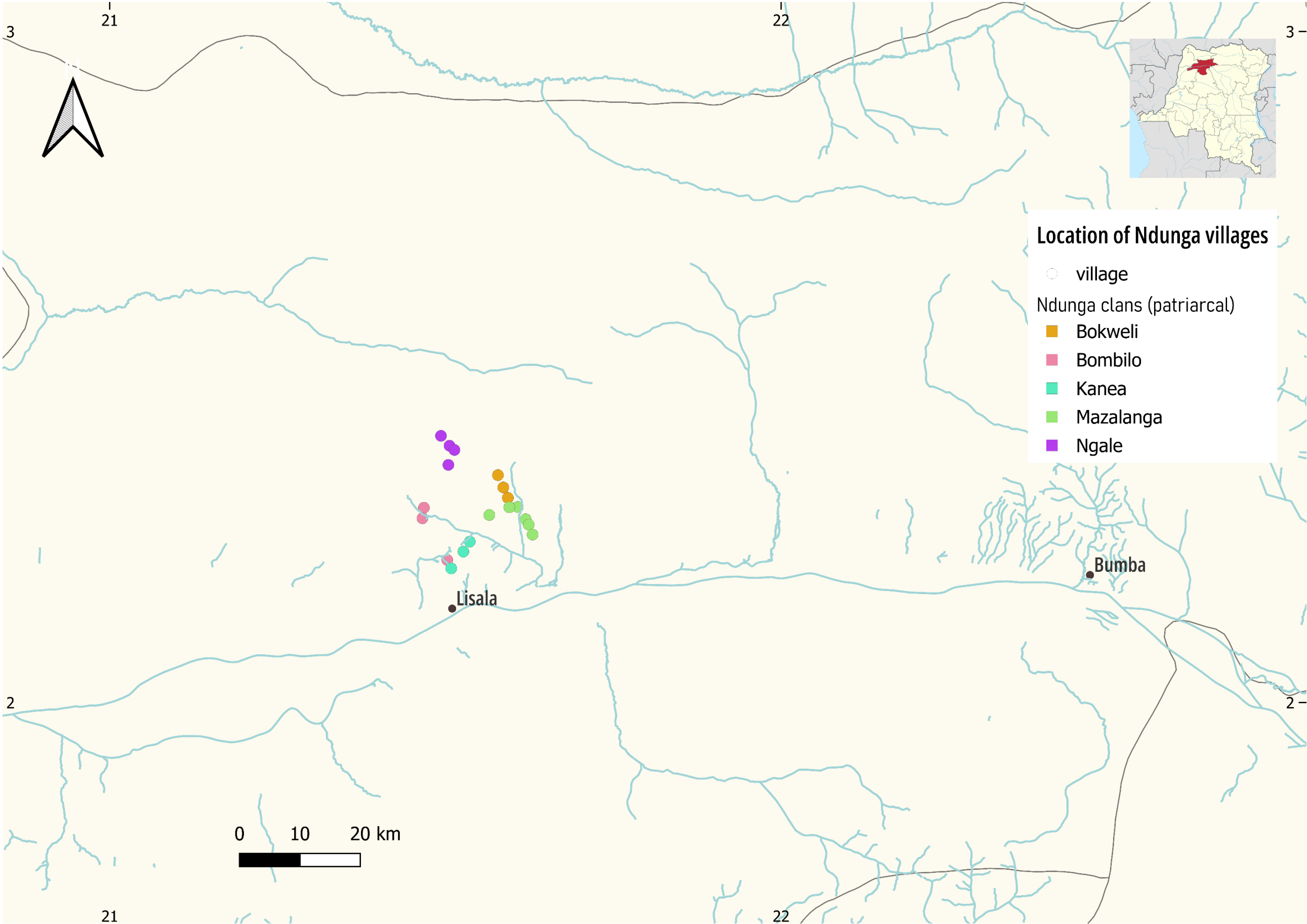


Ndungale noun class pairings (Pasch 1986:39)





2024 FIELDWORK MISSION



WHAT IS TYPICAL NC IN NOUN CLASS SYSTEMS?

CMM: Class membership marker

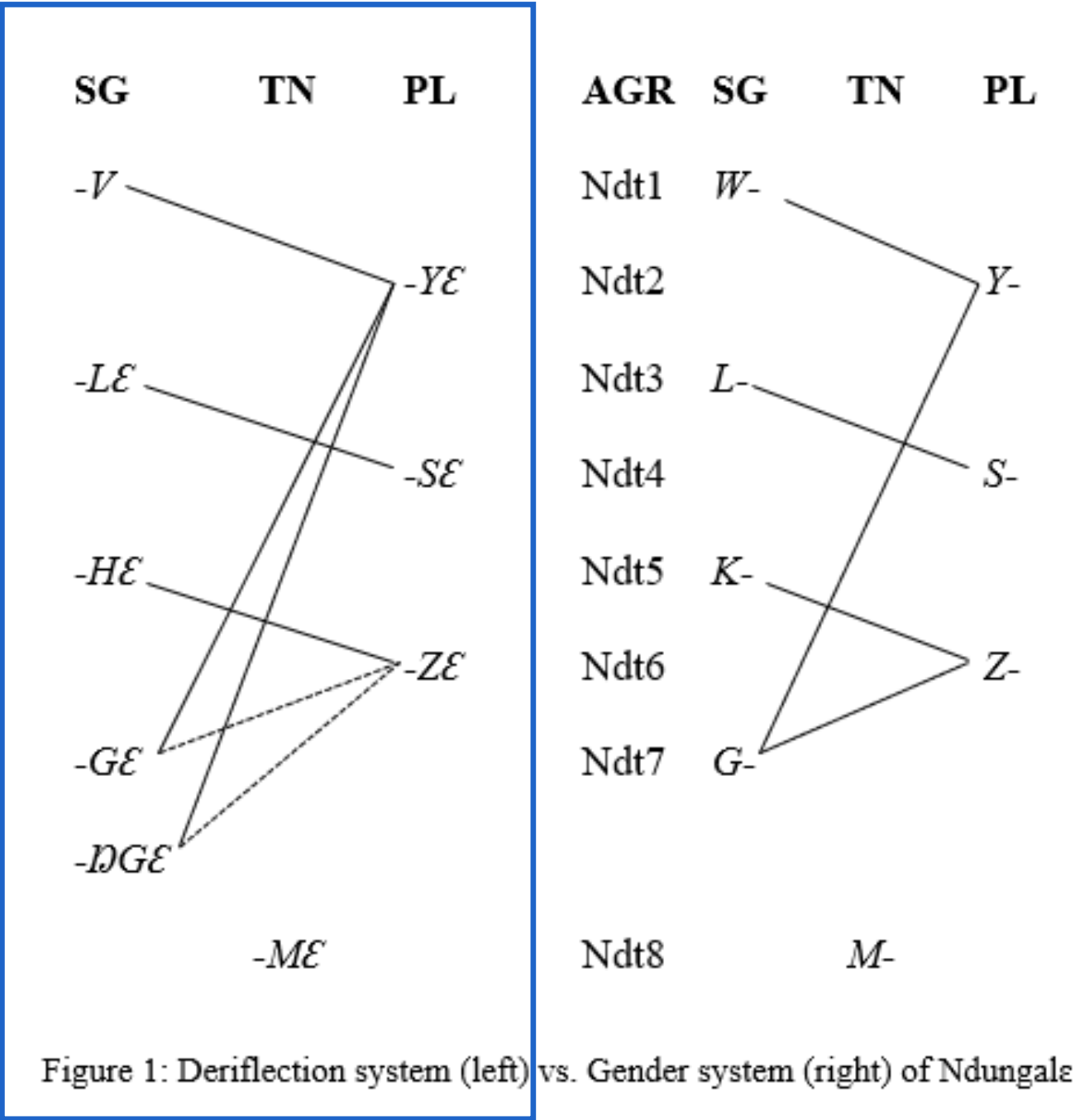
FORMAL & FUNCTIONAL FEATURES (Creissels 2023, 2024)	NC GROUPS
1. Partially alliterative agreement (CMM ≠ agreement targets) 2. Synchronically segmentable affixal CMMs on noun forms 3. Class alternations as the only exponent of SG vs. PL distinction 4. No one to one SG/PL correspondences (SG classes usually outnumber PL) 5. Position of CMMs: suffixal, prefixal or both 6. Class agreement on all noun dependents and on verb 7. A class pairing usually dedicated (exclusively/mostly) to humans 8. 10-20 CMMs and/or agreement patterns 9. Derivational function $V > N$ and $N > N$	North Atlantic and Bak, Kordofanian, Kwa, Benue-Congo (Bantu, Kainji), Gur (Southwestern and North Central), among others

1

THE NOUN CLASS SYSTEM OF NDUNGALE

THE NOUN CLASS SYSTEM

- Nine nominal form classes, as defined by and labelled according to their suffixes.



After Güldemann & Fiedler (2019:100)

----- Inquorate (small size)

NF Cl.	Forms		Examples
-V	-i, -u, -e, -ε, -o, -ɔ, -a	SG	ɓàkìlì-ì ‘guest’, kwàndá-à ‘man’
-Yɛ	-yè	PL	lángì-yè ‘colours’, kwèndé-yè ‘men’
-Lɛ	-lè	SG	kémbé-lè ‘drum’, mbètù-lè ‘nose’
-Sɛ	-sè	PL	ɲgòmà-sè ‘knees’, gà-sè ‘trees, woods’
-Hɛ	-hè	SG	tɕìkpélé-hè ‘armpit’, kásá-hè ‘leaf’
-Zɛ	-zè	PL	nònì-zè ‘bodies’, ɓàmù-zè ‘insects (gen.)’
-Gɛ	-gè	SG	tóndó-gè ‘kitchen’, mbí-gè ‘waist’
-ɲGɛ	-ɲgè	SG	ndóà-ɲgè ‘person’, ɲgò:-ɲgè ‘chicken’
-Mɛ	-mè	TN	ɲgú-mè ‘smoke’, ɲgwè-mè ‘sadness’

THE NOUN CLASS SYSTEM

- Nine nominal form classes, as defined by and labelled according to their suffixes.
- Eight agreement classes are reflected in the morphosyntactic behaviour of their agreement targets (demonstratives, associatives, enumerative 'one').

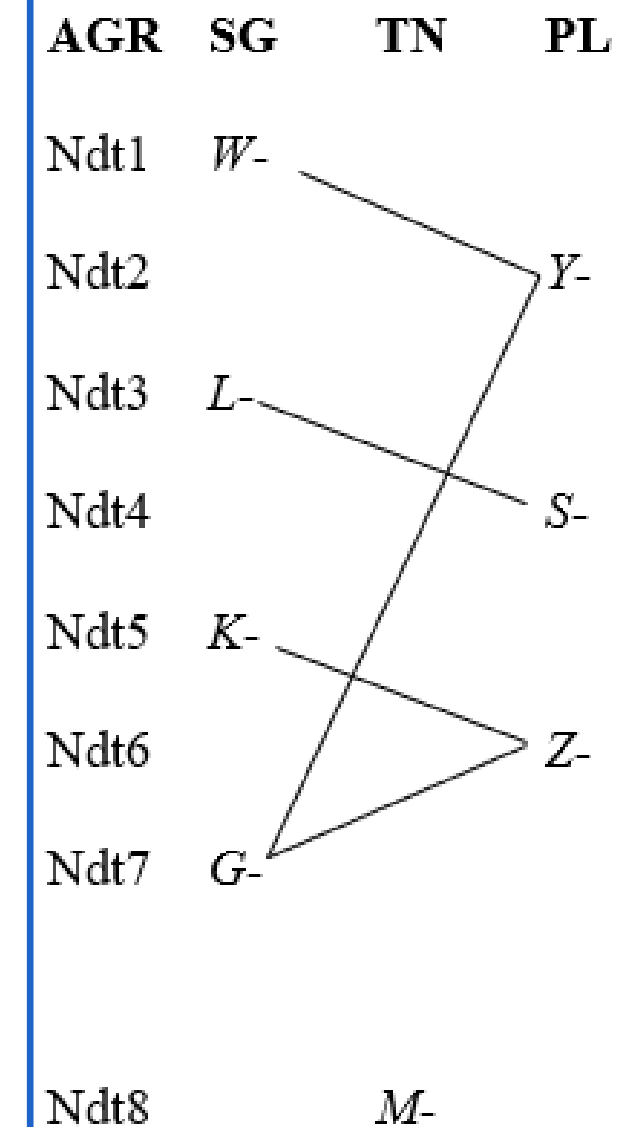
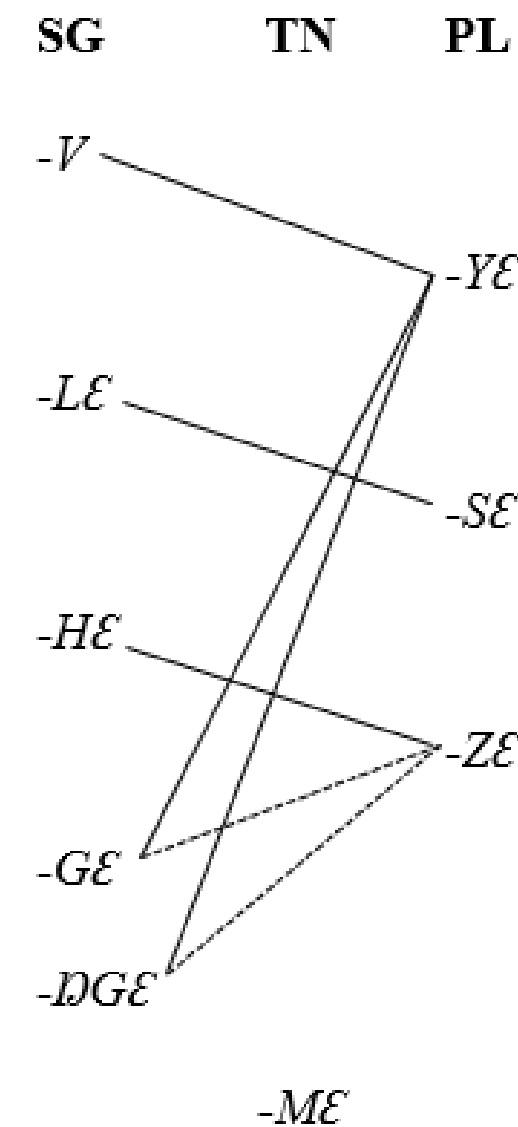


Figure 1: Deriflection system (left) vs. Gender system (right) of Ndungale

----- Inquorate

Agreement targets

AGR	Number	Demonstrative	Associative	Enumerative 'one, same'
Ndt1	SG	w-é	w-àátà	w-ímè
Ndt2	PL	y-é	y-àátà	y-ímè
Ndt3	SG	l-é	l-àátà	l-ímè
Ndt4	PL	s-é	s-àátà	s-ímè
Ndt5	SG	k-é	k-àátà	k-ímè
Ndt6	PL	z-é	z-àátà	z-ímè
Ndt7	SG	g-é	g-àátà	g-ímè
Ndt8	TN	m-é	m-àátà	m-ímè

CLASS NEUTRALIZATION IN INDEPENDENT PRONOUNS

(1) Class neutralization with independent pronouns (Creissels 2005: 44 stage I pronouns)

a. Nè kòkò mé hé.

nè	kòkò	mé	hé
1SG	find	3SG.ANIM	there

‘I found him (person)/it(goat) there.’

b. Nù kòkò làmé hé.

nù	kòkò	làmé	hé
1PL	find	3PL.ANIM	there

‘We found them (the persons, goats) there.’

c. Mé kòkò ?èné hé.

mé	kòkò	?èné	hé
3SG.ANIM	find	3.INNA	there

‘He found X there.’

(X = the tree or trees, the house or houses, etc.)

CLASS NEUTRALIZATION IN ARGUMENT INDEXATION

(2) Anterior with CV stem: è-té-ò ‘to fall’

a. kóhè **tètè**

kó-hè té.RED **L**
rope-CL.hè fall.ANT.**SG**
‘The rope has fallen.’

b. kózè **tété**

kó-zè té.RED **LH**
rope-CL.zè fall.ANT.**PL**
‘The ropes have fallen.’

(3) Anterior with CVCV stem: è-gòmè-ò ‘to break’

a. tèlè **gǒmó**

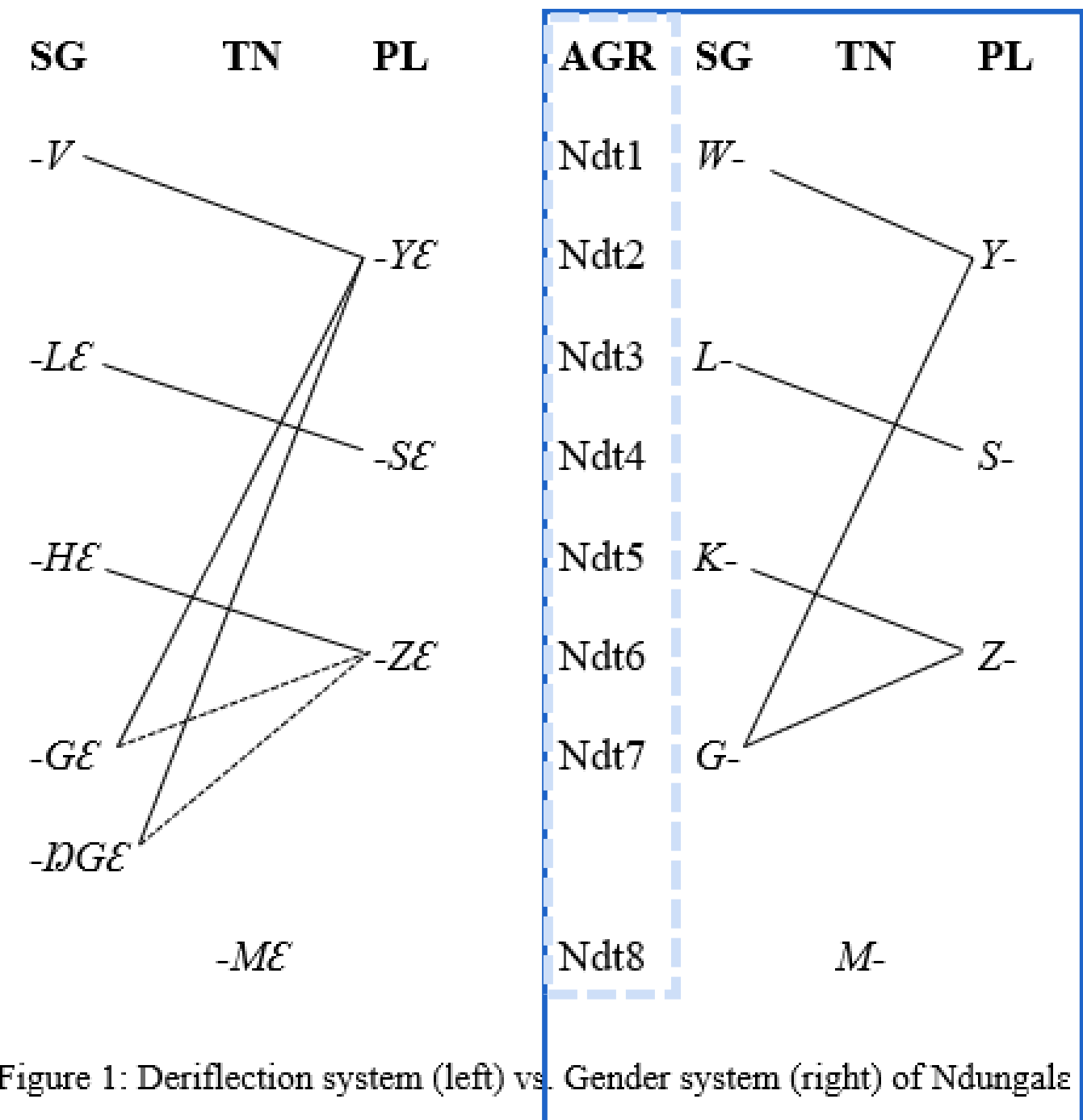
tè-lè gòmè **RH**
tè-CL.lè break.ANT.**SG**
‘The finger is broken.’

b. tèsè **gǒmé**

tè-sè gòmè **RH**
tè-CL.sè break.ANT.**PL**
‘The fingers are broken.’

THE NOUN CLASS SYSTEM

- Nine nominal form classes, as defined by and labelled according to their suffixes.
- Eight agreement classes that are reflected in the morphosyntactic behaviour of their agreement targets (demonstratives, associatives, enumerative 'one').
- The language specific AGR classes are labelled by Arabic numbers as an arbitrary choice and these numbers are preceded by the Ethnologue code of the language to avoid any facile (one-to-one) association with the comparative Bantu~Niger-Congo system.
- AGR classes are ordered according to the number of tokens in that membership class



----- Inquorate

Table 3: Frequency of Genders

Gender	Pairing (AGR)	Token	Frequency
I	<i>Ndt1/Ndt2</i>	184	47%
II	<i>Ndt3/Ndt4</i>	88	23%
III	<i>Ndt5/Ndt6</i>	26	7%
IV	<i>Ndt7/Ndt2</i>	25	6%
V	<i>Ndt7/Ndt6</i>	11	3%
Transnumeral (AGR)			
VI	<i>Ndt8</i>	17	4%
	<i>Others</i>	37	10%
Total		388	100%

MAPPING OF NOMINAL FORM CLASSES AND AGREEMENT CLASSES

NF Cl.		AGR		NUMBER
-V	—————	W-	Ndt1	SG
-Yɛ	—————	Y-	Ndt2	PL
-Lɛ	—————	L-	Ndt3	SG
-Sɛ	—————	S-	Ndt4	PL
-Hɛ	—————	K-	Ndt5	SG
-Zɛ	—————	Z-	Ndt6	PL
-Gɛ	—————	G-	Ndt7	SG
-ŋGɛ	—————	X		
-Mɛ	—————	M-	Ndt8	TN

*V unspecified for vowel

Note: X = no independent class counterpart in the other class type.

Figure 2: Mapping of nominal form and agreement classes in Ndungale

THE SEMANTICS OF GENDERS

- Semantic affiliation of a noun to a given gender is often opaque.
- One and the same semantic category (e.g. animals, body parts) is found in more than one gender, including humans

Semantic fields <i>@ Haspelmath and Tadmor (2009)</i>	Genders					
	I	II	III	IV	V	VI
1The Universe	9%	13%	8%	4%	-	13%
2 Kinship	6%	2%	17%	-	-	-
3 Animals	19%	9%	13%	19%	50%	-
4 The body	12%	28%	13%	35%	20%	13%
5 Food and drink	9%	8%	4%	4%	-	13%
6 Clothing and grooming	4%	5%	-	-	-	-
7 The house	2%	-	8%	8%	10%	
8 Agriculture and vegetation	8%	13%	8%	12%	-	-
9 Basic actions and technology	6%	3%	4%	4%	-	-
10 Motion	2%	-	-	-	-	-
11 Possession	3%	2%	4%	-	-	7%
12 Spatial relations	3%	8%	-	4%	-	-
13 Quantity	1%	-	8%	-	-	-
14 Time	3%	-	-	4%	20%	
15 Sense perception	1%	-	-	4%	-	40%
16 Emotions and values	2%	-	-	-	-	68%
17 Cognition	1%	-	-	-	-	-
18 Speech and language	1%	5%	-	-	-	-
19 Social and political relations	2%	1%	8%	4%		68%
20 Warfare and hunting	4%	-	4%	-	-	-
21 Law	1%	-	-	-	-	-
22 Religion and belief	2%	2%	-	-	-	-

DERIFLECTION AS A DERIVATIONAL TOOL (V > N)

Deverbal agentive nouns: AG Prefix *mò-* AG Suff *-dĩ* and deriflection *-*V/-yè* (gender I)

- (4) *mò-lù-dĩ-ĩ/ mò-lù-dĩ-yè* ‘farmer’ < *è-lú-ò* ‘to cultivate, to farm’
mò-nàkò-dĩ-ĩ/mò-nàkò-dĩ-yè ‘beggar’ < *è-nàkò-ò* ‘to beg’

Resultative nouns: TN deriflection

- (5) *kwì-gè* (CL.gɛ) ‘war’ < *é-kwí-ò* ‘to die’
bèvò-mè (TN.mè) ‘fatigue’ < *è-bèvò-ò* ‘to be tired’

No semantically transparent N>N derivation by a shift in deriflection

- (6) *ɖùwà-à* (NF -V/-yè) ‘woman’ < > *ɖùwà-lè* (NF -lè/-sè) ‘heart’
tè-ɲgè (NF -ɲgè/-yè) ‘knot’ < > *tè-hè* (NF -hè/-zè) ‘tooth’

2

SIMILARITIES WITH TYPICAL NIGER-CONGO GENDER SYSTEMS

(based on Creissels 2023, 2024)

MAIN SOURCES

Southwestern and North Central Gur: Mieke et al. 2012; Mieke and Winkelmann 2007

North Atlantic and Bak: Creissels (2014, 2024), Pozdniakov (2022)

Benue Congo: de Wolf (1971); Bantu (Meeussen 1967, Van de Velde et al. 2019, p.k.), Kainji (Blench 2020)

Kordofanian/Nuba-Mountains (Heiban, Lafofa, Talodi, parts of Rashad): Schadeberg (1981, 1989), Gibbard et al. (2009), Schadeberg & Blench (2013), Blench (2025)

Kwa: Konoshenko & Shavarina (2019), Pozdniakova & Aplonova (2022)

General: Güldemann & Fiedler (2019, 2022), Creissels (2023)

FORMAL & FUNCTIONAL FEATURES TYPICAL OF NIGER-CONGO NC SYSTEMS

1. Partially alliterative agreement (CMM and agreement targets are not (supra)segmentally identical)
 2. Synchronically segmentable affixal CMMs on noun forms
 3. Class alternations as the only exponent of the singular vs. plural distinction
 4. Singular/plural correspondences (no one-to-one correspondence, singular classes outnumber plural)
 5. Derivational function $V > N$
 6. Classes reflected on nominal modifiers (DEM, ASS, enumerative 'one')
-

3

DEVIATIONS FROM TYPICAL NIGER-CONGO NOUN CLASS SYSTEMS

(based on Creissels 2023, 2024)

FORMAL & FUNCTIONAL FEATURES	NC GROUPS
1. A relatively small inventory of less than ten classes	North Atlantic and Bak (Wolof, Cangin, and Balant), Kwa, Gur (e.g. Bwawu, Dɔ̀gɔ̀sɛ)
2. Mostly CV suffixes with an invariable V (Güldemann 2018: 218-219)	? (Kordofanian only has C shaped prefixes)
3. ‘Deriflection-final’ vs. ‘Agreement-initial’ system	Southwestern and North Central Gur
4. Reduction in the range of class agreement targets	Other Mbaic (a-Mã-lo), Southwestern and North Central Gur (Kulango, Dagbani, Koromfe) , Nuba Mountains (Rashad: no subject indexation on V), North Atlantic/Bak (argument indexation not reflecting classes), Kwa, etc. (see Guldemann & Fiedler 2024 for a list of extreme agreement reduction in NC groups)
5. No class distinction in personal pronouns (> development of animacy-based distinctions)	Other Mbaic (Mba-ne), Atlantic (Wolof), Bantu languages of Central Africa (Güldemann 2023)
6. Loss of semantic distinction between human and non-human classes (no class dedicated to humans only)	North Atlantic (Wolof), Kordofanian (Heibanic)
7. No synchronically identifiable N > N derivational function (by means of noun class shift)	?
8. Loss of affixal class marker in morphosyntactic contexts such as N + N compounds	Southwestern and North Central Gur

DEVIATIONS > N N COMPOUNDING AND LOSS OF N1 CLASS SUFFIX

(7) và-~~Ø~~ kwèhè

và-~~lè~~ kwè-hè

eye-CL.lè scale-CL.hè

‘eyelash’

(8) mà-~~Ø~~ byàṅgè

mà-~~hè~~ byà-ṅgè

rain-CL.hè child-CL.ṅgè

‘drizzle’

(9) Yom, North Central Gur (Fiedler 2012:556-559)

bá-~~Ø~~ dór

bá-~~yà~~ dór

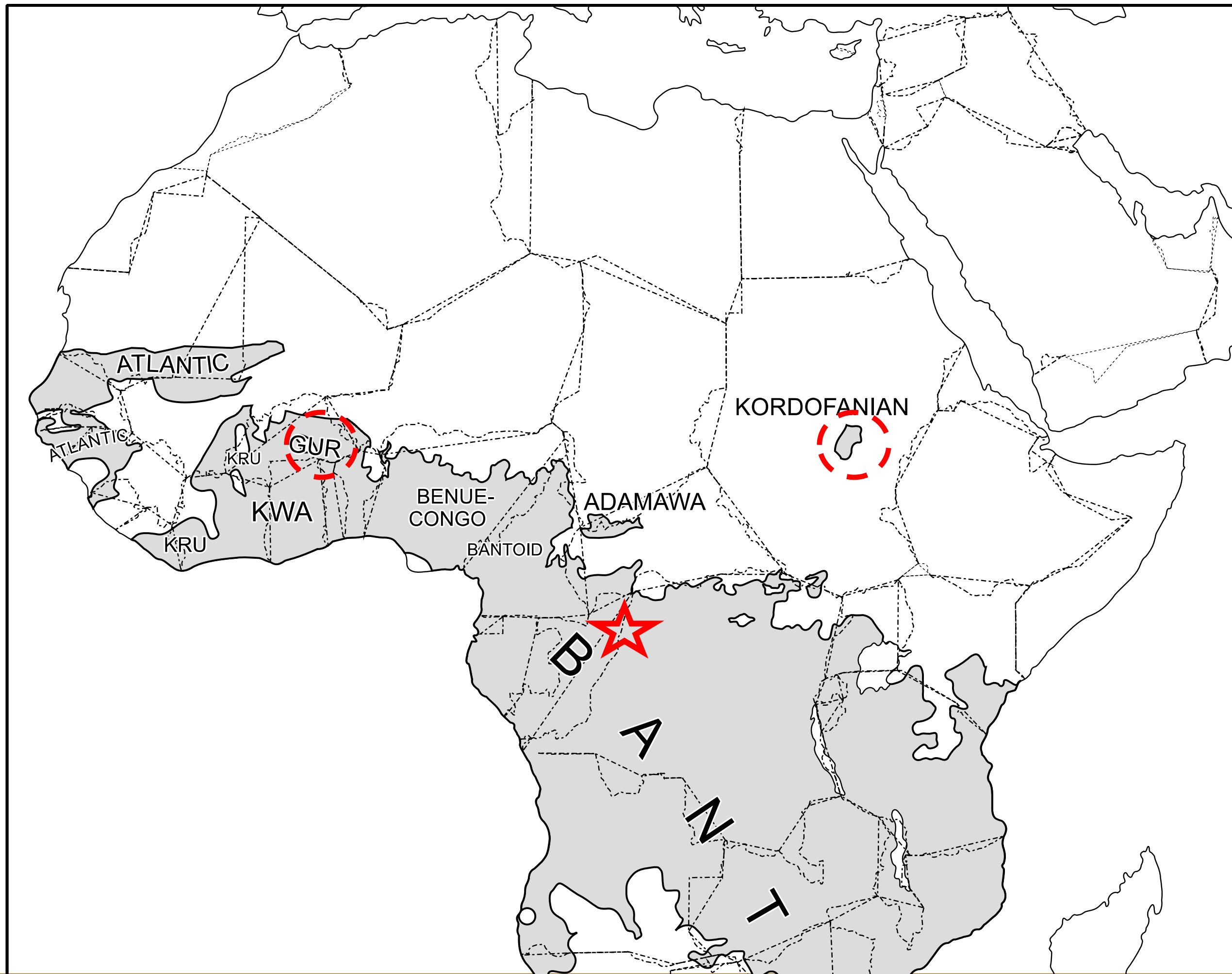
dog-CL1 male-CL2

‘male dog’

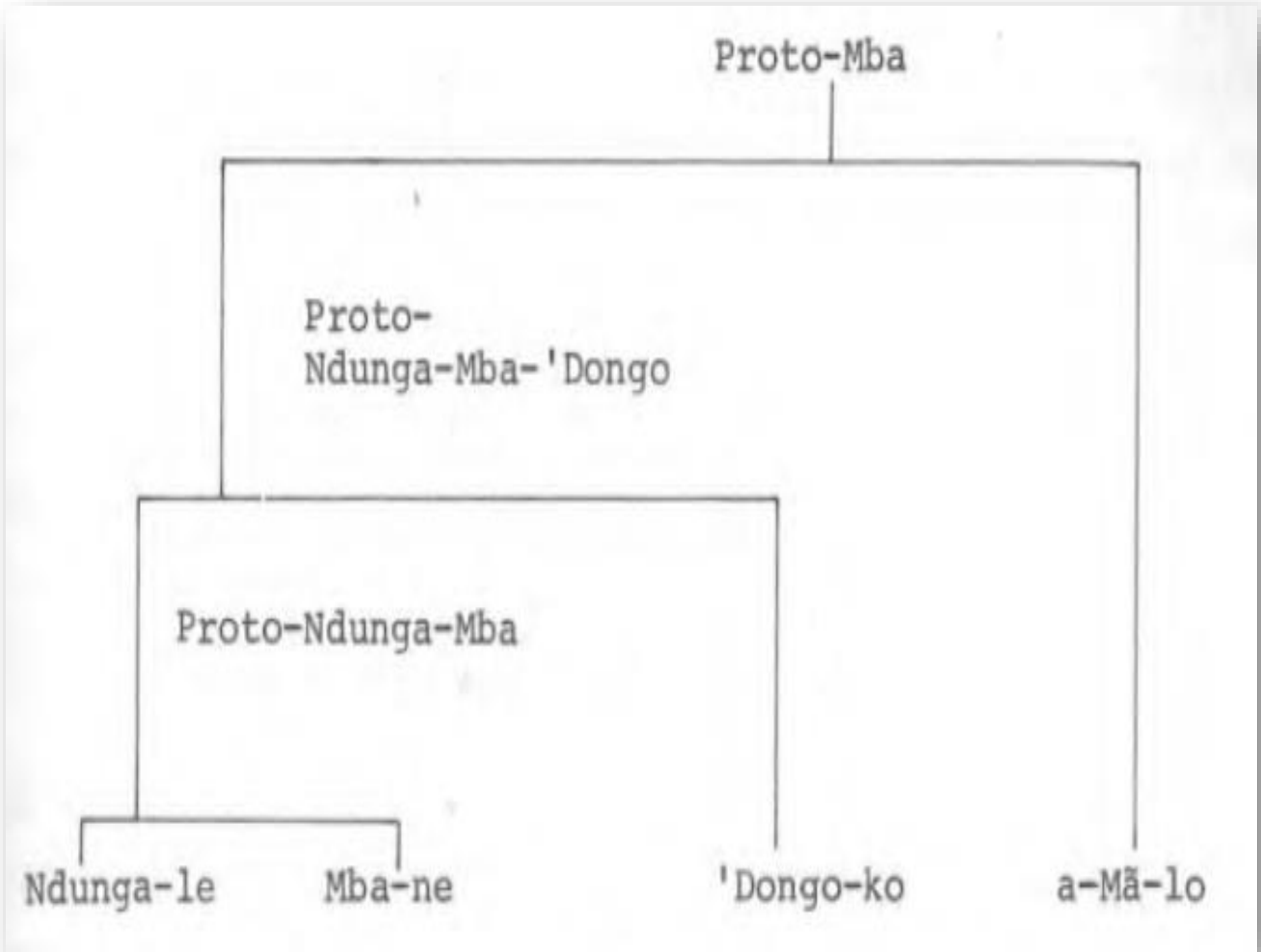
See also: Cerma (Miehe 2007), Lobiri (Miehe and Tham 2007), Dɔ́gɔ́sɛ̀ (Winkelmann 2007b), Moba (Bakpa and von Roncador 2012), Bwamu (Beyer 2012a), Koromfe (Beyer 2012b)

4

LOOKING FOR POSSIBLE COGNATES WITH OTHER NIGER-CONGO CLASS AFFIXES



	Proto-Mba >	Proto-Ndunga- > Mba-Dongo	Proto-Ndunga- Mba
KL.1 (SG)	-wo	(-wo)	-Ø [-V]
KL.2 (PL)	-yo	-yo	-ye
KL.3 (SG)	-lo	-lo	-le
KL.4 (PL)	-so	-so	-se
KL.5 (SG)	-kpo	-ko	-he
KL.6 (PL)	-ndo	-nzo	-ze
KL.7 (SG)	-go/-gbo?	-go	-ge
KL.8 (PL)	-ro		
KL.9 (SG)	-ŋgo/-ŋgbo?	-ŋgo	-ŋge
KL.10 (PL)	-ɔo		
KL.11 (SG)	-mo	-mo	-me
KL.12 (PL)	-ɓo		
KL.13 (SG) TN?	-ŋgwo		
KL.14 (SG) TN?	-no		
KL.15 (SG) TN?	-gbo		



Pasch (1986: 359)

Semantics of class pairings in Proto-Mba

Humans and animals: **1/2**, **7/2** and 9/2

Animals: 7/6, 9/6, and **5/6**

Inanimate objects: 3/4 and 11/2 but also **1/2**, **5/6** and **7/2**

Table 25: (Potential) reflexes of classes *1, *2, and *6A across Niger-Kordofanian classificatory units (Güldemann 2018: 134-137)

	Lineage	*1 Singular		*2 Plural		Meaning	*6A Transnumeral			Source
		Noun affix	Concord/ pronoun	Noun affix	Concord/ pronoun		Noun affix	Concord/ pronoun	Meaning	
(U6.A)	Bantoid: Bantu	*mu-	*ju/ a	*ba-	*ba	Human	*ma-	*ga	Liquid, mass	Meeussen (1967: 98)
(U6.A)	Bantoid: Ekoid	*ṇ-	—	*(b)à-	—	Human	*a-	—	Liquid, mass	Crabb (1965: 85, 98, 102)

(U6.C)	Kainji-Platoid: Ninzic	*u-	*w(a)	*ba-	*ba	Human	*ma-	—	Liquid	Gerhardt (1972/73, 1983a: 202–205)
(U6.C)	Kainji-Platoid: <i>Yukuben</i>	<i>u-</i>	<i>u-</i>	<i>ba-</i>	<i>ba-</i>	Human	<i>ba-</i>	<i>ba-</i>	Liquid, mass	Prischnegg (2008: 135–136, 180)

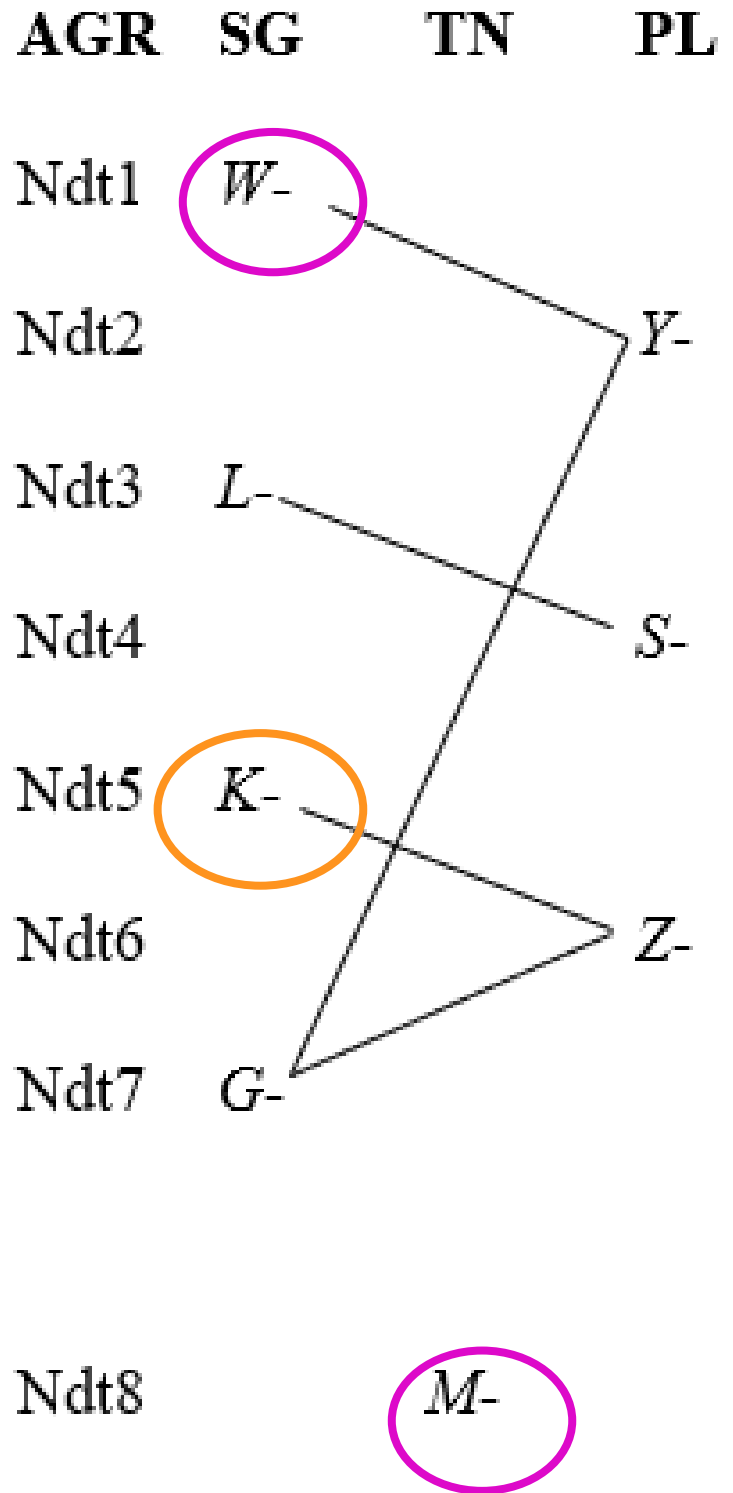
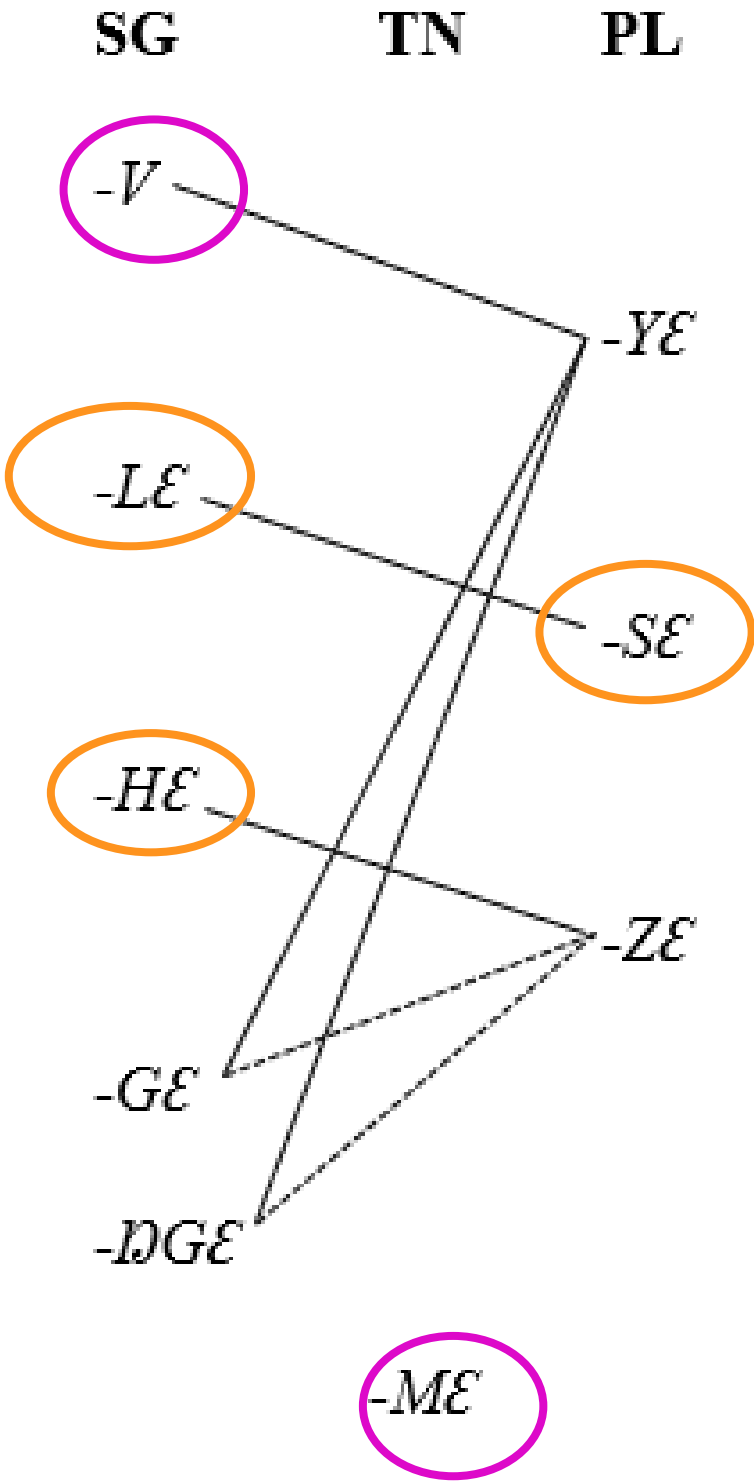
(U15.A)	Central: Oti- Volta	*-u/ a	*u/ a	*-(m)ba	*ba	Human	*-ma	*ma	Liquid, mass	Manessy (1975: 80–133)
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See also Schadeberg (1981, 1989)

U17.C	Mbaic	*-wo	*w	—	—	Human	*-mV	*-m	Liquid, mass	Pasch (1986: 359)
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U18.A	Heibanic	*gu-	*gu-	—	—	Animate	*ṇ-	*ṇ-	Liquid, mass	Schadeberg (1981a: 132–152)
U18.B	Talodic	*pV-	*pV-	—	—	Animate	*ṇu-	*ṇu-	Liquid, mass	Norton and Alaki (2015: 107–112)
U18.D	Rashadic	*w-	*w-	—	—	Animal	*ṇ-	*ṇ-	Liquid, mass	Schadeberg (2013: 330, 333–338)

	Proto-Gur	Proto-BC	PB	Proto-Ndunga-Mba
CL5 SG	*ɖɪ	*li	*i/di	-lɛ
Cf. Schadeberg (1981, 1989)				
CL13 PL	*sɪ	*ti	*tu	-sɛ
?				



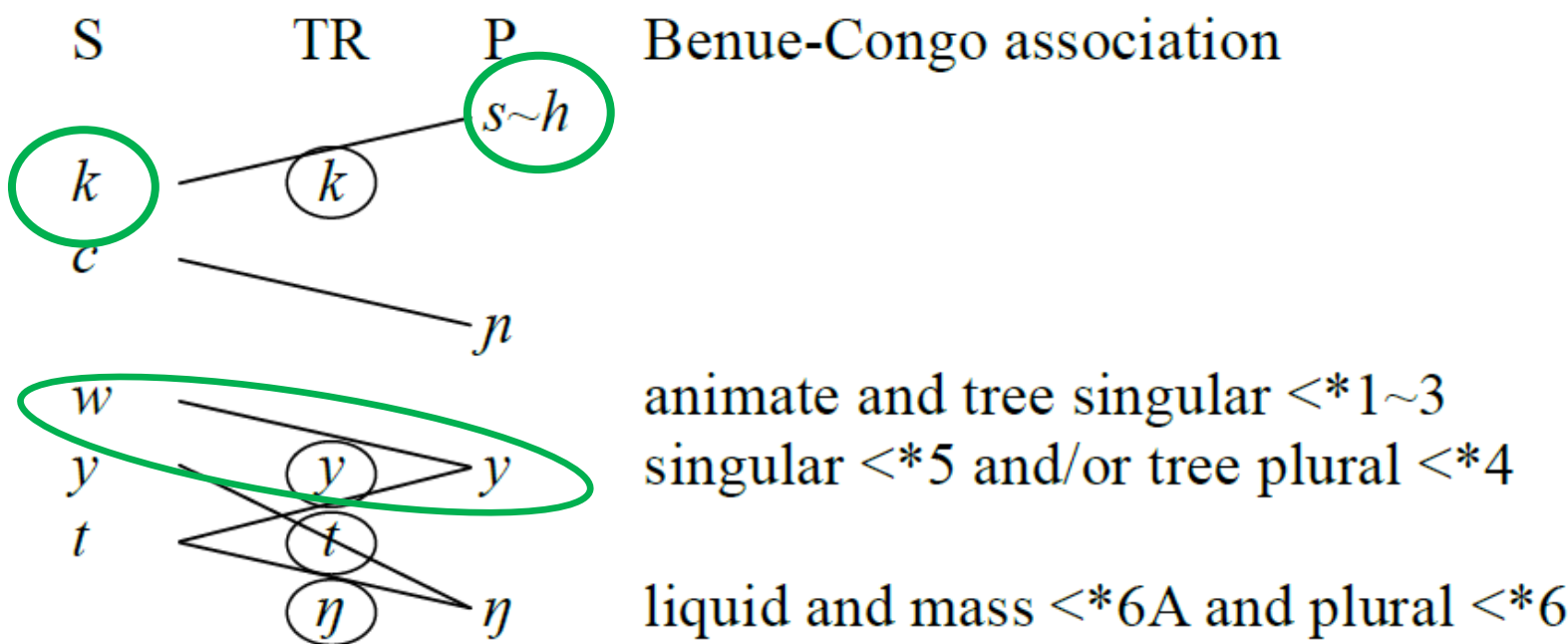
	Proto-Gur	Proto-BC	PB	Proto-NM
CL12 SG	*kʊ	*ku	*ku	-hɛ (cf. k- *ku > kp > k > h)

?

Figure 1: Declension system (left) vs. Gender system (right) of Ndungale

	Proto-Mba >	Proto-Ndunga- > Mba-Dongo	Proto-Ndunga- Mba	Noun class markers in Gur without any relation to reconstructions of Central Gur or Niger-Congo classes (Miehe & Winkelmann 2007: 17)	
KL.1 (SG)	-wo	(-wo)	-Ø [-V]		
KL.2 (PL)	-yo	-yo	-ye		Plural class *JE [jɛ] (> *ci in second volume; see PL suffix –yɛ of Dogose)
KL.3 (SG)	-lo	-lo	-le		
KL.4 (PL)	-so	-so	-se		
KL.5 (SG)	-kpo	-ko	-he		
KL.6 (PL)	-ndo	-nzo	-ze		
KL.7 (SG)	-go	-go	-ge		
KL.8 (PL)	-ro				
KL.9 (SG)	-ɲgo	-ɲgo	-ɲge		
KL.10 (PL)	-ɗo				
KL.11 (SG)	-mo	-mo	-me		
KL.12 (PL)	-ɓo				
KL.13 (SG) TN?	-ɲgwo				Single class marker *ɲwɛ
KL.14 (SG) TN?	-no				
KL.15 (SG) TN?	-gbo				

TAGOI (RASHADIC, KORDOFANIAN)



(Güldemann 2018: 229 after Schadeberg 2013)

NDUNGA

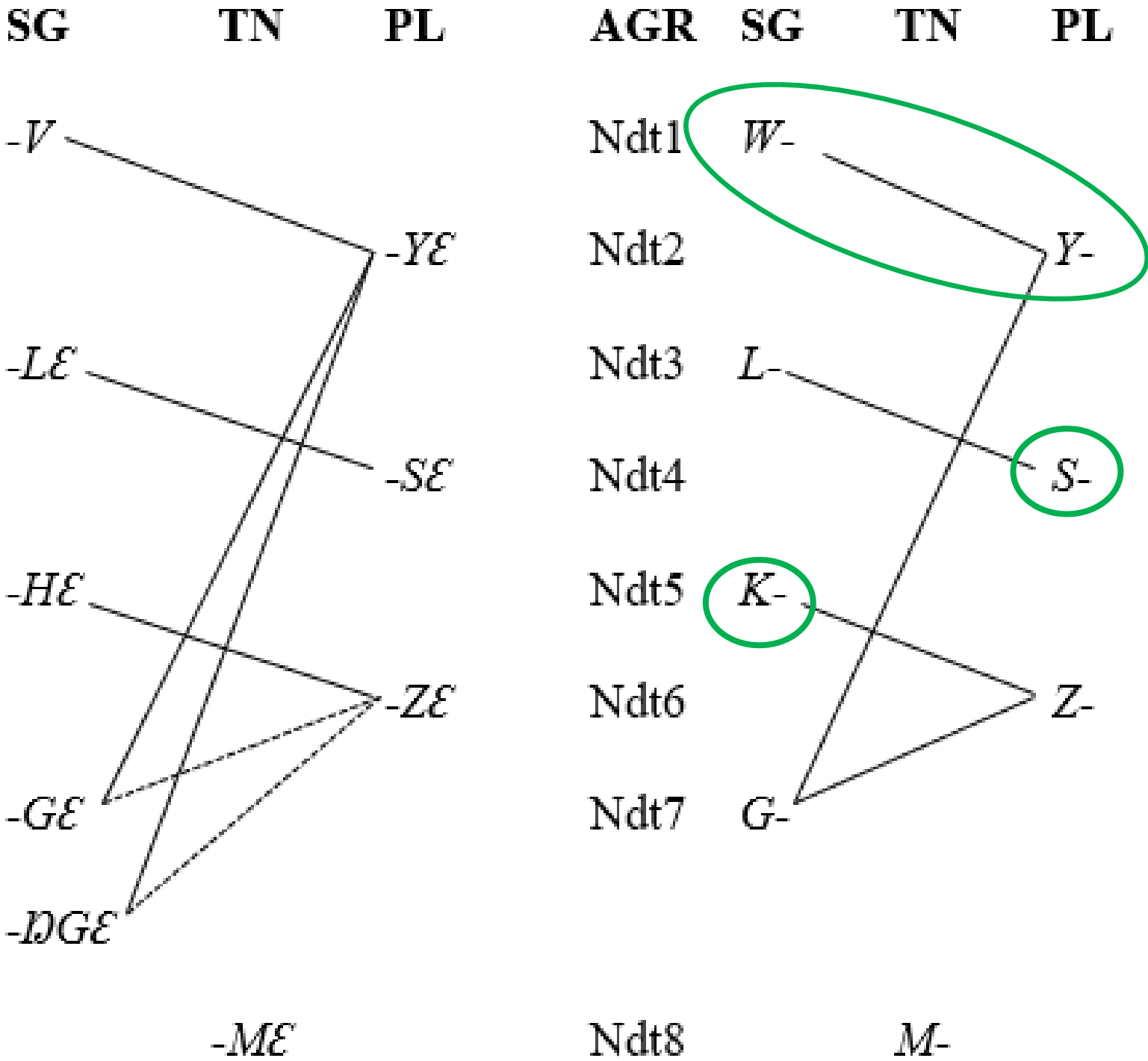


Figure 1: Deriflection system (left) vs. Gender system (right) of Ndungale

Language	Gender	Semantic domain
Tagoi	w/y	Animate: bird, dog, gazelle, snake, people~women; in Turjok: Human + tree species (cf. Schadeberg and Elias 1979: 20–21)
Ndunga	w/y	animals, humans, the body, the physical world, food and drink
Tagoi	k/s	Vegetation: bark, branch, flower, leaf, tree Body: belly, bone, feather, guts, hair, head, liver, mouth, nail Animate: louse, man, person~woman Other: clothes, cloud, fire, mountain, river, year
Ndunga	k/z	Body parts, animates (insects), vegetation (leaf, forest), physical world

CHANCE RESEMBLANCE?

“Given two (historically unrelated languages with noun class systems, hoe many form-meaning correspondences should one expect by chance?

As a simplistic example we may consider: There are **N** places of articulation and **K** possible semantic classes (trees, liquids, animates, etc.). Two languages pick **M** form-meaning pairs each. The probability of at least **X** form-meaning matches is then: (Hammarström 2013: 558)”

$$P(x) = \frac{\sum_{x \leq i \leq m} \binom{m}{i} \binom{kn-m}{m-i}}{\binom{kn}{m}}$$

With $n = 4$, $k = 13$, $m = 9$ $P(x \geq 4) \approx 0,0375$

With $n = 4$, $k = 26$, $m = 9$ $P(x \geq 4) \approx 0,00281$

CONCLUSIONS

- The Ndunga noun class system displays several NC features but also shows signs of attrition/erosion
- Attrition/erosion already at Proto-Mba stage (concurrent animacy system reconstructed to Proto-Mba) (Pasch 1986)
- Synchronic formal similarities between morphological processes operating in Ndunga and those attested in some Gur languages are striking (loss of suffix in N N compounds)
- Based mostly on form, we identified additional possible cognates between class suffixes in Ndunga/Mbaic and other Niger-Congo groups, notably Gur.
- Formally identical agreement morphemes (and gender pairing, i.e. w-/y-) appear to be shared between Ndunga and some Rashadic (Kordofan) varieties (and Bua see Kleinewillinghöfer presentation at this workshop)
- The probability that this is due to chance is (very) low
- How to interpret these results in the absence of a solid Niger-Congo tree (i.e. established on bottom-up phonological and morphological reconstructions of smaller units)?

THANK YOU!



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