FACULTY OF ARTS AND PHILOSOPHY

DEPARTMENT OF LANGUAGES AND CULTURES
UGENT CENTRE FOR BANTU STUDIES

WEST-COASTAL BANTU DIACHRONIC PHONOLOGY AND DEEP-TIME POPULATION CONTACT IN THE LOWER KASAI REGION OF THE DEMOCRATIC REPUBLIC OF CONGO

Koen Bostoen

UGent Centre for Bantu Studies, Department of Languages and Cultures, Ghent University, Belgium

Princeton Phonology Forum 2025 – Princeton University – April 18-19, 2025

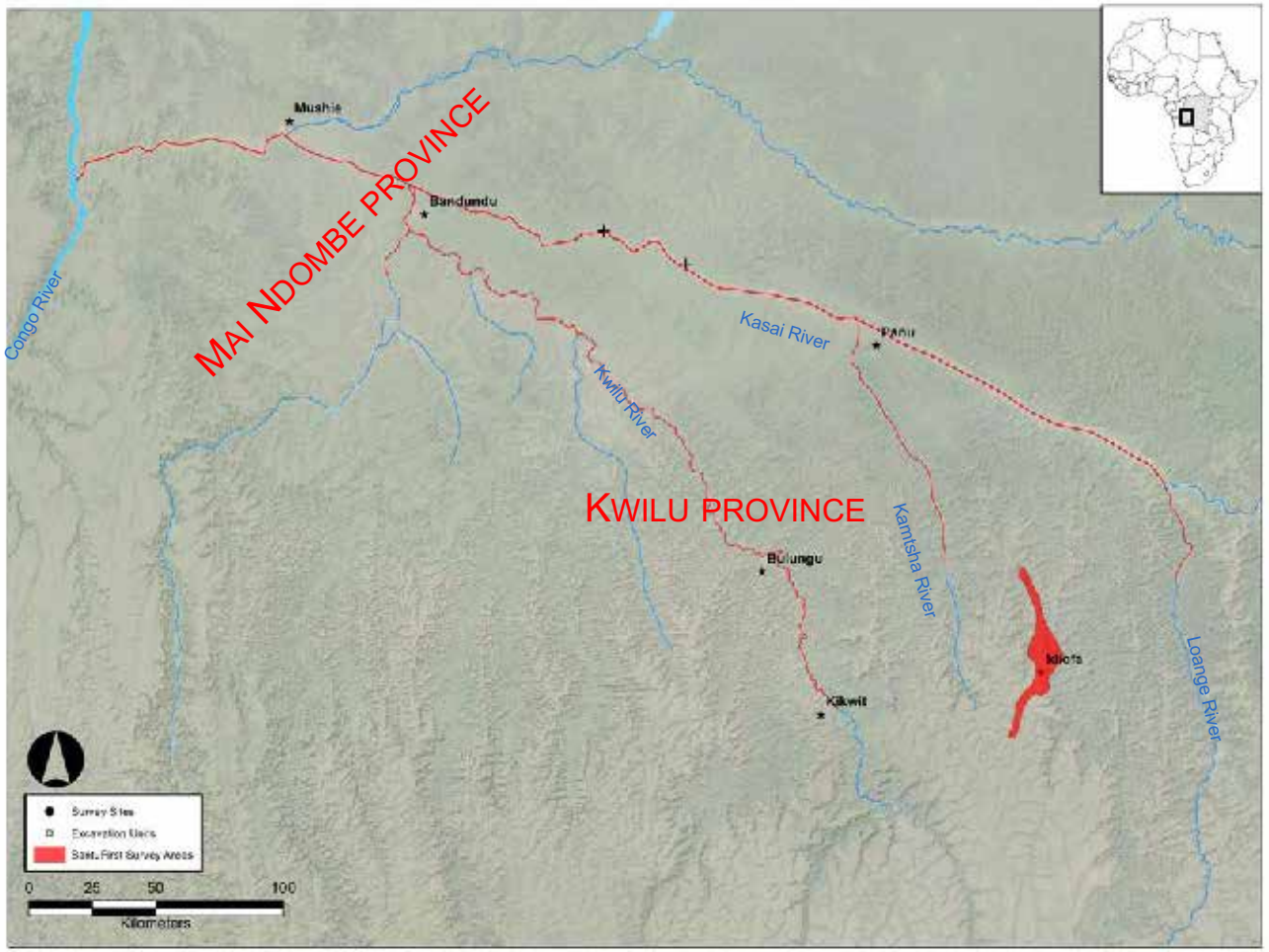
GHENT UNIVERSITY

BantUGent

www.bantugent.ugent.be

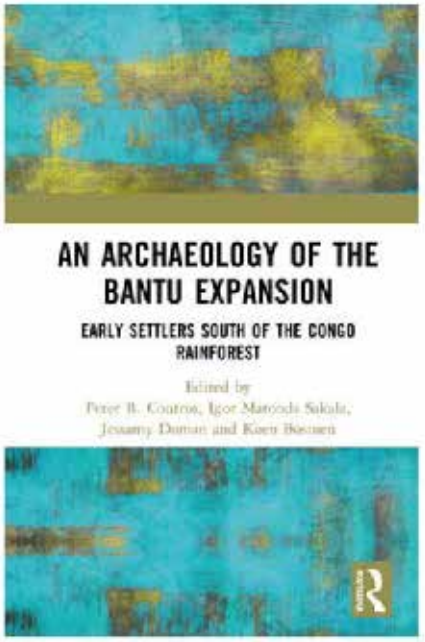
LOWER KASAI REGION

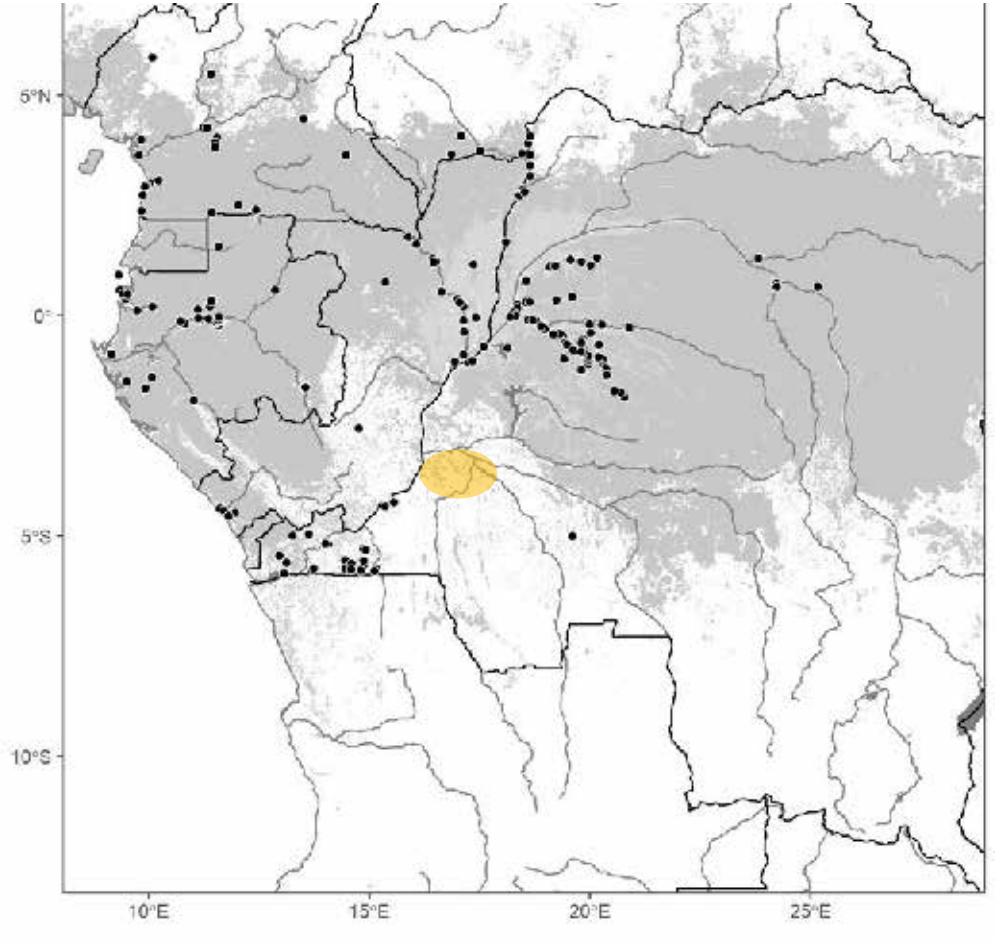
- Major affluent of the Congo River, which is called Kwa just before its confluence;
- Mai Ndombe and Kwilu Provinces;



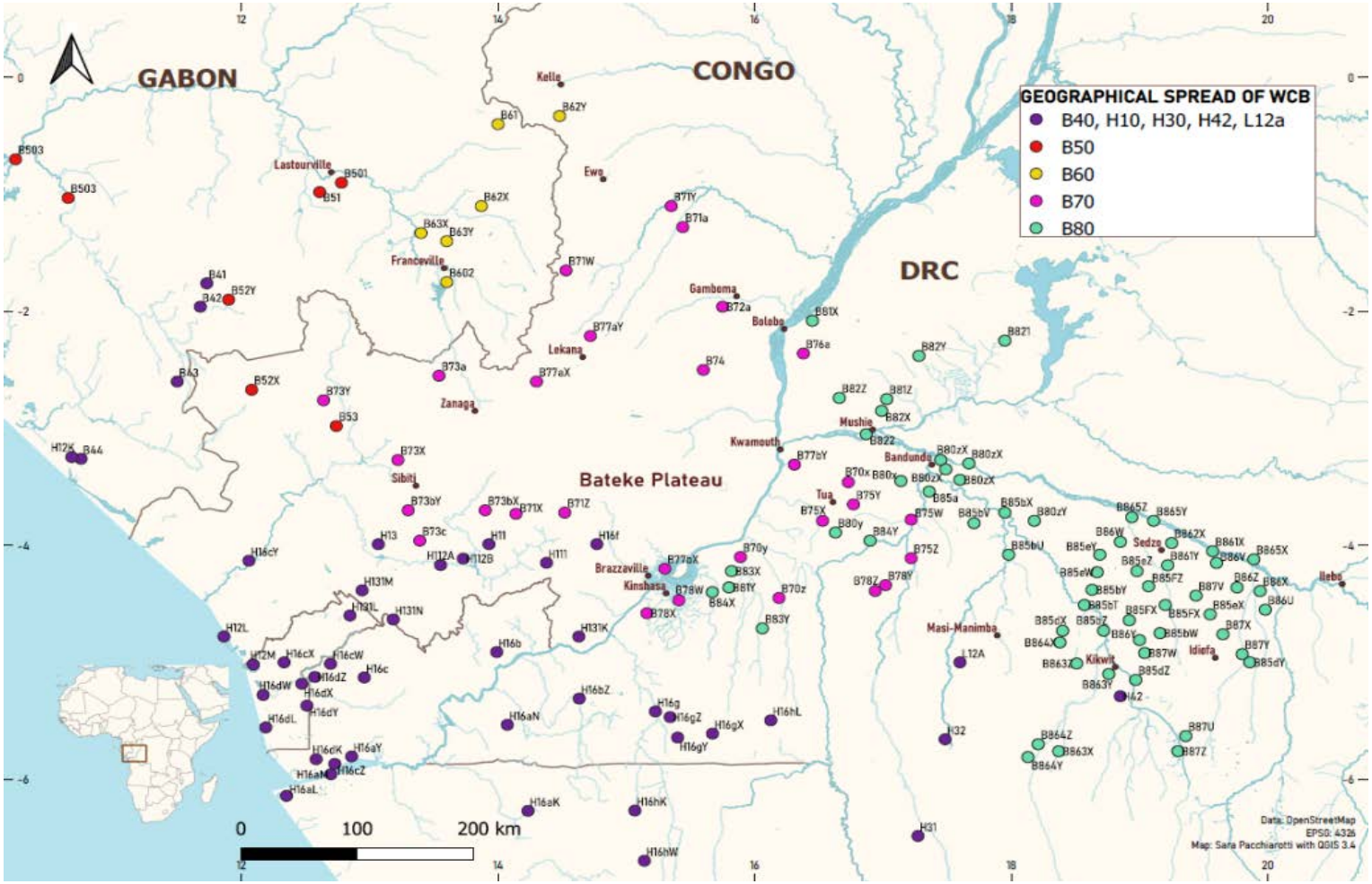
LOWER KASAI REGION

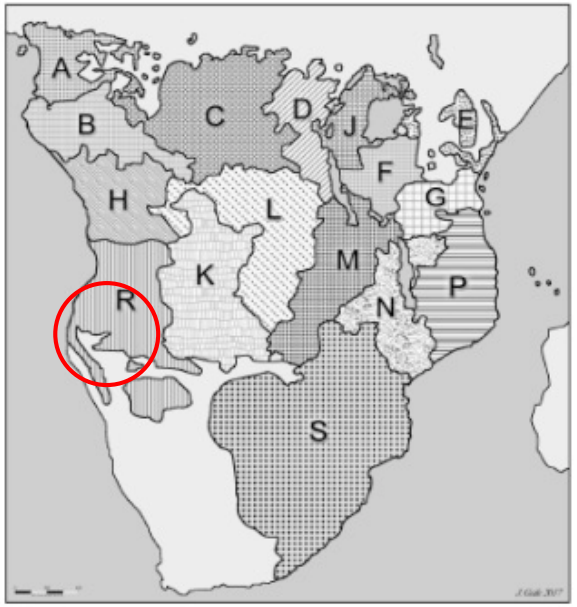
- Multidisciplinary (linguistic, genetic, and archaeological) fieldwork as part of ERC-funded BantuFirst project (2018-2023)
- Archaeology: 900 km river survey within the Kwilu-Kasai River network; ±150 new sites; 34 excavated





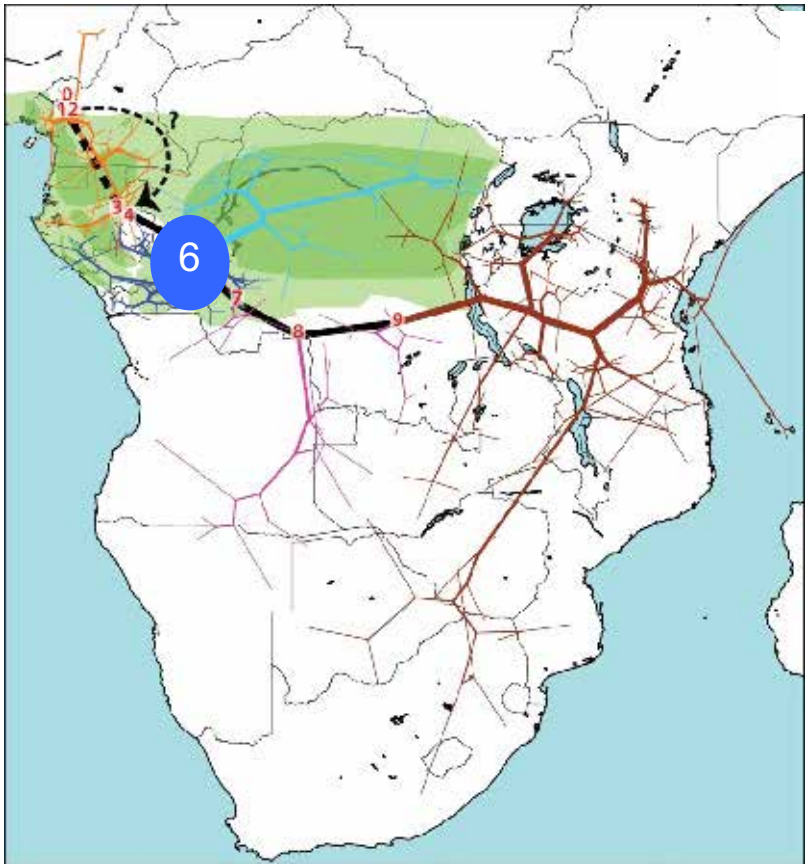
WEST-COASTAL BANTU LANGUAGES



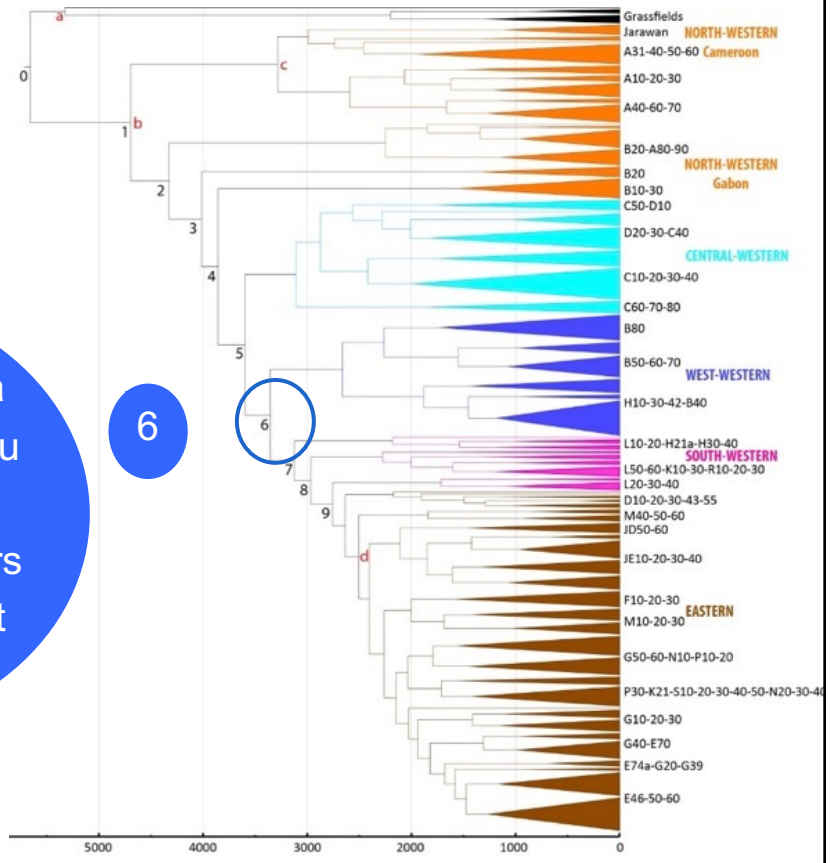


- Parts of Gabon, Congo, DRC and Angola
- Parts of Guthrie's zones B and H
- Its homeland relocated in Lower Kasai (Pacchiarotti et al. 2019)

WEST-COASTAL BANTU HOMELAND

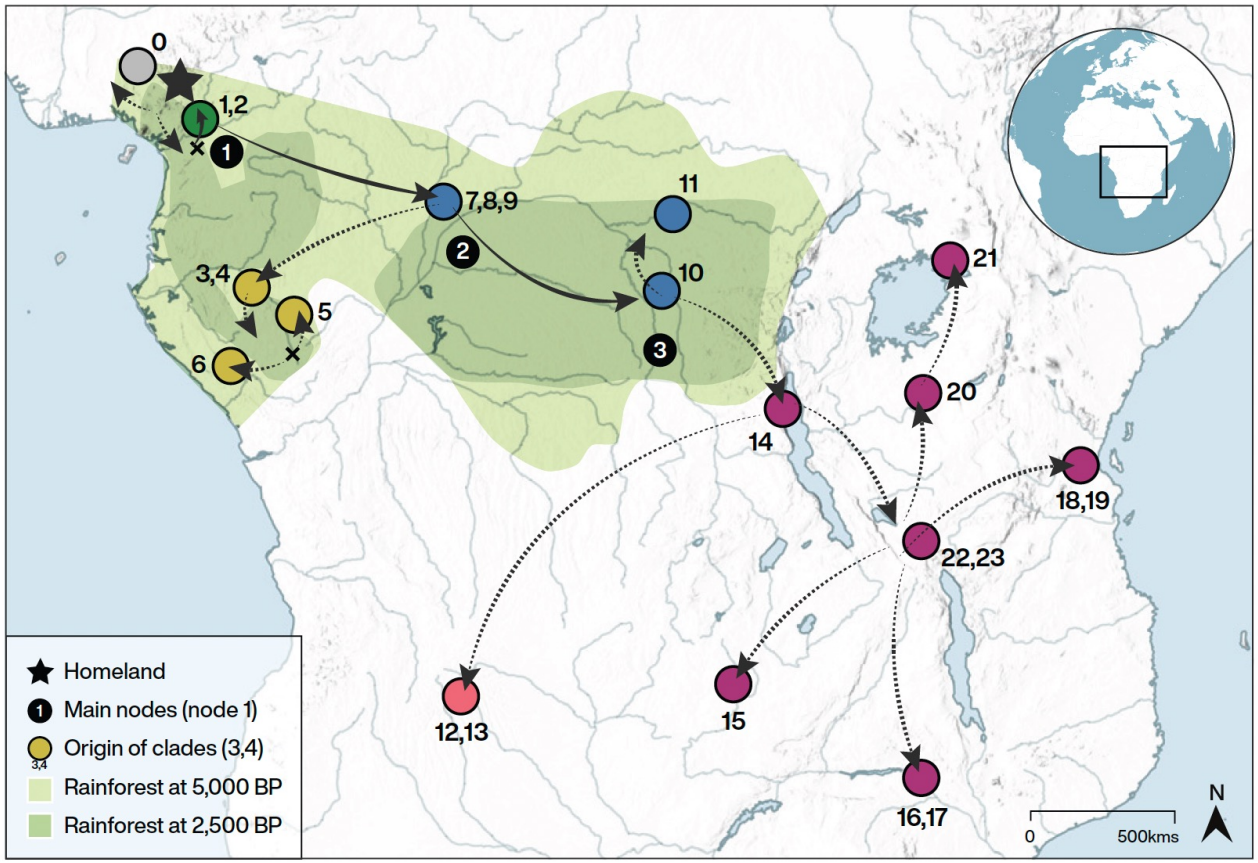


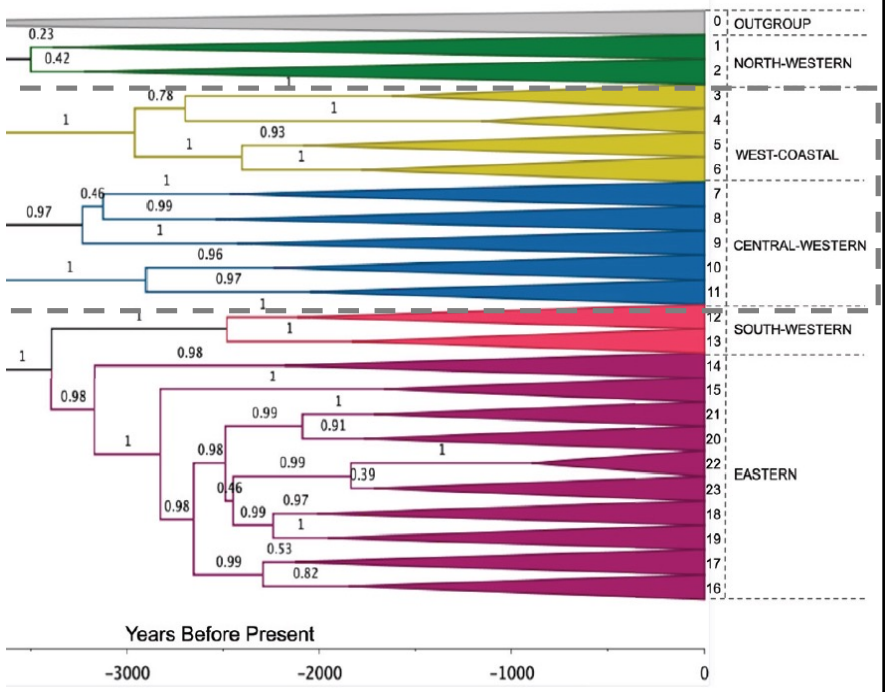
West Western aka
West-Coastal Bantu
=
First Bantu Speakers
South of the Forest



Grollemund et al. 2015

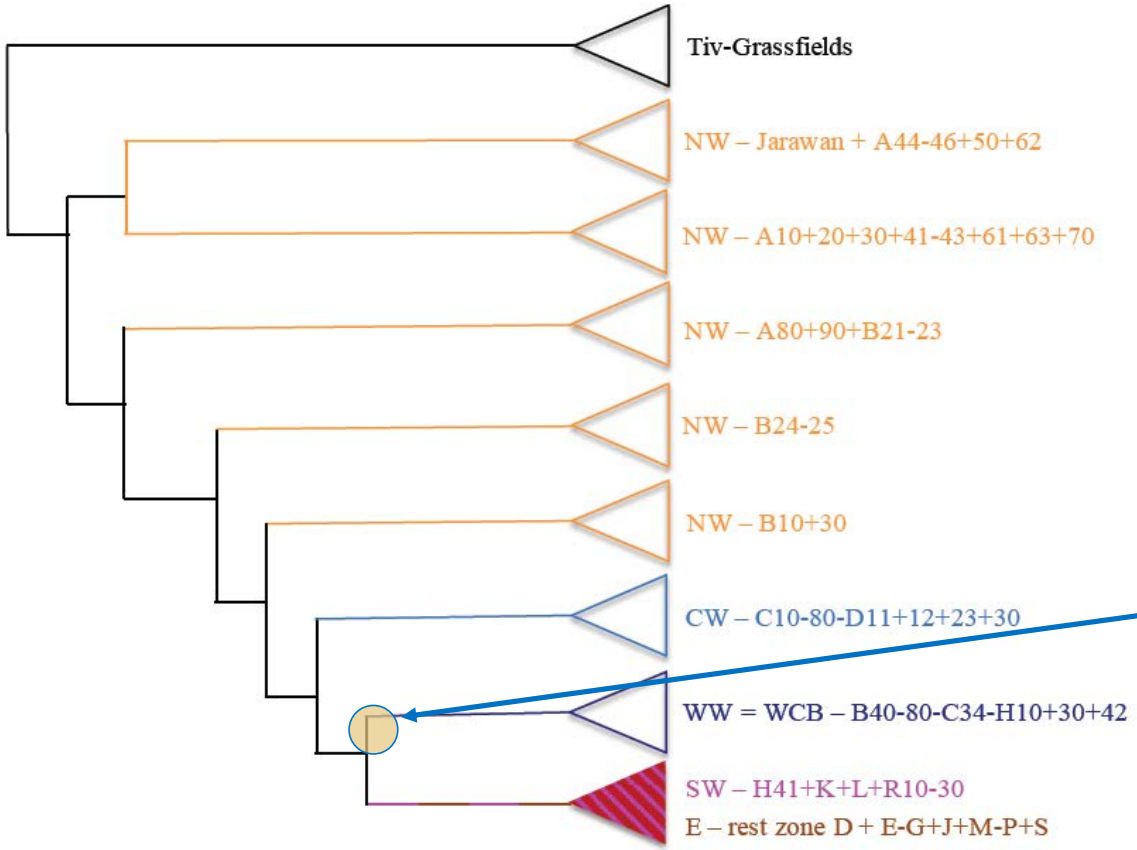
WEST-COASTAL BANTU HOMELAND





Koile et al. 2022

VELAR MERGER IN PROTO-WEST-COASTAL BANTU



Schematic depiction of the Bantu phylogeny in Grollemund *et al.* (2015)

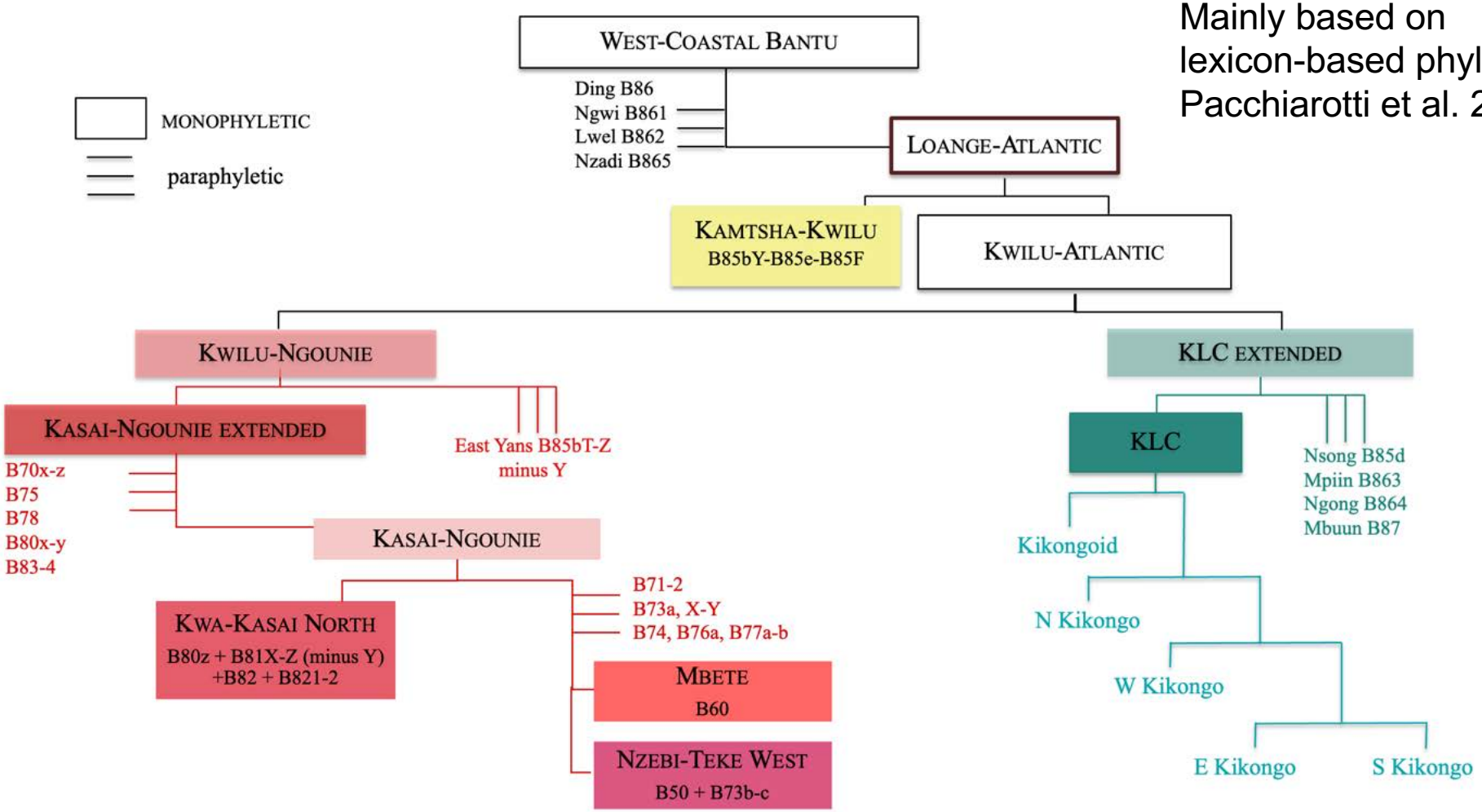
	Proto-Bantu	**Rundi J62 (East Bantu)**	**Yaka H31 (WCB)**
***g in C1**	*gàban 'share'	gaban-a	kábán-á
***g in C2**	*pígò 'kidney'	i-fyígo	m-fíku
***k in C1**	*kádà 'charcoal'	i-kára	kálá
***k in C2**	*dʊ́k 'vomit'	-rúka	-lúká

PB ***g/*k** >
PWCB ***k**

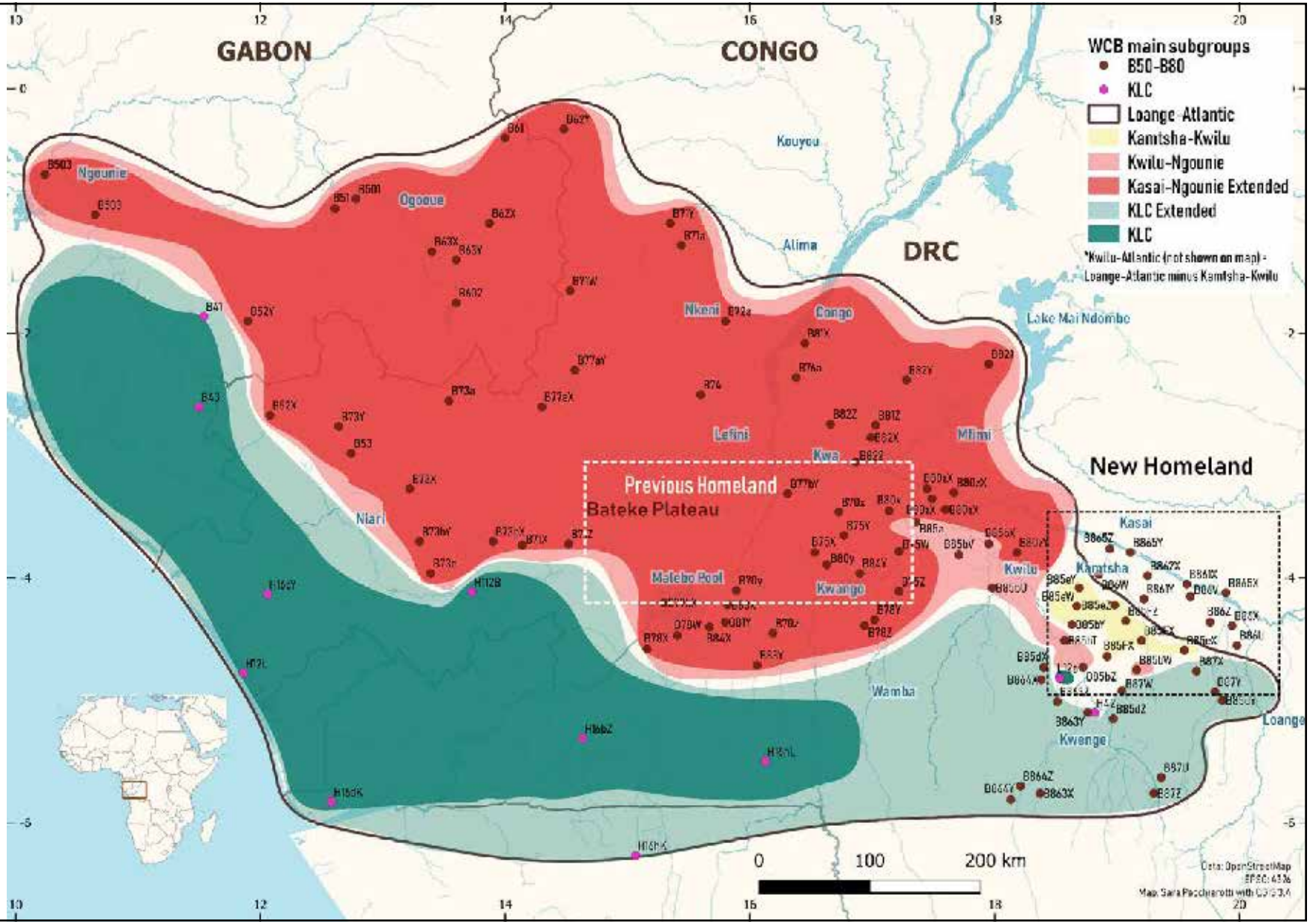
Pacchiarotti & Bostoen (2020: 165): "Gérard Philippson (p.c.) has suggested to us that the **unexpected fortition of *g1 and *g2 to /k/ and the merger of this /k/ with the already existing PB *k** in PWCB could indeed point towards to the **articulatory habits of shifting speakers at the origin of a substratum**."

INITIAL DIVERGENCE IN LOWER KASAI REGION

Mainly based on lexicon-based phylogeny Pacchiarotti et al. 2019



WCB HOMELAND



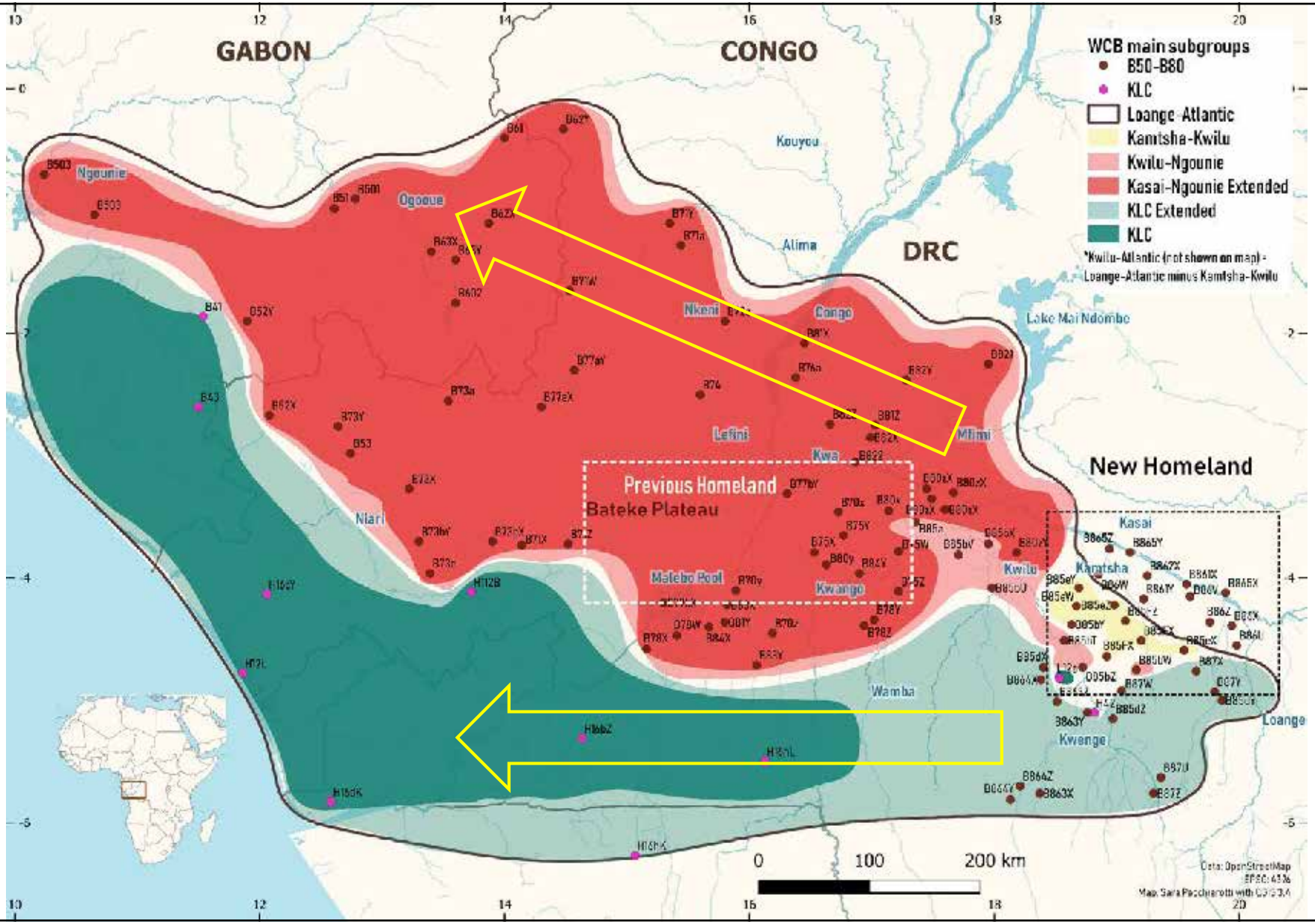
WHY HOMELAND IN THE LOWER KASAI REGION?

- the WCB homeland had been tentatively situated somewhere on the **Bateke Plateau**, the huge highland straddling the Democratic Republic of the Congo (DRC), the Republic of the Congo, and Gabon, and the Bandundu region (DRC) (de Schryver *et al.* 2015; Grollemund *et al.* 2015);

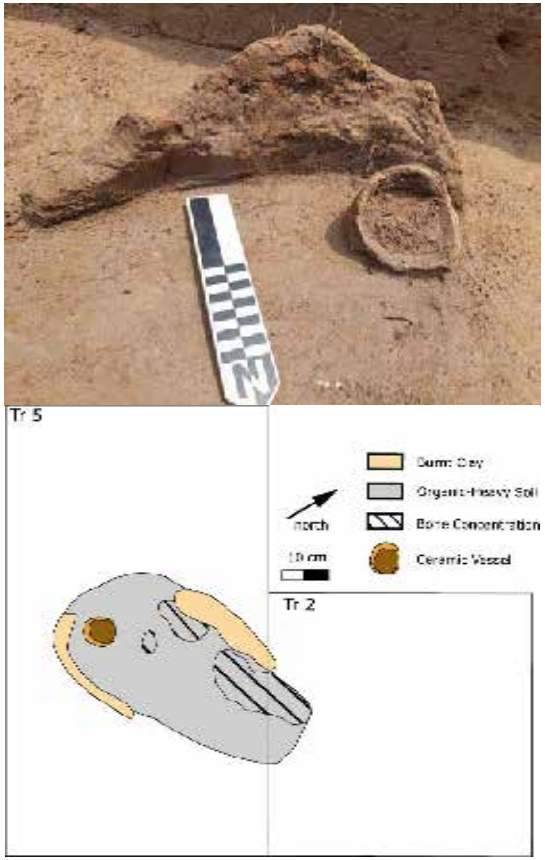
- As their phylogeny is based on exactly the same data as Grollemund *et al.* (2015), Koile *et al.* (2022) unsurprisingly also locate the WCB homeland closer to the Atlantic Coast than Pacchiarotti *et al.* (2019);

- Koile *et al.* (2022) attribute this mismatch to the fact that Pacchiarotti *et al.* (2019) model the WCB homeland "only on the basis of current (updated) locations of languages, not making use of an evolutionary model of the full Bantu family".

- Real reason: all phylogenies other than Pacchiarotti et al. (2019) have a very partial coverage of **Guthrie's B80 group** which hosts the **highest and deepest diversity** within WCB

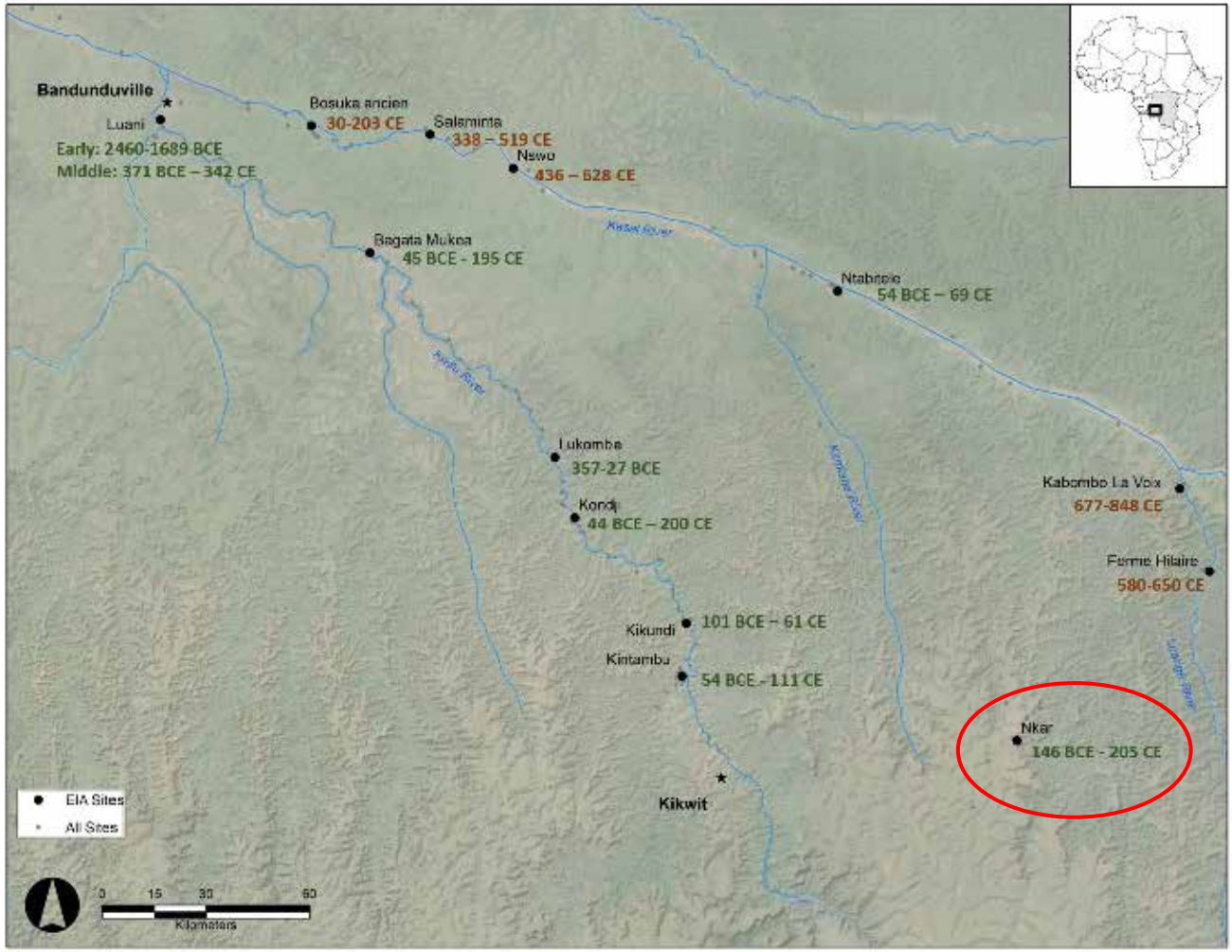

GABON
CONGO
DRC
WCB main subgroups
B50-B80
KLC
Loange-Atlantic
Kamtsha-Kwilu
Kwilu-Ngounie
Kasai-Ngounie Extended
KLC Extended
KLC
*Kwilu-Atlantic (not shown on map) = Loange-Atlantic minus Kamtsha-Kwilu
Previous Homeland
Bateke Plateau
New Homeland
Ngounie
Ogooue
Kouyou
Alima
Nkeni
Congo
Lake Mai Ndombe
Lefini
Mfimi
Kwa
Niari
Malebo Pool
Kwango
Kwilu
Kasai
Kamtsha
Wamba
Kwenge
Loange
0
100
200 km

EARLY IRON AGE (EIA) IN LOWER KASAI REGION



Early Luani Phase

2468 - 1701 BCE



Coutros et al. 2025

START IRON AGE SOUTH OF THE CONGO FOREST

- BantuFirst excavations around **Idiofa** (Kwilu Province, DRC) have yielded the **earliest evidence for iron production, combined with ceramics and lithic artefacts**, south of the Congo Forest during the **second century BCE**;

- Palaeoecological data show that the producers of this industry did not settle in open grasslands but in a habitat where the **forests had started to undergo climate-induced degradation before their arrival**;

- EIA pottery from Idiofa resembles most closely **slightly younger Kay Ladio pottery (30–475 CE) from the Lower Congo region further west**, which is also associated with the first metallurgy there.

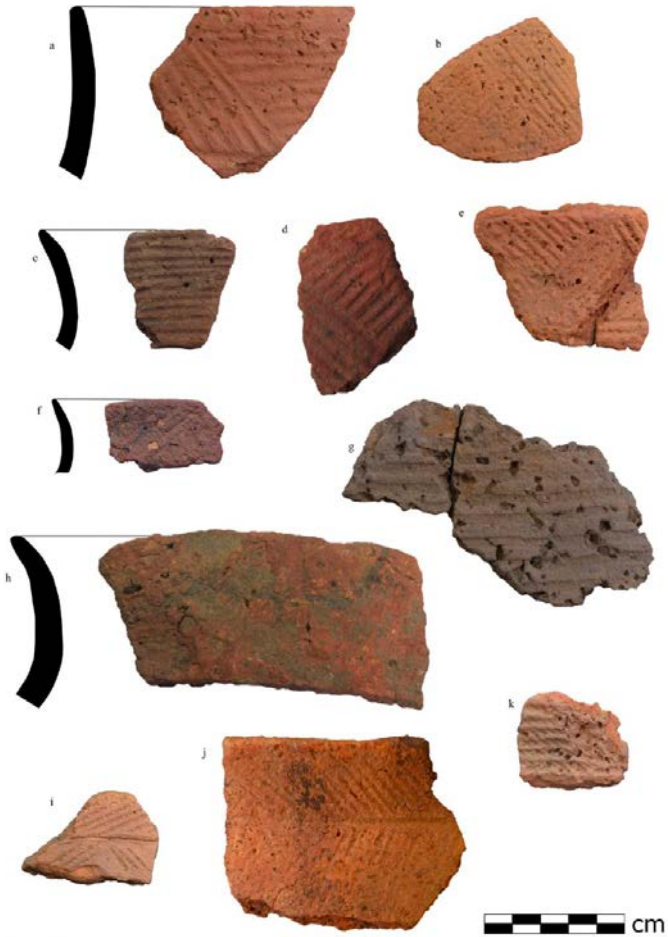
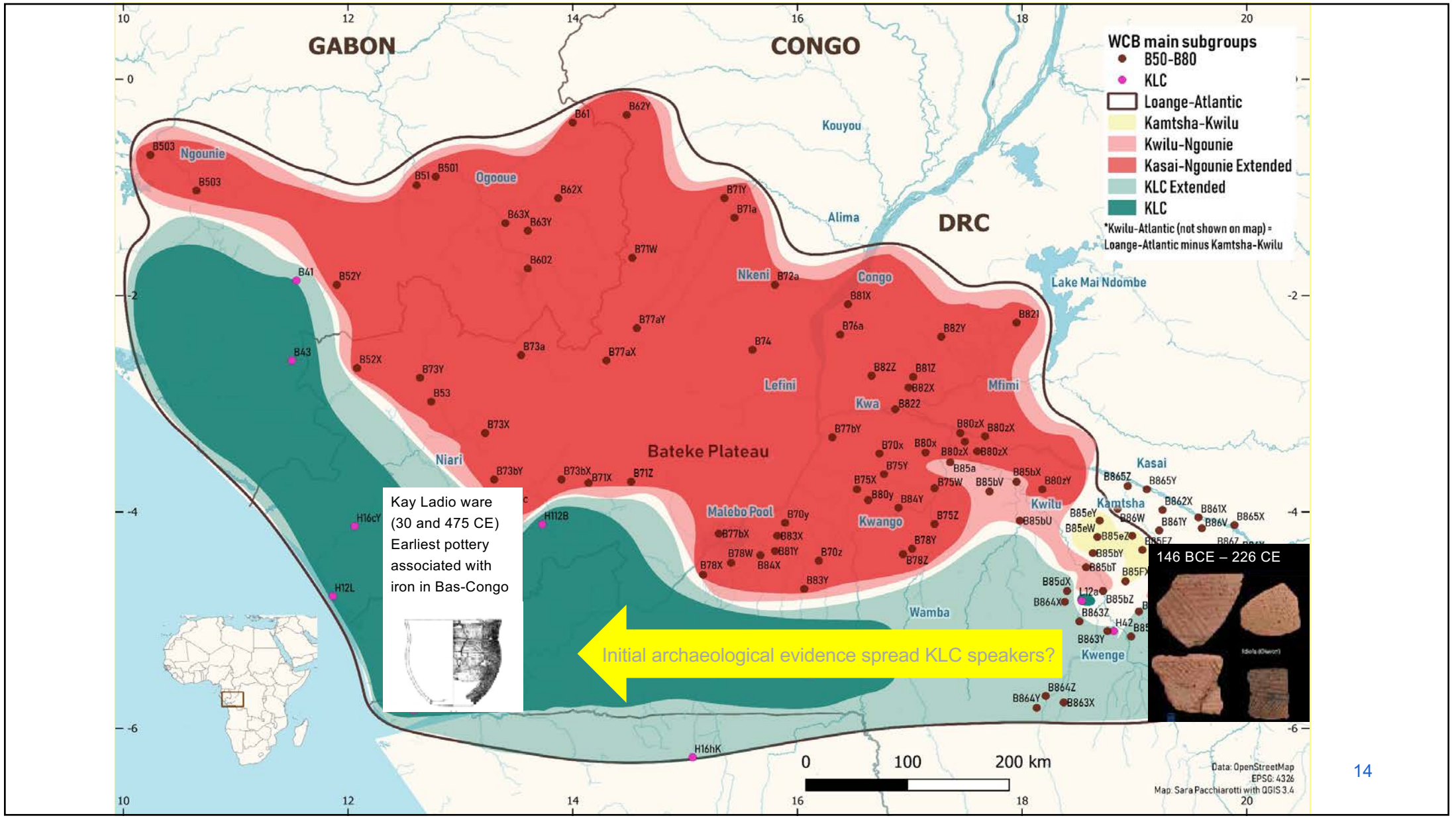
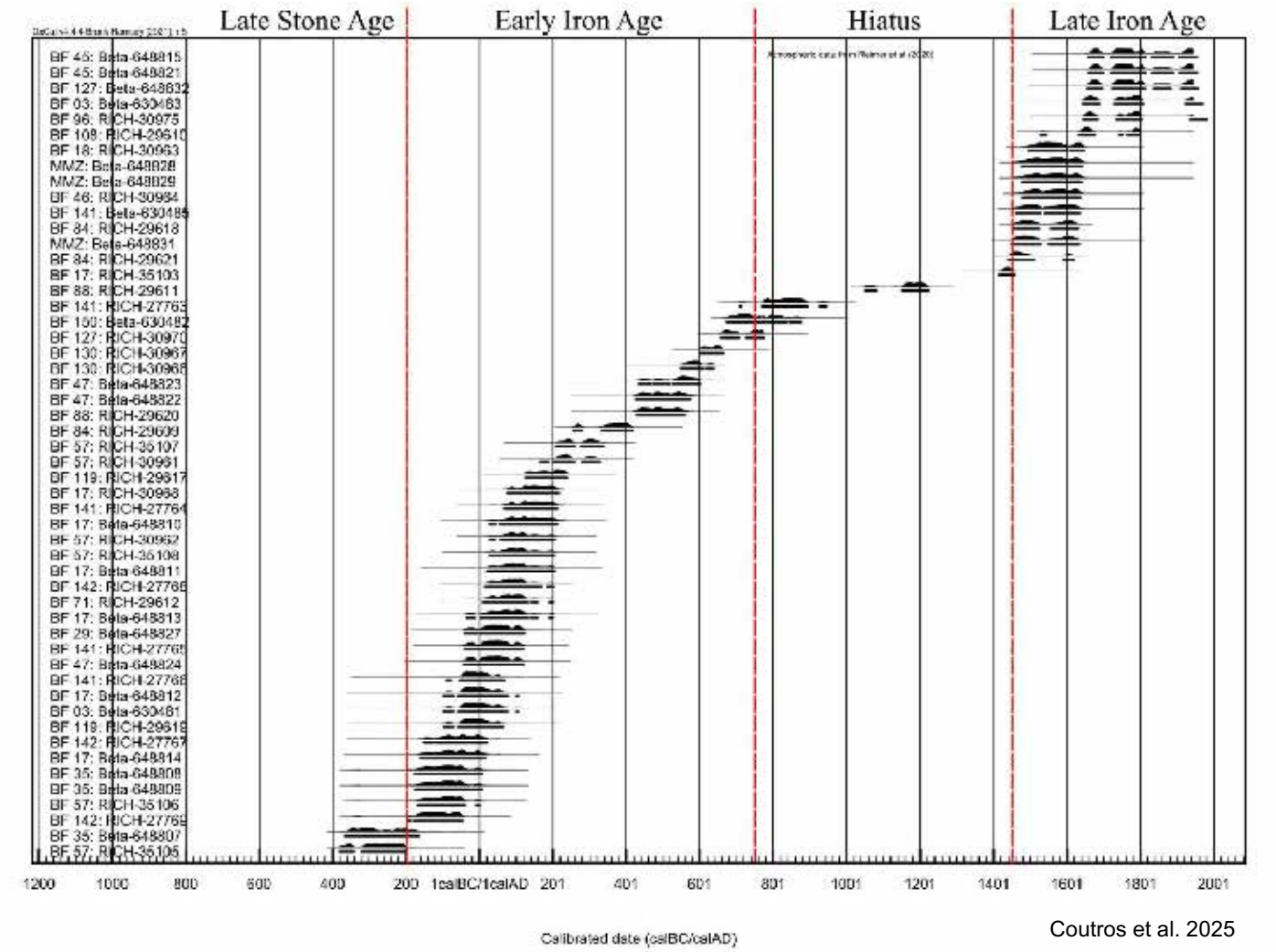


Figure 8. Representative Idiofa Early and Middle pottery assemblage and potential analogues: a–h) examples of Early Phase Idiofa pottery; i) Idiofa Middle Phase; j) Kay Ladio Group pottery from Sakuzi; k) potential cord-wrapped Idiofa Early Phase pottery.

Coutros et al. 2024


GABON
CONGO
DRC
Kouyou
Alima
Lake Mai Ndombe
WCB main subgroups
B50-B80
KLC
Loange-Atlantic
Kamtsha-Kwilu
Kwilu-Ngounie
Kasai-Ngounie Extended
KLC Extended
KLC
*Kwilu-Atlantic (not shown on map) = Loange-Atlantic minus Kamtsha-Kwilu
Ngounie
Ogooue
Nkeni
Congo
Lefini
Mfimi
Kwa
Bateke Plateau
Niari
Malebo Pool
Kwango
Kwilu
Kamtsha
Kasai
Wamba
Kwenge
Kay Ladio ware (30 and 475 CE) Earliest pottery associated with iron in Bas-Congo
Initial archaeological evidence spread KLC speakers?
146 BCE – 226 CE
0
100
200 km
Data: OpenStreetMap
EPSG: 4326
Map: Sara Pacchiarotti with QGIS 3.4

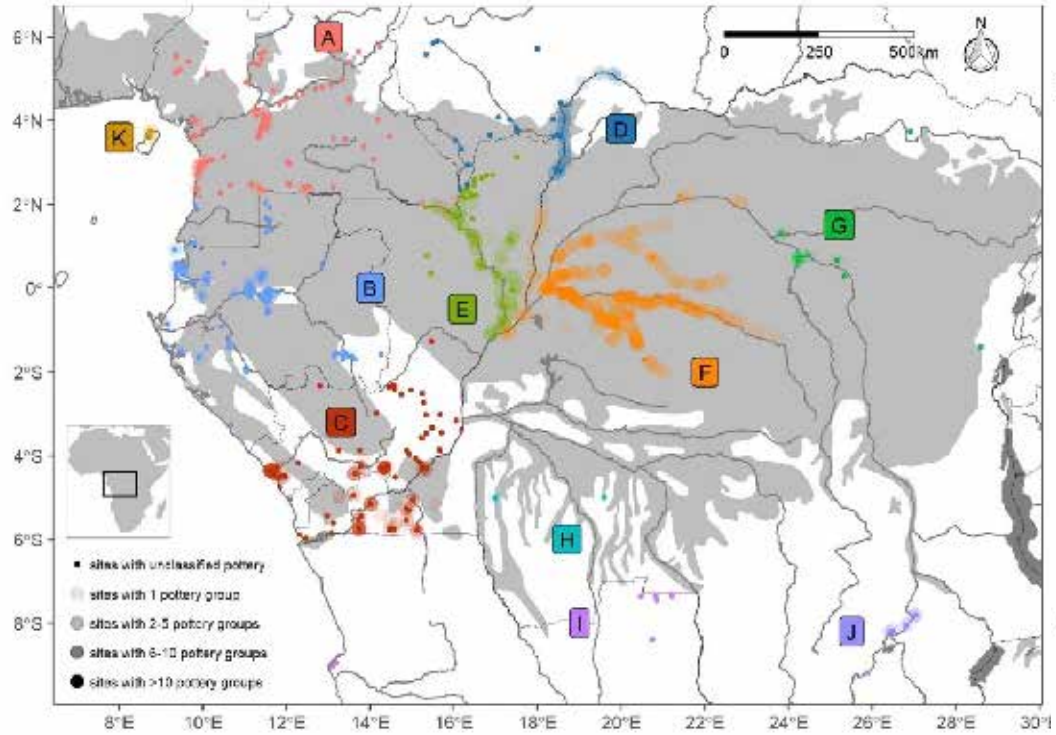
POPULATION COLLAPSE AFTER EARLY IRON AGE



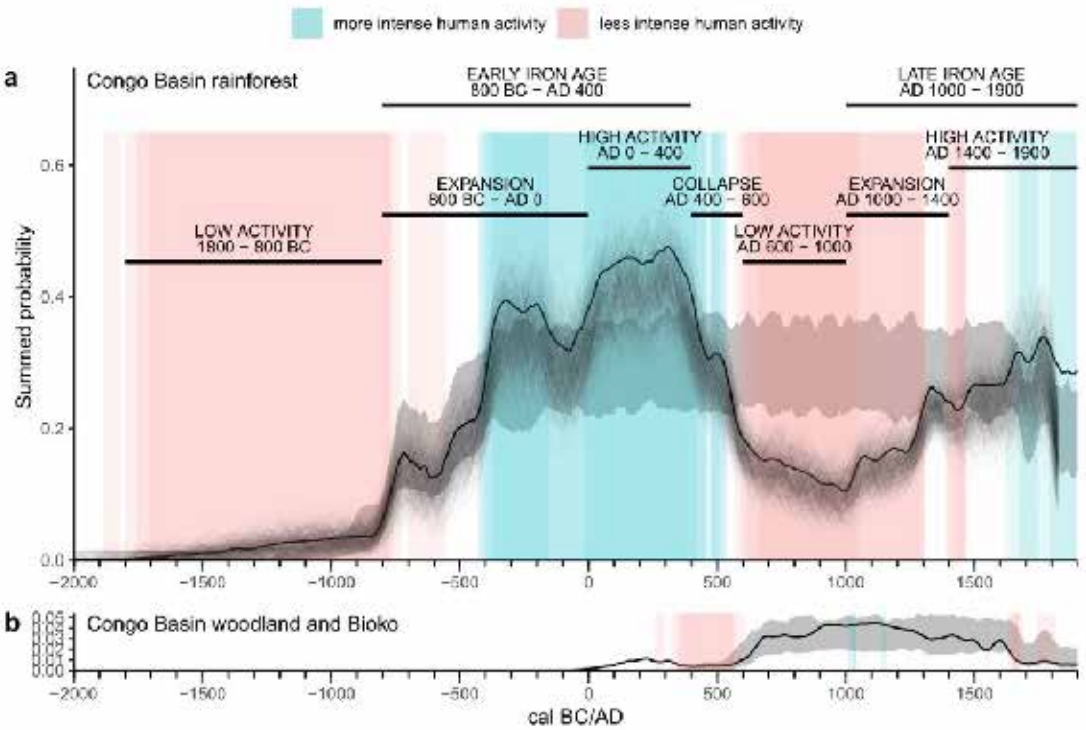
- Radiocarbon dates from sites with pottery in the Lower Kasai region
- Between ca. **750 and 1450 CE,** there are **significantly less human activity** than during periods before (Early Iron Age) and after (Late Iron Age).

Coutros et al. 2025

POPULATION COLLAPSE IN CONGO RAINFOREST



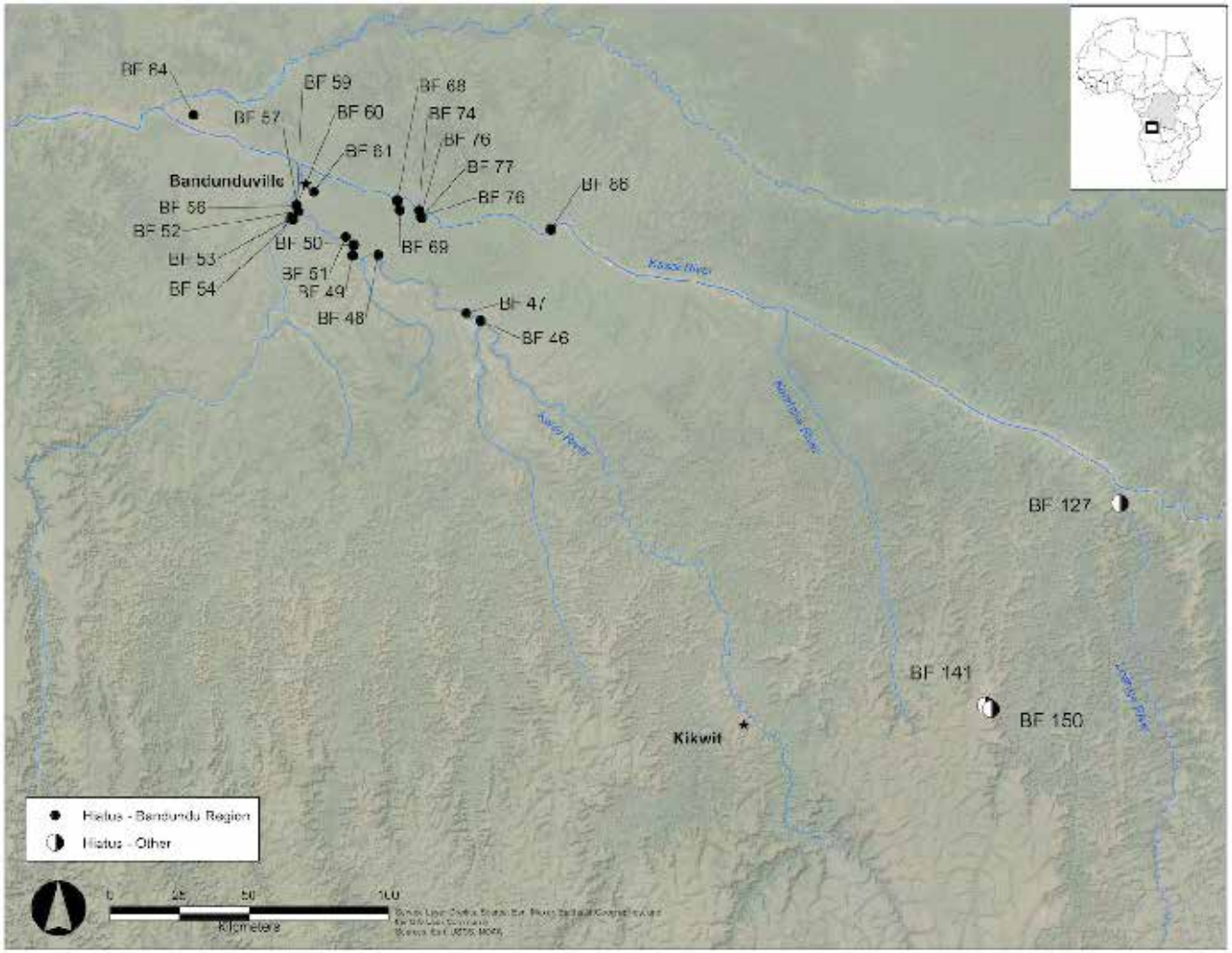
Geographic distribution of **pottery finds in the Congo rainforest and adjacent woodland areas of Central Africa**. Each circle represents a site with an assemblage of well-described pottery groups.



Temporal variation in the activity of **pottery-producing communities** in the Congo basin over the **past 4000 years** based on archaeological ^{14}C dates

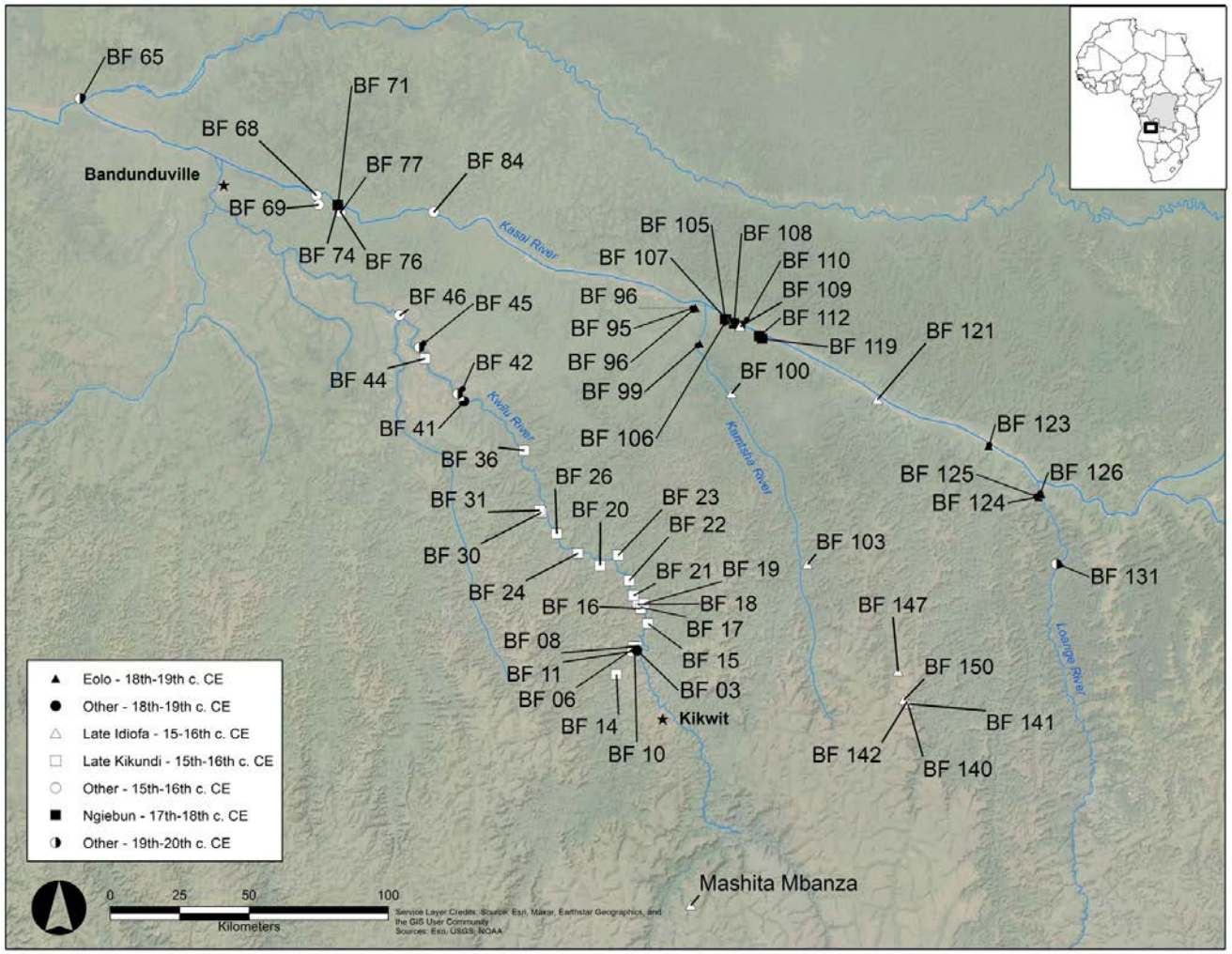
Seidensticker et al. 2021

REFUGIA IN LOWER KASAI BETWEEN EIA AND LIA



- Between the **7th and 9th centuries CE**, small settlements persist at Okwon and Esal near **Idiofa** (Coutros *et al.* 2024), as they do at Ntswo along the Kasai River and at Luani **near Bandundu** in the **12th and 13th centuries CE** (Coutros & Matonda Sakala 2025)
- **Offspring of the area's first Bantu speakers and their languages** may thus **not** have **vanished entirely**
- Still a **significant reduction of linguistic diversity** due to **language death** and a relocation of surviving WCB languages
- **Resettlement** of populations in certain **refuge zones** may also have induced **contact between related WCB languages** that used to be isolated from each other.

REPOPULATION AND INTEGRATION DURING LIA



- The Late Iron Age archaeological record of the Lower Kasai region testifies to the **development of large-scale interaction spheres**

- As soon as the entire study area is resettled in the **15th and 16th centuries CE**, **several pottery traditions** sharing significant numbers of attributes stretch over **more than 100 kilometres**.

LANGUAGE CONVERGENCE IN LOWER KASAI REGION

- Despite the highest heterogeneity in terms of basic vocabulary, the languages in wider Lower Kasai area share **numerous unique innovation in phonology, morphology, and syntax** which are absent elsewhere in WCB and often also elsewhere in the Bantu family;

- These shared innovations **crosscuts major genealogical subgroups inside and outside WCB**, e.g. attested in Central-Western Bantu languages such as Bushong (C83) → in all likelihood **contact-induced**;

- Diachronic phonological features in decreasing order of geographic spread within the study area :
  (1) voiced prenasalized consonant cluster reduction (Pacchiarotti *et al.* 2024)
  (2) diphthongization (Koni Muluwa & Bostoen 2012)
  (3) labial-velar stops (Maselli *et al.* 2021)
  (4) final vowel loss (Pacchiarotti & Bostoen 2021)
  (5) umlaut (Bostoen & Koni Muluwa 2014)
  (6) development of interior vowels (Pacchiarotti *et al.* 2021)

VOICED NASAL-CONSONANT CLUSTER REDUCTION

- The regular reduction of Proto-Bantu's voiced NC clusters to a simple nasal, i.e., $NC_{[+voice]}$ > N in word-final position without any specific conditioning environment

Proto-Bantu		Ngwi B861	Bushong C83	Nzebi B52	Ntandu H16g
*cʊ́mbà 'buy'	>	*ʃûm*	*ʃwóom*	*sô:mbà*	*súumba*
*dámbà 'cook'	>	*lyâm*	*láam*	*là:mbà*	*láamba*
*cíndí 'squirrel'	>	*ʃín*	*i-ʃyéen*	*tʃí:ndì*	—
*jʊ̀ndò 'hammer'	>	*n-dʒûn*	*n-coon*	*nzù:ndù*	*nzuundu*
*kíngó 'neck'	>	*n-kíŋ*	*kíiŋ*	*kí:ngà*	*nsíingu*
*tʊ́ngà 'build; plait'	>	*tûŋ*	*tóoŋ*	*tó:ngà*	*túunga*
		(BantuFirst fieldwork)	(Vansina 1959)	(Niama-Niama 2022)	(Daeleman 1983)

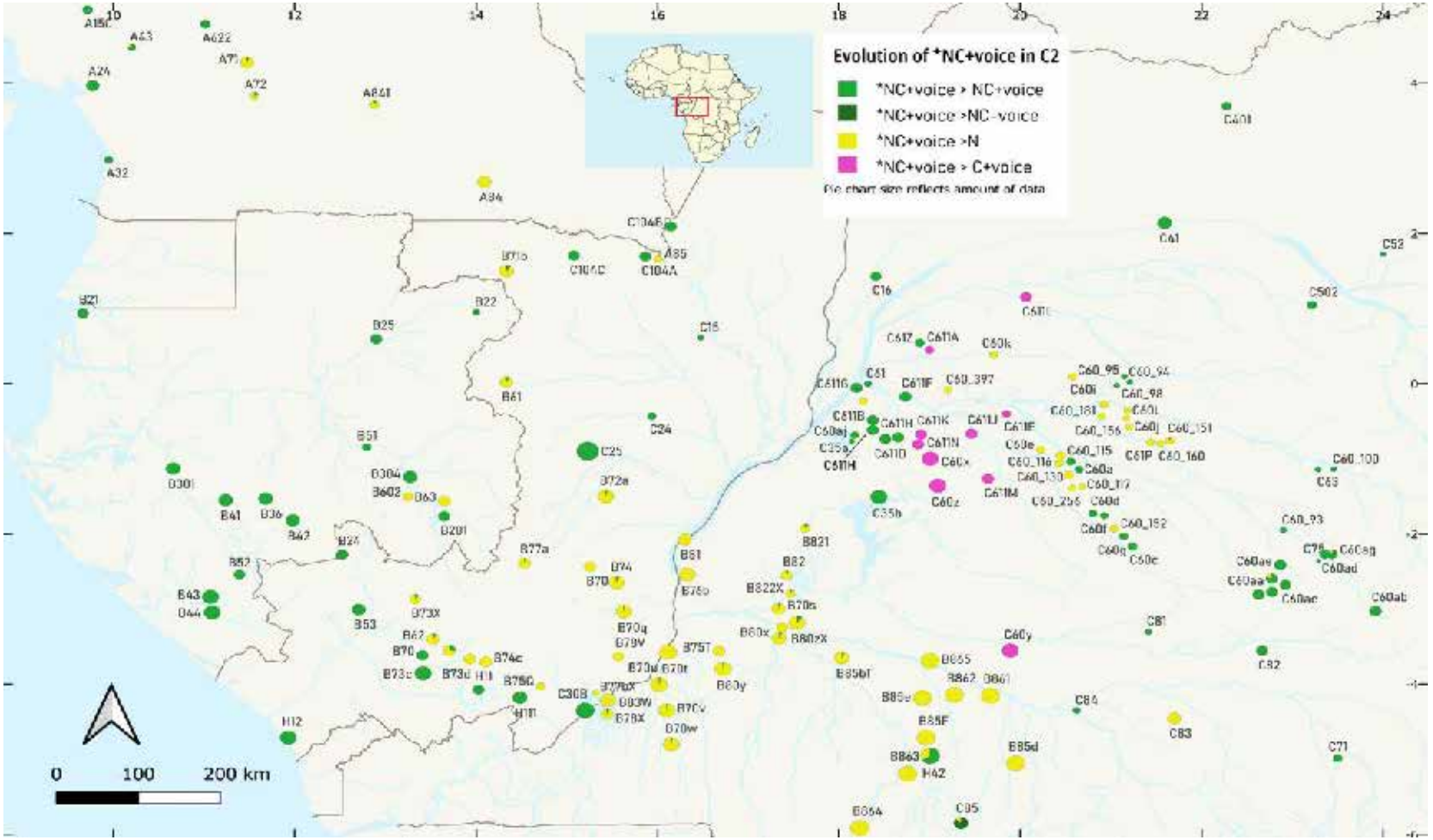
NC[+VOICE] CLUSTER REDUCTION

B85	Yans	1	B83	Mfinu	1
B602	Kaning'i	1	B85d	Nsong	1
B61	Mbete	1	B85e	Mpur	1
B62	Mbaama	1	B85F	Nsambaan	1
B63	Nduumo	1	B86	Ding	1
B70x	Bibaana	1	B861	Ngwi	1
B70y	South Teke	1	B862	Lwel	1
B70z	Bwala	1	B863	Mpiin	1
B71	North Teke	1	B864	Ngong	1
B72a	Ngungwel	1	B865	Nzadi	1
B73	West Teke	1	B87	Mbuun	1
B73b	Laali	1	C34	Sakata	1
B74	Eboo	1	C83	Bushong	1
B75	Tio Bali	1	B501	Wanzi	0
B76a	Mosieno	1	B503	Vili	0
B77a	Kukwa	1	B51	Duma	0
B77b	Fumu	1	B52	Nzebi	0
B78	Wuumu	1	B53	Tsaangi	0
B80x	Boma Nkuu	1	B73a	Tsaayi	0
B80y	South Boma	1	B73c	Yaa	0
B80z	Boma Yumu	1	C84	Lele	0
B81	Tiene	1	C85	Wonk	0
B82	North Boma	1	H41	Hungan	0
B821	Mpe	1	L12a	Samba	0
B822	Nunu	1			

NC[+VOICE] CLUSTER REDUCTION

- Ewondo-Fang (A70) and Makaa-Njem (A80) in southern Cameroon and northern Gabon (Medjo Mvé 1997; Cheucle 2014)

- Nkengo (C61L), Ngando (C63) (Grégoire 2003) and several other varieties (fieldwork Guy Kouarata) in Inner Congo Basin'

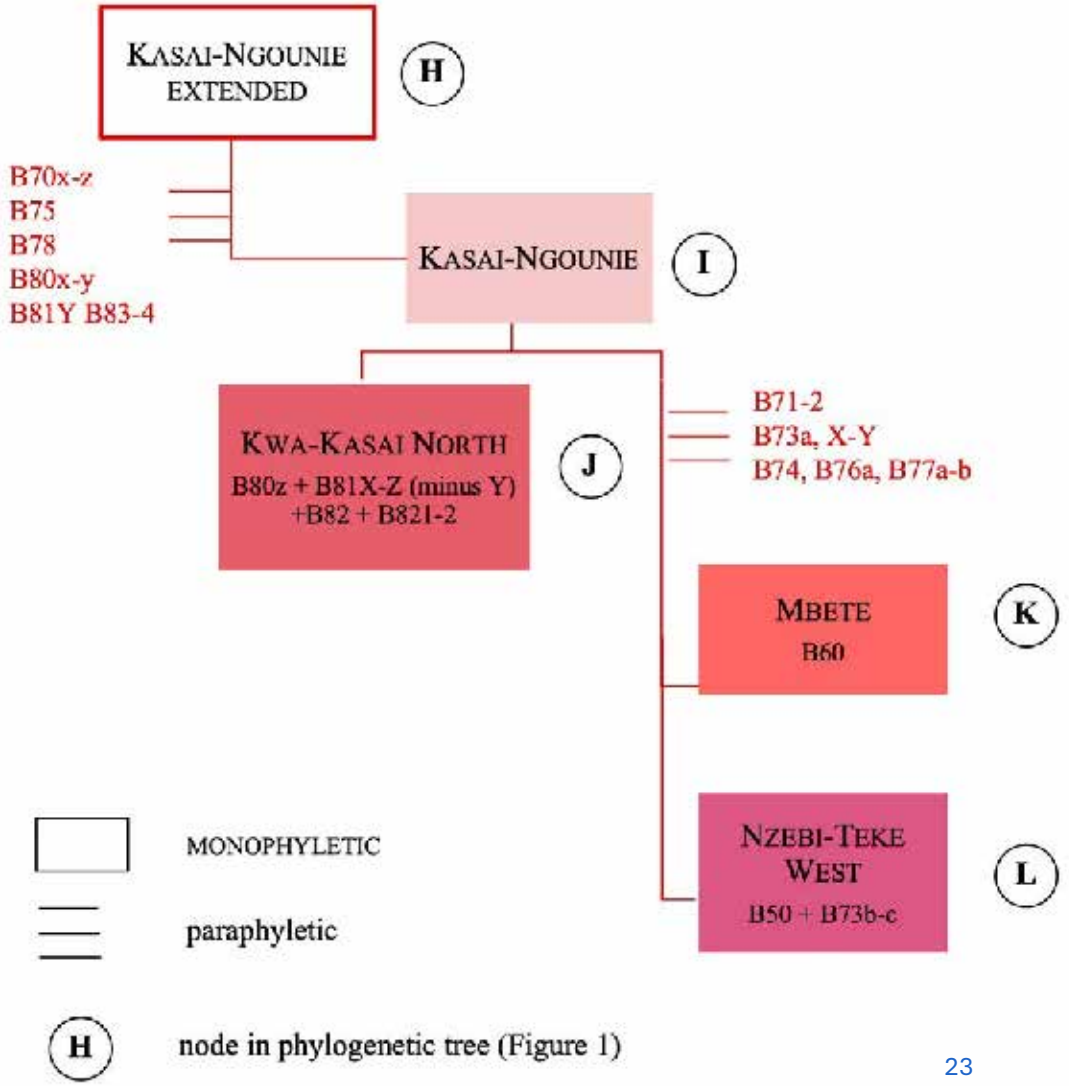


*NG > N > Ø IN KWILU-NGOUNIE

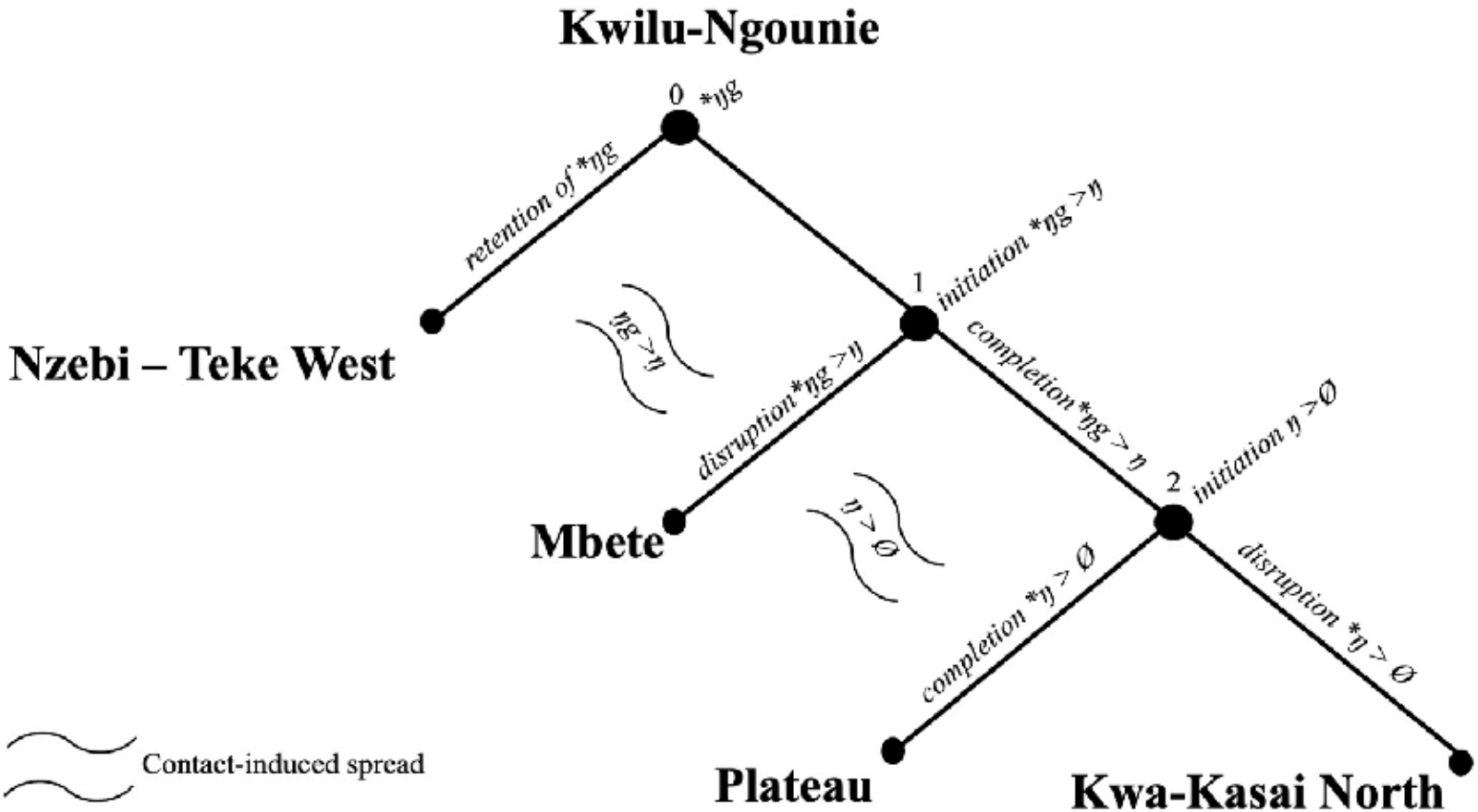
TABLE 2 Kwilu Ngounie varieties with systematic loss of Ca *ŋg

Variety	No. of reflexes	Reflex					
		ŋg		ŋ		Ø	
		No.	%	No.	%	No.	%
B70p	32	1	1%	0		31	99%
B70q	30	1	4%	0	–	29	96%
B70r	24	0		0		24	100%
B70s	28	7	25%	0		21	75%
B70t	25	1	4%	0	–	24	96%
B70u	37	2	5%	0		35	95%
B70v	31	0	–	0	–	31	100%
B70w	32	1	4%	0		31	96%
B71bX	34	5	15%	0		29	85%
B71bY	65	17	26%	0		48	74%
B72a	29	0		0		29	100%
B73d	72	3	4%	10	14%	59	82%
B74	93	8	9%	0		85	91%
B75	34	3	9%	0		31	91%
B76b	34	0		0		34	100%
B77a	28	0		0		28	100%
B77b	28	0	–	1	4%	27	96%
B78V	23	1	4%	0		22	96%
B78X	26	0		2	8%	24	92%
B80x	28	2	5%	0		26	95%
B80y	25	1	4%	0		24	96%
B83	35	1	4%	0	–	34	96%
B85a	52	0		0		52	100%
B85b	48	11	23%	0	–	37	77%

Pacchiarotti et al. 2024



INHERITANCE, LEXICAL DIFFUSION AND CONTACT-DRIVEN SPREAD



DIPHTHONGIZATION

- Vowel is broken into a sequence of a vowel and a glide (e.g., *e* > *ey*), or a glide and a vowel (e.g., *e* > *ye*);
- Common in the world's languages, but rare in Bantu, except again in some parts of rainforest, e.g., Ewondo-Fang (A70) and Makaa-Njem (A80) in southern Cameroon and northern Gabon (Medjo Mvé 1997; Cheucle 2014)

Proto-Bantu		Lwel B862	Mfinu B83	Bembe H11
*bòmbó 'nose'	>	*m-bwăm*	*m-bwɔ̀ɔ̀mɔ̀*	*m-bɔ́ɔmbɔ́*
*kómbà 'sweep'	>	*kwám*	*kwɔ́ɔ́mɔ̀*	*kɔ́ɔ́mbɔ́lɔ*
*cóod 'choose'	>	*ʃwál*	*swɔ́ɔ́lɔ*	*sɔ́ɔ́lɔ*
		(Khang Levy 1979)	(Daeleman s.d.)[7]	(Kouarata 2016)

DIPHTHONGIZATION

B85	Yans	1	B83	Mfinu	1
B53	Tsaangi	1	B85d	Nsong	1
B602	Kaning'i	1	B85e	Mpur	1
B61	Mbete	1	B85F	Nsambaan	1
B62	Mbaama	1	B86	Ding	1
B63	Nduumo	1	B861	Ngwi	1
B70x	Bibaana	1	B862	Lwel	1
B70y	South Teke	1	B863	Mpiin	1
B70z	Bwala	1	B864	Ngong	1
B71	North Teke	1	B865	Nzadi	1
B72a	Ngungwel	1	B87	Mbuun	1
B73	West Teke	1	C34	Sakata	1
B73a	Tsaayi	1	C83	Bushong	1
B73b	Laali	1	B501	Wanzi	0
B73c	Yaa	1	B503	Vili	0
B75	Tio Bali	1	B51	Duma	0
B76a	Mosieno	1	B52	Nzebi	0
B77a	Kukwa	1	B74	Eboo	0
B77b	Fumu	1	B821	Mpe	0
B78	Wuumu	1	B822	Nunu	0
B80x	Boma Nkuu	1	C84	Lele	0
B80y	South Boma	1	C85	Wonk	0
B80z	Boma Yumu	1	H41	Hungan	0
B81	Tiene	1	L12a	Samba	0
B82	North Boma	1			

THE ACQUISITION OF LABIAL-VELAR STOPS

- Labial-velar stops are doubly articulated consonants produced with overlapping labial and velar closures: voiced oral stop *gb*, unvoiced oral stop *kp*, nasal stop *ŋm*, and prenasalized stop *Ngb* usually realized as [*ŋmgb*] or [*ŋgb*] (Connell 1994; Ladefoged & Maddieson 1996);
- World-wide, most prolific in Africa (Cahill 2008:380; Maddieson 2011);
- Seen as a feature typical of the so-called "Macro-Sudan Belt" (Clements & Rialland 2008; Güldemann 2008).

	*gúá 'salt'	*kʊ̀á 'yam'	*kúà 'die'	
Nzadi B865	*o-kpá*	*o-kpá*	*o-kpá*	(Crane *et al.* 2011)
Lwel B862	*ŋ̀-kpɛ*	*kə̀-kpɛ*	*ò-kpɛ*	(Khang Levy 1979)
Tiene B81	—	*be-kpa ~ kwa*	*o-kwa*	(Ellington 1977)
Tio B75	*ɔ-kpá*	*í-kwa*	*ó-pfa*	(Burssens 1992)
Boma Yumu B80z	*mu(n)-gbá*	*kë-gpá*	*ó-gpa*	(Burssens 1999)
Nginji B76b	*móŋ-gbà*	*è-kpá*	*ò-kpà*	(Kouarata fieldwork 2021)
Ngungwel B72a	*ɔŋ-gba ~ ɔŋ-gwa*	*e-kpá/ekwá*	*ò-kpá ~ ò-kwá*	(Kouarata fieldwork 2021)
Sakata C34	*mùŋ-kpá*	*è:kpá*	*òkpá*	(Maselli *et al.* forthcoming)

LABIAL-VELAR STOPS

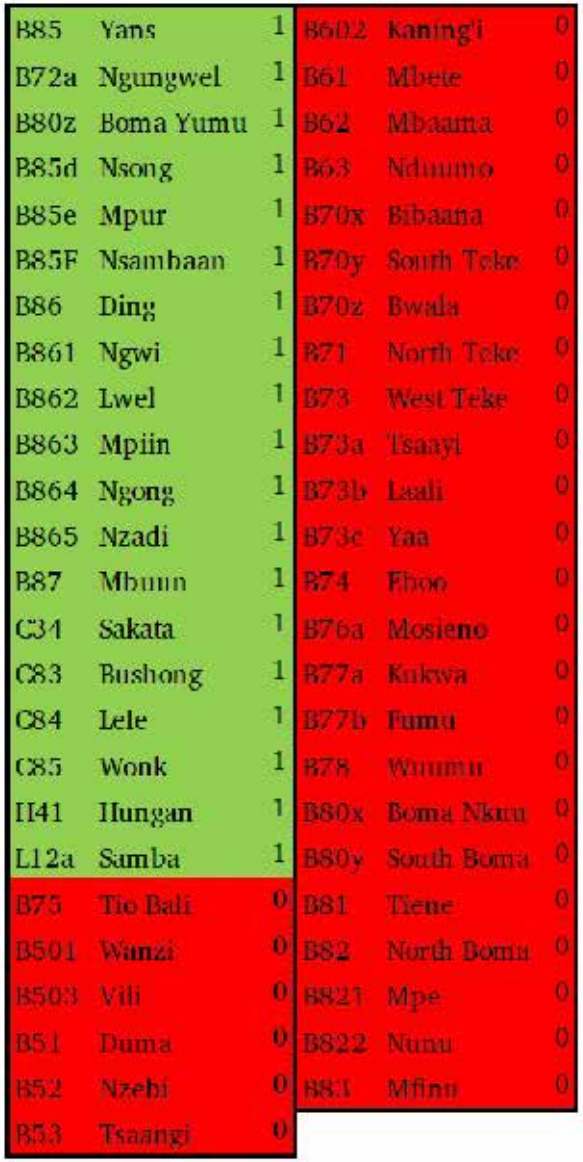
B85	Yans	1	B602	Kaning'i	0
B62	Mbaama	1	B61	Mbete	0
B71	North Teke	1	B63	Nduumo	0
B72a	Ngungwel	1	B70x	Bibaana	0
B75	Tio Bali	1	B70y	South Teke	0
B76a	Mosieno	1	B70z	Bwala	0
B80x	Boma Nkuu	1	B73	West Teke	0
B80z	Boma Yumu	1	B73a	Tsaayi	0
B81	Tiene	1	B73b	Laali	0
B82	North Boma	1	B73c	Yaa	0
B85d	Nsong	1	B74	Eboo	0
B85e	Mpur	1	B77a	Kukwa	0
B85F	Nsambaan	1	B77b	Tumu	0
B86	Ding	1	B78	Wuumu	0
B861	Ngwi	1	B80y	South Boma	0
B862	Lwel	1	B822	Nunu	0
B865	Nzadi	1	B83	Mfinu	0
B87	Mbuun	1	B863	Mpiin	0
C34	Sakata	1	B864	Ngong	0
B821	Mpe	1	C83	Bushong	0
B501	Wanzi	0	C84	Lele	0
B503	Vili	0	C85	Wonk	0
B51	Duma	0	H41	Hungan	0
B52	Nzebi	0	L12a	Samba	0
B53	Tsaangi	0			

FINAL VOWEL LOSS

- Open syllables, i.e., syllables ending in a vowel, have been considered a characteristic feature of Bantu languages even since before Johnston (1919:15), who praised Bantu “for the Italian melodiousness, simplicity, and frequency of its vowel sounds”;
- Most Bantu languages do not allow closed syllables, i.e., syllables ending in a consonant;
- As Grégoire (2003:353, 358) observes, several Bantu languages immediately south of the Congo Forest do allow closed syllables in word-final position.

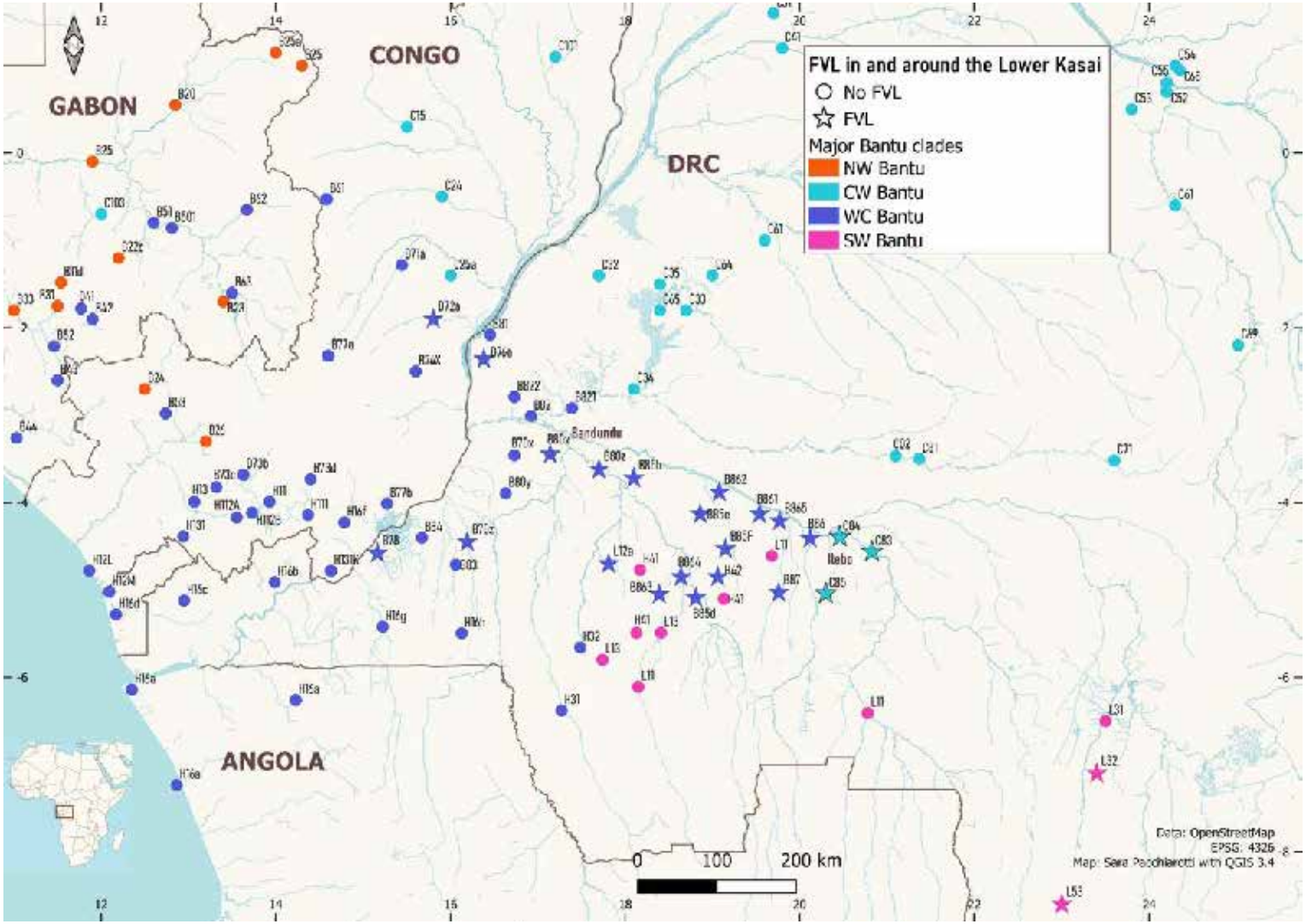
Proto-Bantu		Mbuun B87	Ding B86	Ntandu H16g	Nzebi B52
*bòmbó ‘nose’	>	*m-bôm*	*m-bwam*	*m-boombó*	—
*bóŋgó ‘knee’	>	*í-bɔŋ*	*e-bɔ́ŋ*	—	*là-bɔ́:ŋgɔ̀*
*pɔ̀cɔ̀ ‘skin’	>	*i-pús*	*i-puy*	*m-púsu*	—
*cádá ‘feather’	>	*lá-sal*	*lu-sál*	*lu-sála*	*là-tsálà*
*tímà ‘heart’	>	*ɔ́-tém*	*mu-tyɛm*	*ǹ-tíma*	*mù-témà*
*jínɔ̀ ‘tooth’	>	*i-dzin*	*i-dzín*	*dí-ínu*	*dí-ínà*
*jótɔ̀ ‘fire’	>	*my-ɔ́ɔ̀r*	*mb-ɔ́ɔ́r*	*ky-ootó*	—
*kúà ‘die’	>	*pfa*	*kpa*	*fúa*	*ú-kwà*
		(Mundeke 2011)	(Ebalantshim Masuwan 1980)	(Daeleman 1983)	(Niama-Niama 2022)

FINAL VOWEL LOSS



B85	Yans	1
B72a	Ngungwel	1
B80z	Boma Yumu	1
B85d	Nsong	1
B85e	Mpur	1
B85F	Nsambaan	1
B86	Ding	1
B861	Ngwi	1
B862	Lwel	1
B863	Mpiin	1
B864	Ngong	1
B865	Nzadi	1
B87	Mbuun	1
C34	Sakata	1
C83	Bushong	1
C84	Lele	1
C85	Wonk	1
H41	Hungan	1
L12a	Samba	1
B75	Tio Bali	0
B501	Wanzi	0
B503	Vili	0
B51	Duma	0
B52	Nzebi	0
B53	Tsaangi	0
B602	Kaning'i	0
B61	Mbete	0
B62	Mbaama	0
B63	Nduumo	0
B70x	Bibaana	0
B70y	South Teke	0
B70z	Bwala	0
B71	North Teke	0
B73	West Teke	0
B73a	Tsaayi	0
B73b	Laali	0
B73c	Yaa	0
B74	Fboo	0
B76a	Mosieno	0
B77a	Kukwa	0
B77b	Fumu	0
B78	Wuumu	0
B80x	Boma Nkuu	0
B80y	South Boma	0
B81	Tiene	0
B82	North Boma	0
B821	Mpe	0
B822	Nunu	0
B83	Mfinu	0

FINAL VOWEL LOSS



Pacchiarotti & Bostoen 2021

UMLAUT

- Fronting of a back vowel or the raising of a low vowel under the influence of a front vowel in the following syllable (Crowley & Bowern 2010:43);
- It is common in the world's languages, and especially in Germanic (Hock 1991:66; Trask 2000:352);
- In Bantu, this sound shift is particularly rare. The Lower Kasai area is the only region in the vast Bantu spread zone where umlaut is attested (Bostoen & Koni Muluwa 2014).

Proto-Bantu		Ding	Nsong	Lumbu
*cónì 'shame'	>	*n-tsœn*	*n-tsén ~ n-tswén*	*tsoni*
*dògì 'witch'	>	*mu-lœy*	*mɔ́-lɛ́ts*	*mu-loɣi*
*dóótì 'dream'	>	*n-dœy*	*n-dɛ́ts*	*bi-roontsi*
		(Ebalantshim Masuwan 1980)	(Koni Muluwa & Bostoen 2019)	(Mavoungou & Plumel 2010)

UMLAUT

B85	Yans	1	B71	North Teke	0
B70y	South Teke	1	B73	West Teke	0
B70z	Bwala	1	B73a	Tsaayi	0
B72a	Ngungwel	1	B73b	Laali	0
B75	Tio Bali	1	B73c	Yaa	0
B78	Wuumu	1	B74	Eboo	0
B80x	Boma Nkuu	1	B76a	Mosieno	0
B85d	Nsong	1	B77a	Kukwa	0
B85e	Mpur	1	B77b	Fumu	0
B85F	Nsambaan	1	B80y	South Boma	0
B86	Ding	1	B80z	Boma Yumu	0
B862	Lwel	1	B81	Tiene	0
B863	Mpiin	1	B82	North Boma	0
B87	Mbuun	1	B821	Mpe	0
C83	Bushong	1	B822	Nunu	0
B501	Wanzi	0	B83	Mfinu	0
B503	Vili	0	B861	Ngwi	0
B51	Duma	0	B864	Ngong	0
B52	Nzebi	0	B865	Nzadi	0
B53	Tsaangi	0	C34	Sakata	0
B602	Kaningi	0	C84	Lele	0
B61	Mbete	0	C85	Wunk	0
B62	Mbaama	0	H41	Hungan	0
B63	Nduumo	0	L12a	Samba	0
B70x	Bibaana	0			

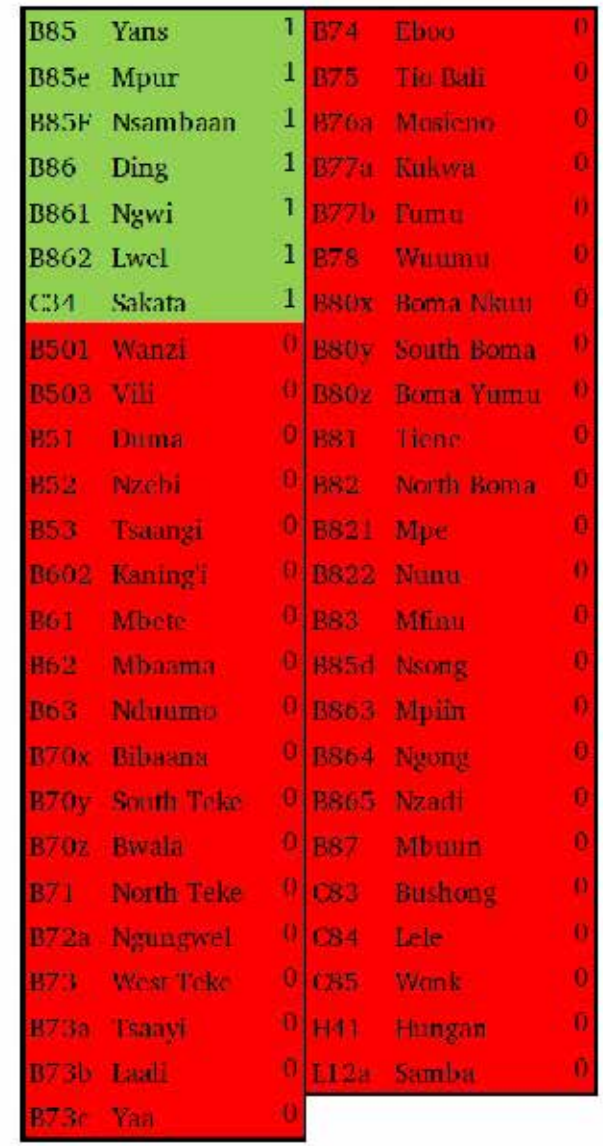
INTERIOR VOWELS

- Rounded front vowels as the outcome of umlaut are part of a larger subcategory of vowels known as ‘interior’ vowels, which are non-peripheral vowels located in the interior portion of the vowel space: y ʏ ø œ ɨ ɪ ʉ ɘ ɵ ə ɜ ɞ ɐ ɯ ɤ ʌ (Rolle *et al.* 2017:100);

- Just like labial-velar stops, interior vowels are considered a phonological feature typical of the so-called ‘Macro-Sudan Belt’ (Clements & Rialland 2008; Güldemann 2008), and are thought to be absent south of this area (Rolle et al. 2017, 2020)

	Proto-Bantu		Ngwi
a.	*jɪ̀nà ‘name’	>	*dz-ə̀n*
	*kɪ̀mà ‘monkey’	>	*Ø-ŋkə̀m*
	*cɪ̀kà ‘girl’	>	*ò-sə̀ʁ*
	*dɪ̀bò ‘bell’	>	*Ø-ndə̆b*
	*kɪ́gè ‘eyelash’	>	*è-kə̂ʁ*
b.	*bɪ̀dú ‘cola nut’	>	*ì-bɤ̆r*
	*tígʊ́é ‘orphan’	>	*è-tsɤ́ʁ*
	*pígʊ̀ ‘kidney’	>	*ì-pɤ̂ʁ* ‘liver’
	*cíkʊ̀ ‘hiccup’	>	*à-sísɤ̂ʁ*

INTERIOR VOWELS



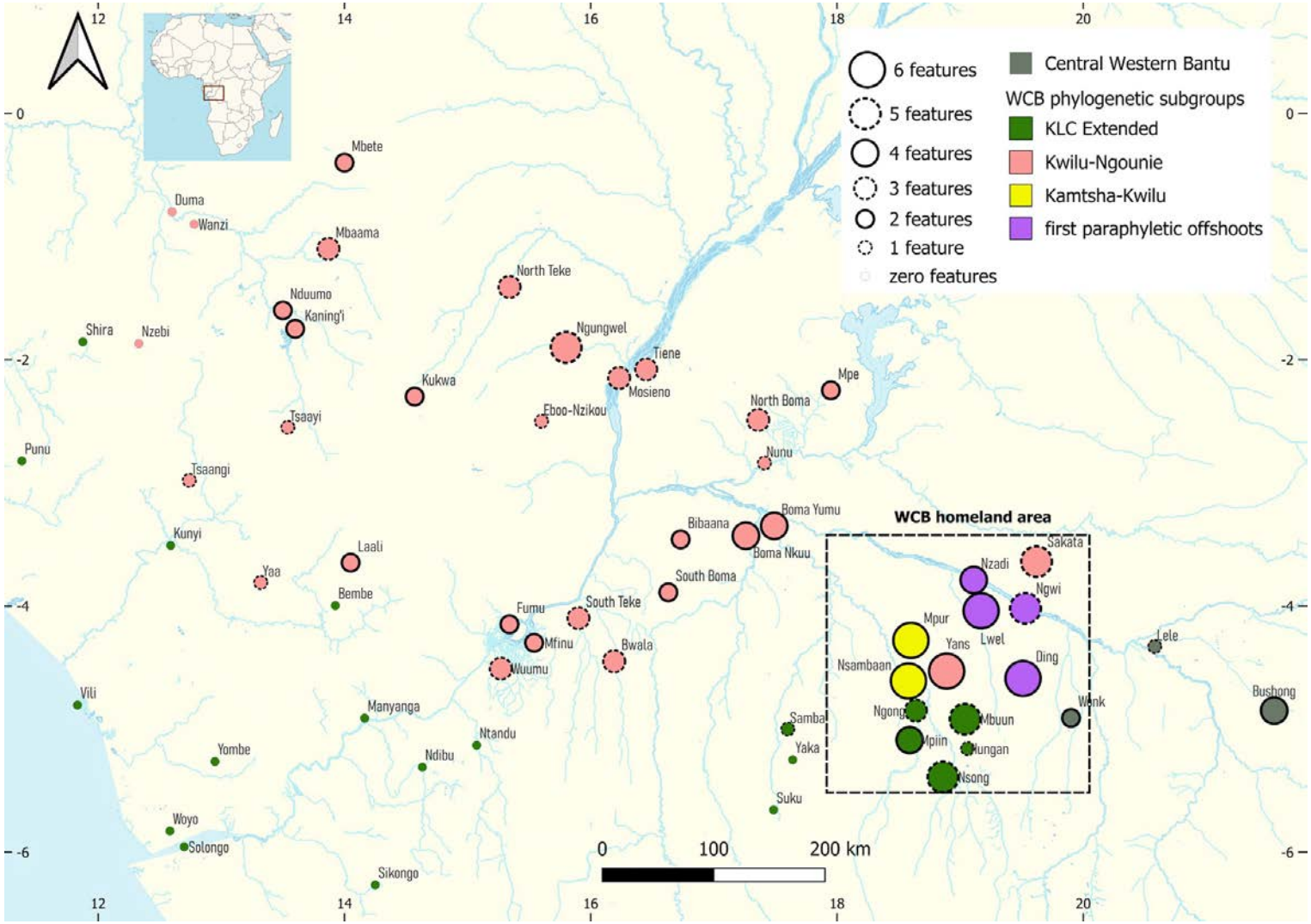
B85	Yans	1
B85e	Mpur	1
B85F	Nsambaan	1
B86	Ding	1
B861	Ngwi	1
B862	Lwel	1
C34	Sakata	1
B501	Wanzi	0
B503	Vili	0
B51	Duma	0
B52	Nzebi	0
B53	Tsaangi	0
B602	Kaning'i	0
B61	Mbete	0
B62	Mbaama	0
B63	Nduumo	0
B70x	Bibaana	0
B70y	South Teke	0
B70z	Bwala	0
B71	North Teke	0
B72a	Ngungwel	0
B73	Wesr Teke	0
B73a	Tsaayi	0
B73b	Laali	0
B73c	Yaa	0
B74	Eboo	0
B75	Tio Bali	0
B76a	Mosieno	0
B77a	Kukwa	0
B77b	Fumu	0
B78	Wuumu	0
B80x	Boma Nkuu	0
B80y	South Boma	0
B80z	Boma Yumu	0
B81	Tiene	0
B82	North Boma	0
B821	Mpe	0
B822	Nunu	0
B83	Mfinu	0
B85d	Nsong	0
B863	Mpiin	0
B864	Ngong	0
B865	Nzadi	0
B87	Mbuun	0
C83	Bushong	0
C84	Lele	0
C85	Wonk	0
H41	Hungan	0
L12a	Samba	0

CONVERGENCE FEATURES

		NCR	DIPH	LVS	FVL	UML	INT	TOT
B85	Yans	1	1	1	1	1	1	6
B85e	Mpur	1	1	1	1	1	1	6
B85F	Nsambaan	1	1	1	1	1	1	6
B86	Ding	1	1	1	1	1	1	6
B862	Lwel	1	1	1	1	1	1	6
B72a	Ngungwel	1	1	1	1	1	0	5
B85d	Nsong	1	1	1	1	1	0	5
B861	Ngwi	1	1	1	1	0	1	5
B87	Mbuun	1	1	1	1	1	0	5
C31	Sakata	1	1	1	1	0	1	5
B75	Tio Bali	1	1	1	0	1	0	4
B80x	Boma Nkuu	1	1	1	0	1	0	4
B80z	Boma Yumu	1	1	1	1	0	0	4
B863	Mpiin	1	1	0	1	1	0	4
B865	Nzadi	1	1	1	1	0	0	4
C83	Bushong	1	1	0	1	1	0	4
B62	Mbaama	1	1	1	0	0	0	3
B70y	South Teke	1	1	0	0	1	0	3
B70z	Bwala	1	1	0	0	1	0	3
B71	North Teke	1	1	1	0	0	0	3
B76a	Mosieno	1	1	1	0	0	0	3
B78	Wuumu	1	1	0	0	1	0	3
B81	Tiene	1	1	1	0	0	0	3
B82	North Boma	1	1	1	0	0	0	3
B864	Ngong	1	1	0	1	0	0	3

		NCR	DIPH	LVS	FVL	UML	INT	TOT
B602	Kaning'i	1	1	0	0	0	0	2
B61	Mbete	1	1	0	0	0	0	2
B63	Nduumo	1	1	0	0	0	0	2
B70x	Bibaana	1	1	0	0	0	0	2
B73	West Teke	1	1	0	0	0	0	2
B73b	Laali	1	1	0	0	0	0	2
B77a	Kukwa	1	1	0	0	0	0	2
B77b	Fumu	1	1	0	0	0	0	2
B80y	South Boma	1	1	0	0	0	0	2
B821	Mpe	1	0	1	0	0	0	2
B83	Mfinu	1	1	0	0	0	0	2
C85	Wonk	0	0	0	1	0	0	2
B53	Tsaangi	0	1	0	0	0	0	1
B73a	Tsaayi	0	1	0	0	0	0	1
B73c	Yaa	0	1	0	0	0	0	1
B74	Eboo	1	0	0	0	0	0	1
B822	Nunu	1	0	0	0	0	0	1
C84	Lele	0	0	0	1	0	0	1
H41	Hungan	0	0	0	1	0	0	1
L12a	Samba	0	0	0	1	0	0	1
B501	Wanzi	0	0	0	0	0	0	0
B503	Vili	0	0	0	0	0	0	0
B51	Duma	0	0	0	0	0	0	0
B52	Nzebi	0	0	0	0	0	0	0

CONVERGENCE FEATURES



CONCLUSIONS

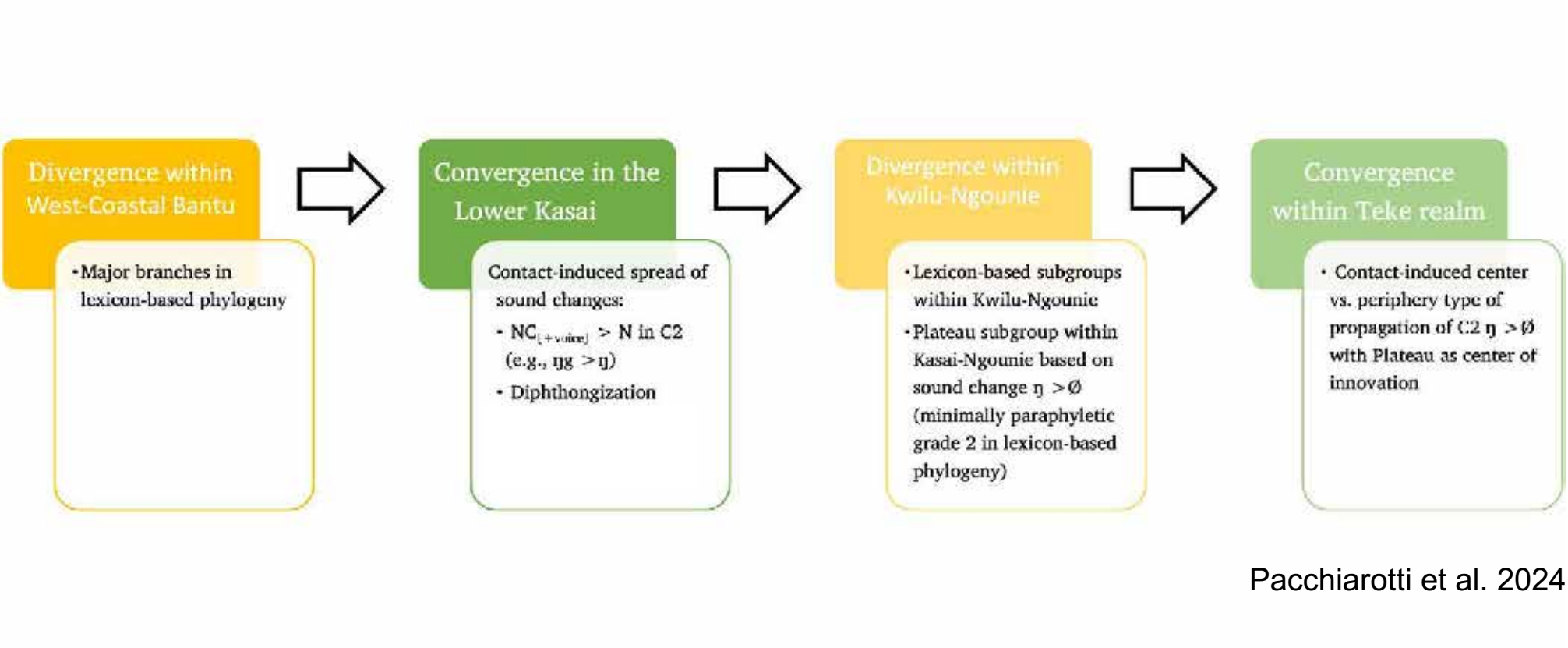
- **Contact-induced phonological innovations** do NOT go back to one single contact event;

- **Successive and separate phases of language contact** in the Lower Kasai region with the **earliest contact-induced changes being spread outside the homeland region due to secondary pulses of language expansion**, read population movement;

- Early Iron Age (±400 BCE-750CE): velar merger, voiced NC cluster reduction and diphthongization;

- Late Iron Age (± 1500CE-1900CE): labial-velar stops, final vowel loss, umlaut, interior vowels

SUCCESSIVE PHASES OF DIVERGENCE AND CONVERGENCE



Pacchiarotti et al. 2024

CONCLUSIONS

- If **language contact** happened repeatedly but at different points in time, it **did not necessarily involve the same people**;

- Language interactions were certainly **not superficial** and must have involved **multilingualism**, at least bilingualism;

- Contact-induced phonological innovations seem to be to outcome of **substrate interference through languages shift**;

- Given that several of the substrate features are rather uncommon in Bantu, it is not unlikely that the **different shifters through time had mother tongues that were not Bantu;**

CONCLUSIONS

- Several of the phonological substrate patterns, especially **voiced nasal-consonant cluster reduction**, **diphthongization**, and **final vowel loss** also co-occur in **Ewondo-Fang** (A70) and **Makaa-Njem** (A80) Bantu language in southern Cameroon and northern Gabon (Medjo Mvé 1997; Cheucle 2014). Voiced nasal-consonant cluster reduction also occurs in some Bantu languages of the Inner Congo Basin (Grégoire 2003:356, supplemented with several varieties on which Guy Kouarata did fieldwork since 2018) → **parallel substrate interference from indigenous pre-Bantu languages?**

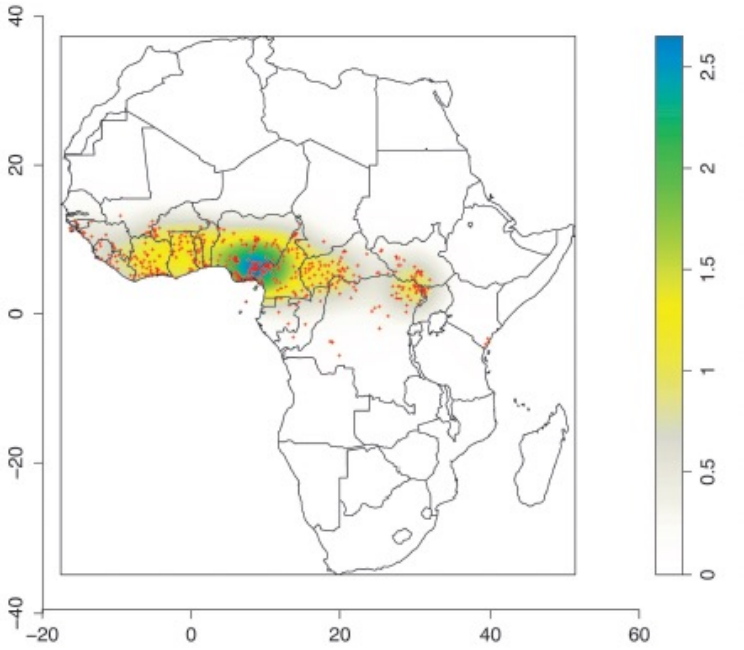
- **Labial-velar stops** and **interior vowels** considered to be typical of the **Macro-Sudan belt** → could they point towards Ubangi presence in the Lower Kasai?

CONCLUSIONS

- Vansina (1973-4: 232)

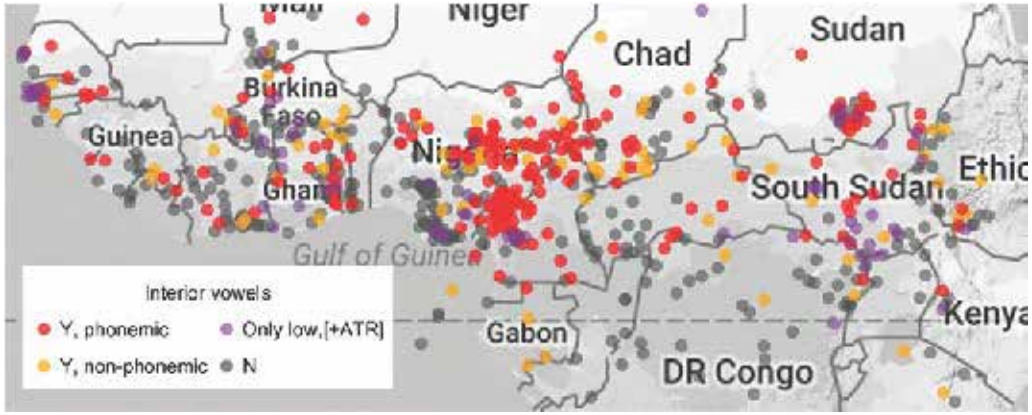
"*The major points of view of the traditional scholars were simple. With the exception of possible pygmies no other people had occupied the area before the arrival of the present inhabitants as the traditions claim. All the peoples of the Lower Kwilu originated in Gabon or Congo Brazzaville on the Bateke plateaux and before that at least one group, the Yans, came from "Ubangi". The first point is clearly wrong […]. The second point is also wrong […]*"

LABIAL-VELAR STOPS AND INTERIOR VOWELS



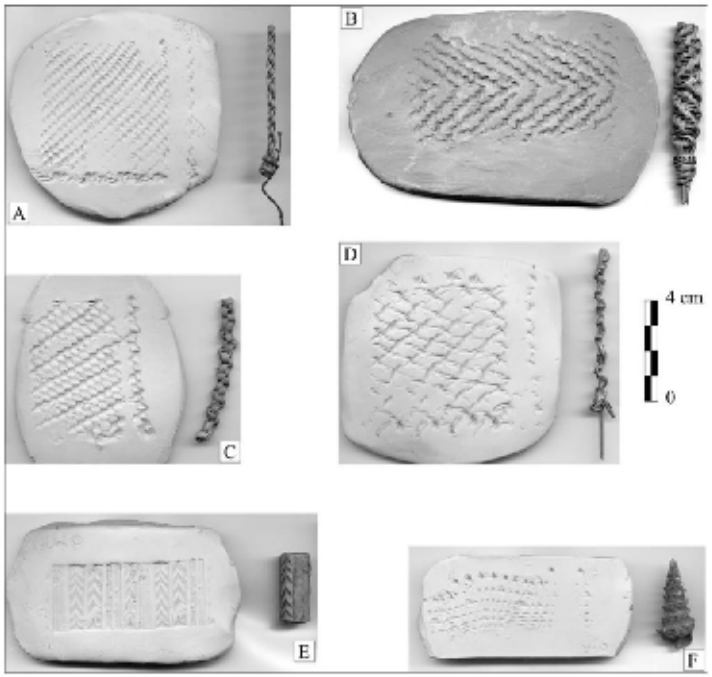
a. Languages with LV stops.

Idiatov & Van de Velde 2021

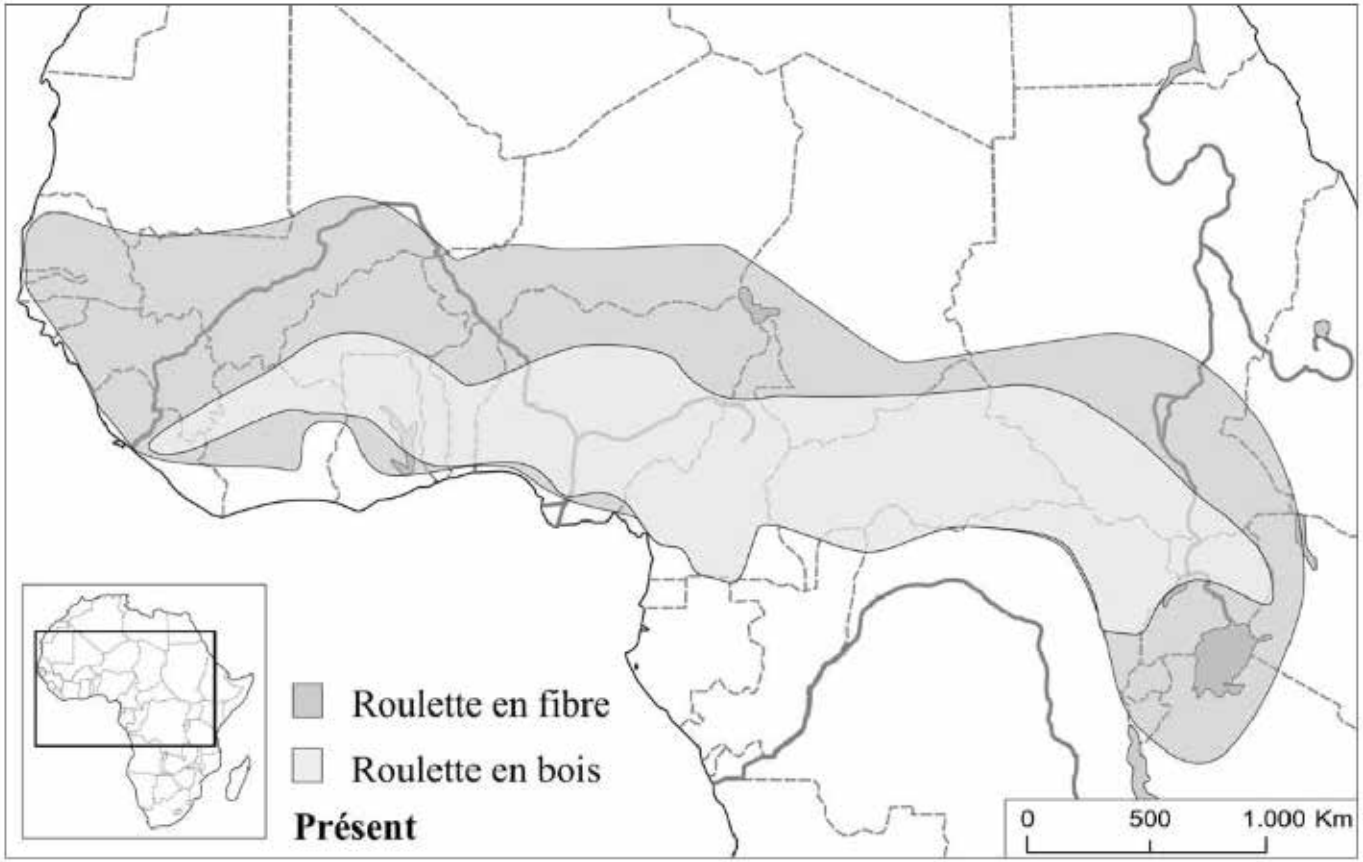


Rolle et al. 2020

ROULETTES IN AFRICA



Livingstone Smith 2007



LIA ROULETTE DECORATION ALONG KASAI RIVER

Eolo Kapela

Eolo

VUM

Hapulh

Ikulu

SELECTED REFERENCES

- Bostoen, K. and J. Koni Muluwa. 2014. Umlaut in the Bantu B70/80 languages of the Kwilu (DRC). *Transactions of the Philological Society* 112: 209-230.
- Bostoen, K., S. Pacchiarotti and G. Kouarata. 2025. Language divergence and convergence and deep-time population history in the Kwilu-Kasai region. In P.R. Coutros, J.H. Doman, I. Matonda Sakala & K. Bostoen (eds.), *An Archaeology of the Bantu Expansion: Early Settlers South of the Congo Rainforest*. London; New York: Routledge.
- Bostoen, K., J.H. Doman, S. Pacchiarotti and S.V. Acker. 2025. The Lifeworld of the Kwilu-Kasai Region's First Bantu speakers: Insights from Lexical Reconstruction. In P.R. Coutros, J.H. Doman, I. Matonda Sakala & K. Bostoen (eds.), *An Archaeology of the Bantu Expansion: Early Settlers South of the Congo Rainforest*. London; New York: Routledge.
- Bostoen, K., P.R. Coutros, J.H. Doman and I. Matonda Sakala. 2025. Rethinking the Bantu Expansion from South of the Congo Forest. In P.R. Coutros, J.H. Doman, I. Matonda Sakala & K. Bostoen (eds.), *An Archaeology of the Bantu Expansion: Early Settlers South of the Congo Rainforest*. London; New York: Routledge.
- Coutros, P.R. and I. Matonda Sakala. 2025. A New Archaeology of the Kwilu-Kasai Region: Methods, Sites, and Dates. In P.R. Coutros, J.H. Doman, I. Matonda Sakala & K. Bostoen (eds.), *An Archaeology of the Bantu Expansion: Early Settlers South of the Congo Rainforest*. London; New York: Routledge.
- Coutros, P.R., J.H. Doman, I. Matonda Sakala and K. Bostoen. 2025. A longue dureé Socio-Environmental History of the Kwilu-Kasai Region. In P.R. Coutros, J.H. Doman, I. Matonda Sakala & K. Bostoen (eds.), *An Archaeology of the Bantu Expansion: Early Settlers South of the Congo Rainforest*. London; New York: Routledge.
- Grollemund, R., S. Branford, K. Bostoen, A. Meade, C. Venditti and M. Pagel. 2015. Bantu Expansion Shows That Habitat Alters the Route and Pace of Human Dispersals. *Proceedings of the National Academy of Sciences of the United States of America* 112: 13296-13301.
- Idiatov, D. and M. Van de Velde. 2021. The lexical distribution of labial-velar stops is a window into the linguistic prehistory of Northern Sub-Saharan Africa. *Language* 97: 72-107.

SELECTED REFERENCES

- Livingstone Smith, A. 2007. Histoire du décor à la roulette en Afrique subsaharienne. *Journal of African Archaeology* 5: 189-216.
- Koile, E., S.J. Greenhill, D.E. Blasi, R. Bouckaert and R.D. Gray. 2022. Phylogeographic analysis of the Bantu language expansion supports a rainforest route. *Proceedings of the National Academy of Sciences* 119: e2112853119.
- Koni Muluwa, J. and K. Bostoen. 2012. La diphtongaison dans les langues bantu B70-80 (Bandundu, RDC): typologie et classification historique. *Africana Linguistica* 18: 355-386.
- Pacchiarotti, S., N. Chousou-Polydouri and K. Bostoen. 2019. Untangling the West-Coastal Bantu Mess: Identification, Geography and Phylogeny of the Bantu B50-80 Languages. *Africana Linguistica* 25: 155-229.
- Pacchiarotti, S. and K. Bostoen. 2020. The Proto-West-Coastal Bantu Velar Merger. *Africana Linguistica* 26: 139-195.
- Pacchiarotti, S. and K. Bostoen. 2021. Final Vowel Loss in Lower Kasai Bantu (DRC) as a Contact-Induced Change. *Journal of Language Contact* 14: 437-474.
- Pacchiarotti, S., L. Maselli and K. Bostoen. 2021. The emergence of interior vowels and heterosyllabic vowel sequences in Ngwi (Bantu B861, DRC). *Papers in Historical Phonology* 6: 107-146.
- Pacchiarotti, S. and K. Bostoen. 2022. Erratic Velars in West-Coastal Bantu: Explaining Irregular Sound Change in Central Africa. *Journal of Historical Linguistics* 12: 381-445.
- Pacchiarotti, S., G. Kouarata and K. Bostoen. 2024. Sound change versus lexical change for subgrouping: Word-final lenition of Proto-Bantu *ŋg in West-Coastal Bantu. *Language Dynamics and Change* 14: 1-73.
- Rolle, N., F. Lionnet and M. Faytak. 2020. Areal patterns in the vowel systems of the Macro-Sudan Belt. *Linguistic Typology* 24: 113-179.
- Seidensticker, D., W. Hubau, D. Verschuren, C. Fortes-Lima, P. de Maret, C.M. Schlebusch and K. Bostoen. 2021. Population collapse in Congo rainforest from 400 CE urges reassessment of the Bantu Expansion. *Science Advances* 7: eabd835
- Vansina, J. 1973/1974. Probing the past of the Lower Kwilu peoples (Zaire). *Paideuma: Mitteilungen zur Kulturkunde* 19/20: 332-364.

FACULTY OF ARTS AND PHILOSOPHY

Thank you!

Koen Bostoen
UGent Centre for Bantu Studies
Department of Languages and Cultures
Faculty of Philosophy and Arts
Ghent University
koen.bostoen@ugent.be

GHENT UNIVERSITY