



Logo Credit - Thierno Ibrahima Diop

The Small Bang:
Interdisciplinary Methods
for Isolate Language Reconstruction

Abbie Hantgan-Sonko

June 6, 2024

Langage, Langues et

Llaccan

Cultures d'Afrique

Cultures d'Afrique



European Research Council

Established by the European Commission

Journées d'étude BANG – UCAD

Outline

1. Background on Bangime
2. Presentation of Project and Team Members
3. Methodology
4. Preliminary Results
5. Historical Context
6. Lexical Loan Case study



Origins of BANG

What's in a name?

- Togo Kan (Dogon)

[báŋ] 'hidden, furtive, secret'

- Tommo So (Dogon)

[bààŋí-jé] 'go into hiding, hide oneself'

[bàŋú-ndá] 'hide, conceal (something)'

- Bangime (Isolate)

[bángí-mè] ~ [bángí-jè] 'endonym for language and ethnicity (sg.)'

[bàngà=ndé] 'endonym for ethnicity (pl.)'

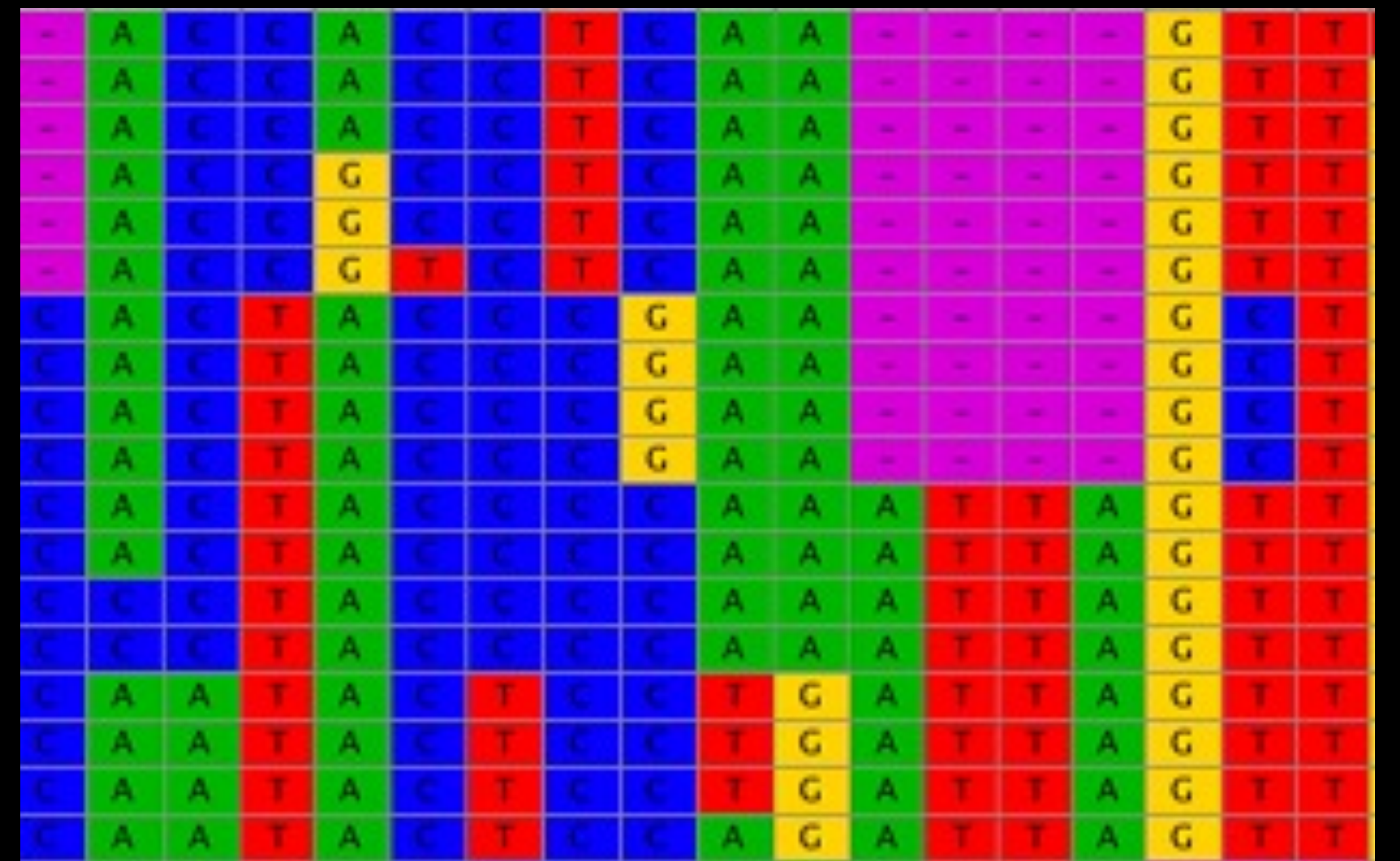


Team Bang

- Lexical (borrowings) – Abbie
- Lexical (cognates) – Fabian
- Computational – Promise
- Grammatical (negation) – Aurore
- Grammatical (internal reconstruction) – Vadim
- Corpus and tonal reconstruction – Lora
- Coordination – Magali ; Aurore
- Speakers – Adama – Bangime ; Dogon ; Gur ; Mande



Methods

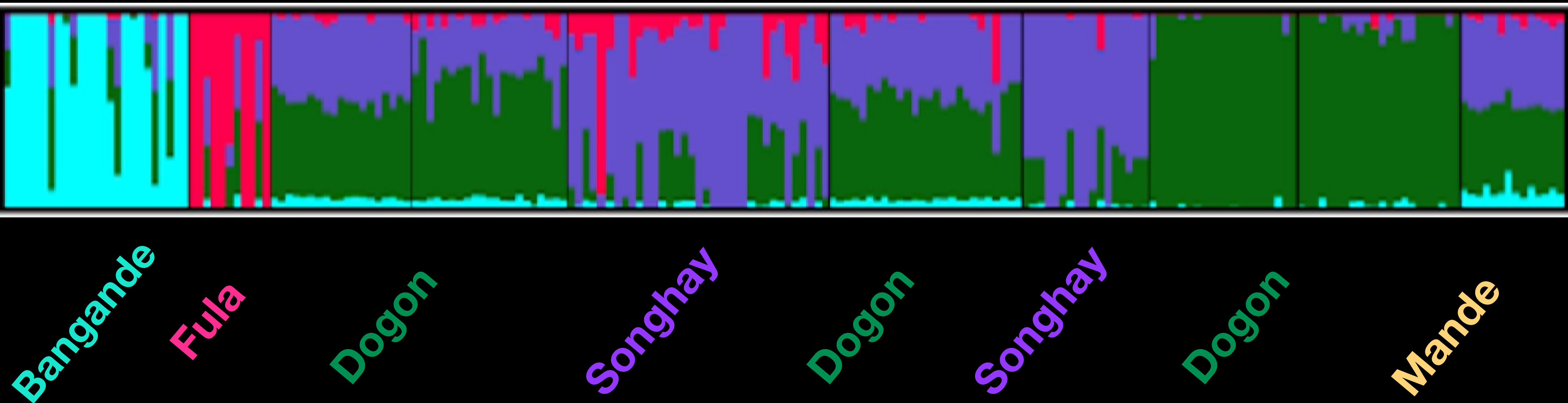


DNA sequenced data

s	u	-	a
s	u	-	a
s	u	b	a
s	u	b	a
s	u	b	a
s	u	b	a
tf	u	-	a
s	w	-	a
s	u	b	a
s	u	b	a
s	u	-	a:
s	⁵ u	w	¹ a

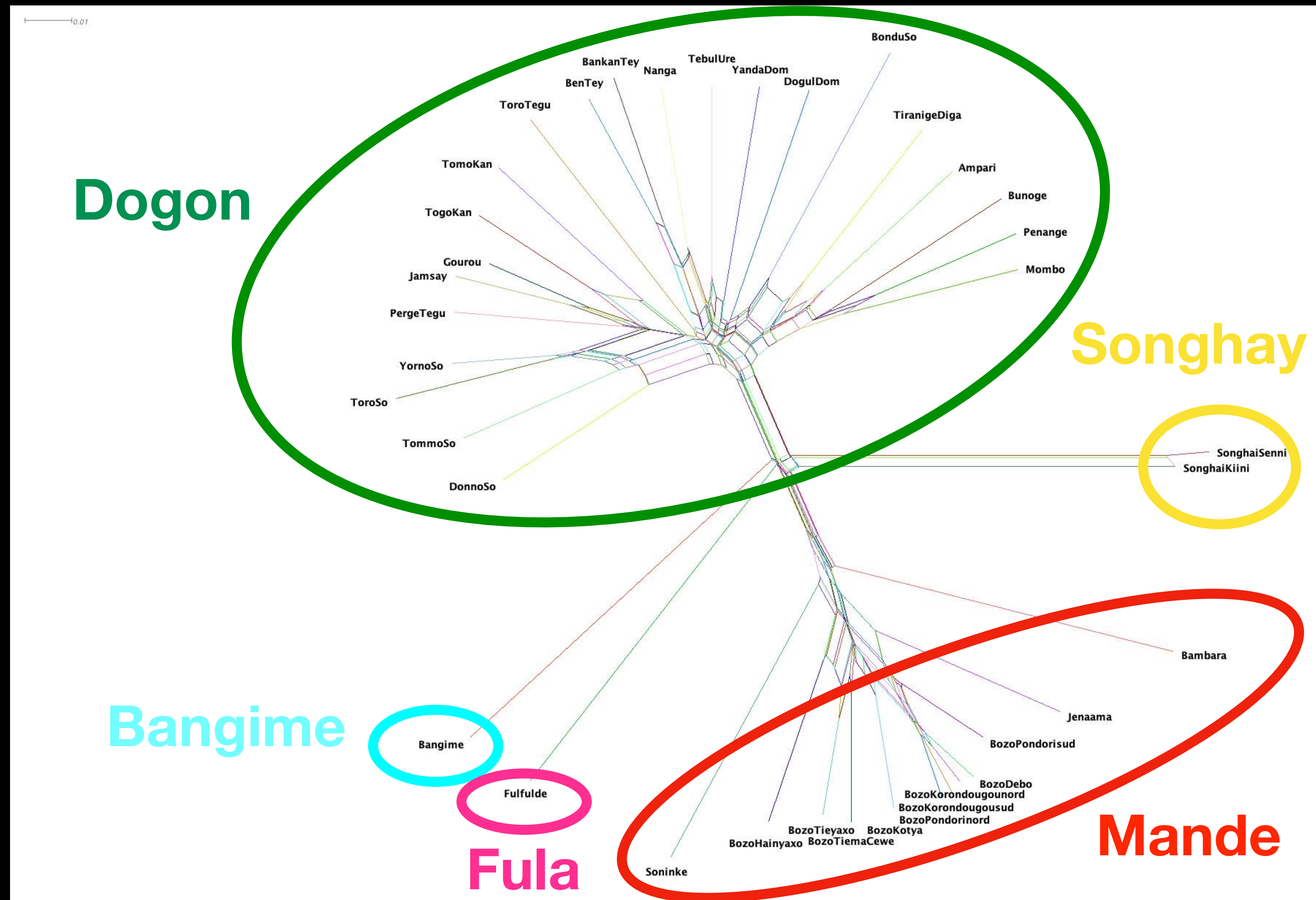
Words for 'wood' in Soninke-Bozo languages

Genetic Admixture



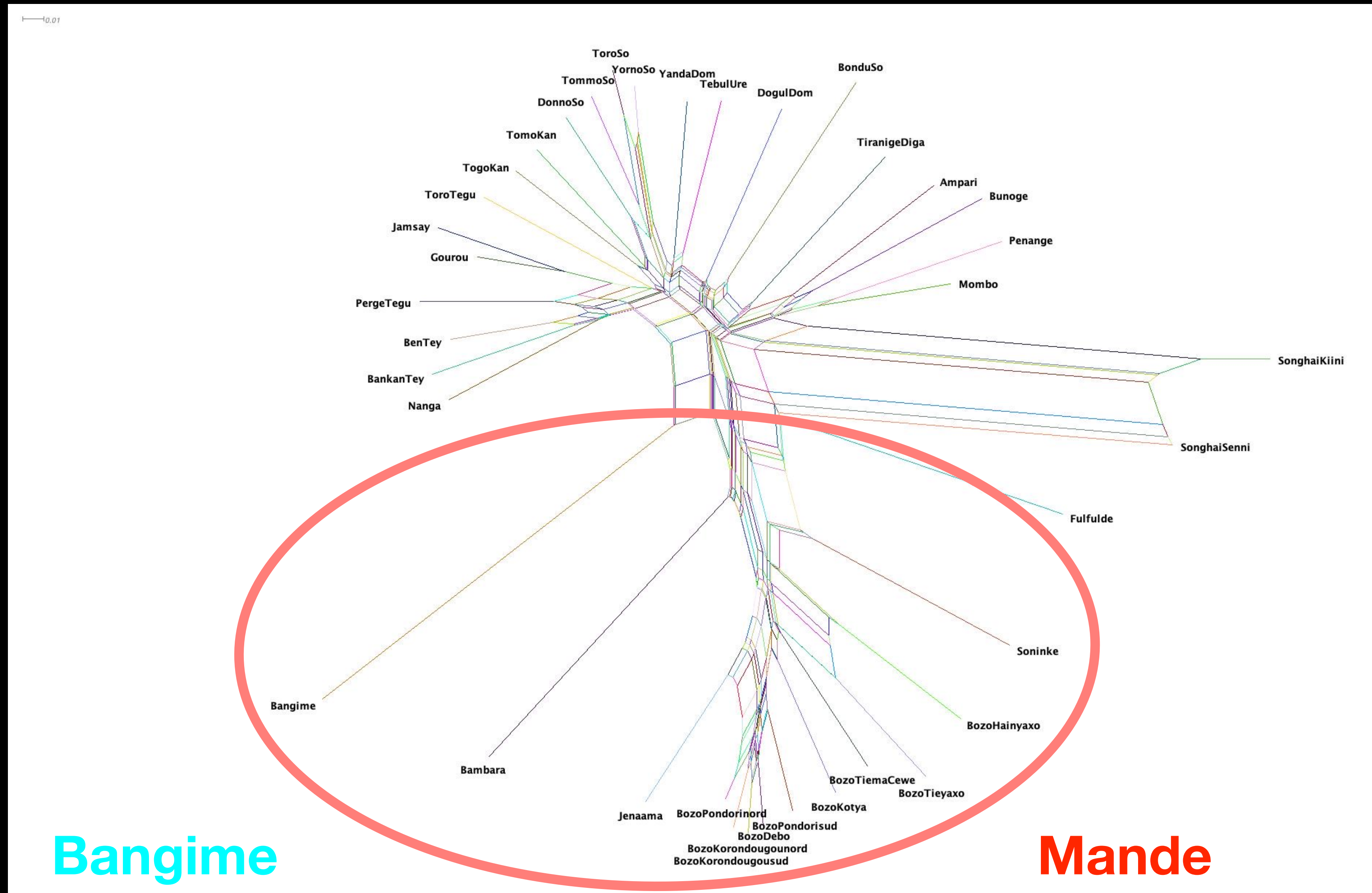
(Babiker et al. 2020)

Linguistic Affiliations by Cognates



(Hantgan and List 2018)

Linguistic Affiliations by Loan Words



Language Isolates



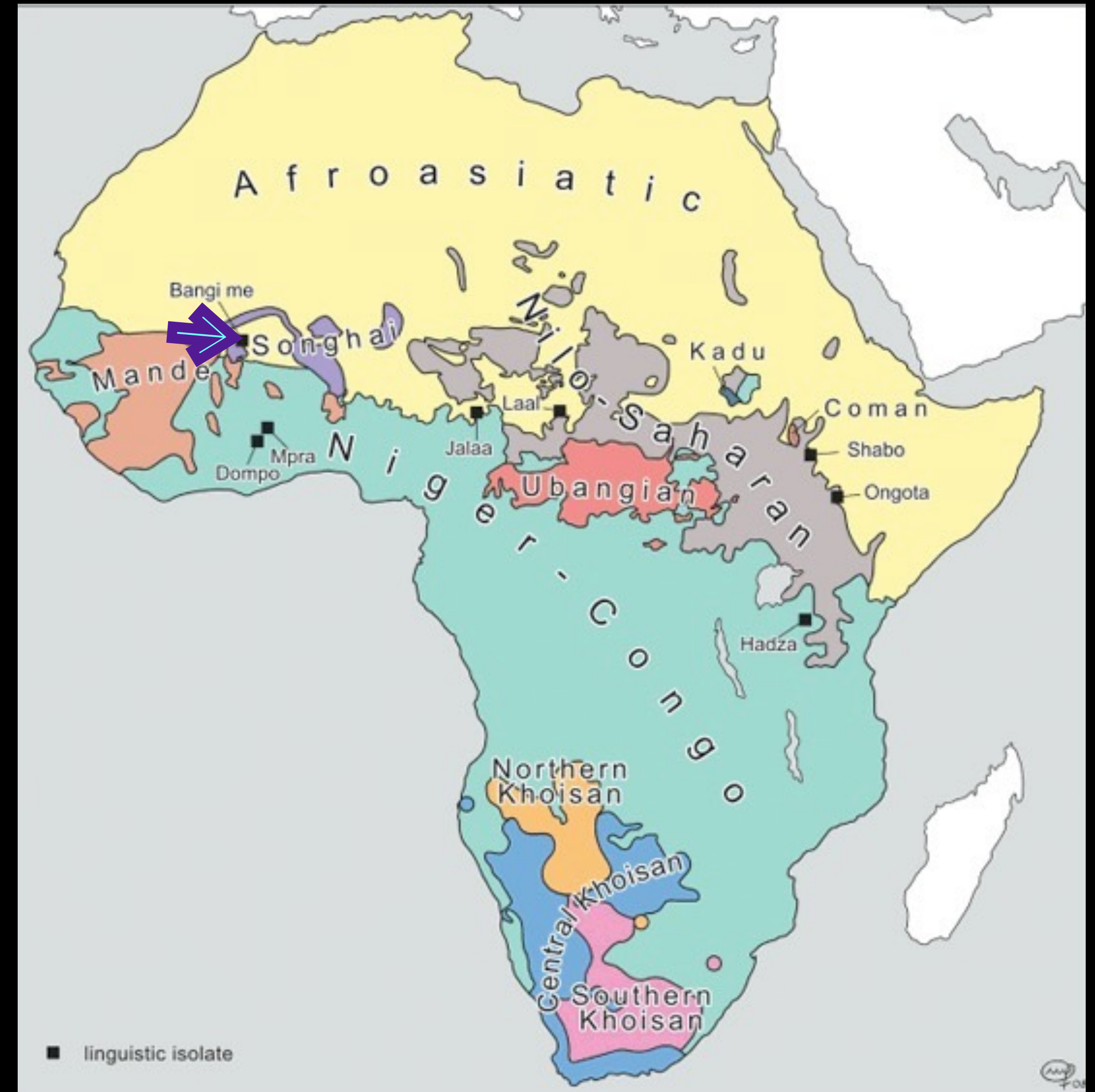
“In the most common view, an isolate is a language with no relatives, that is, that has no demonstrable genetic relationship with any other language”.

(Campbell 2017, p. 16)



The African Paradox

- Highest levels of human genetic diversity (Tishkoff 2009)
- Linguistic lack of diversity (however, see Güldemann 2018)
- Few isolates (Campbell 2017)
- Bangime 1/4-8 “uncontroversial” African language isolates (cf. Blench 2017)



(Dimmendaal 2008: 845)

Niger-Congo

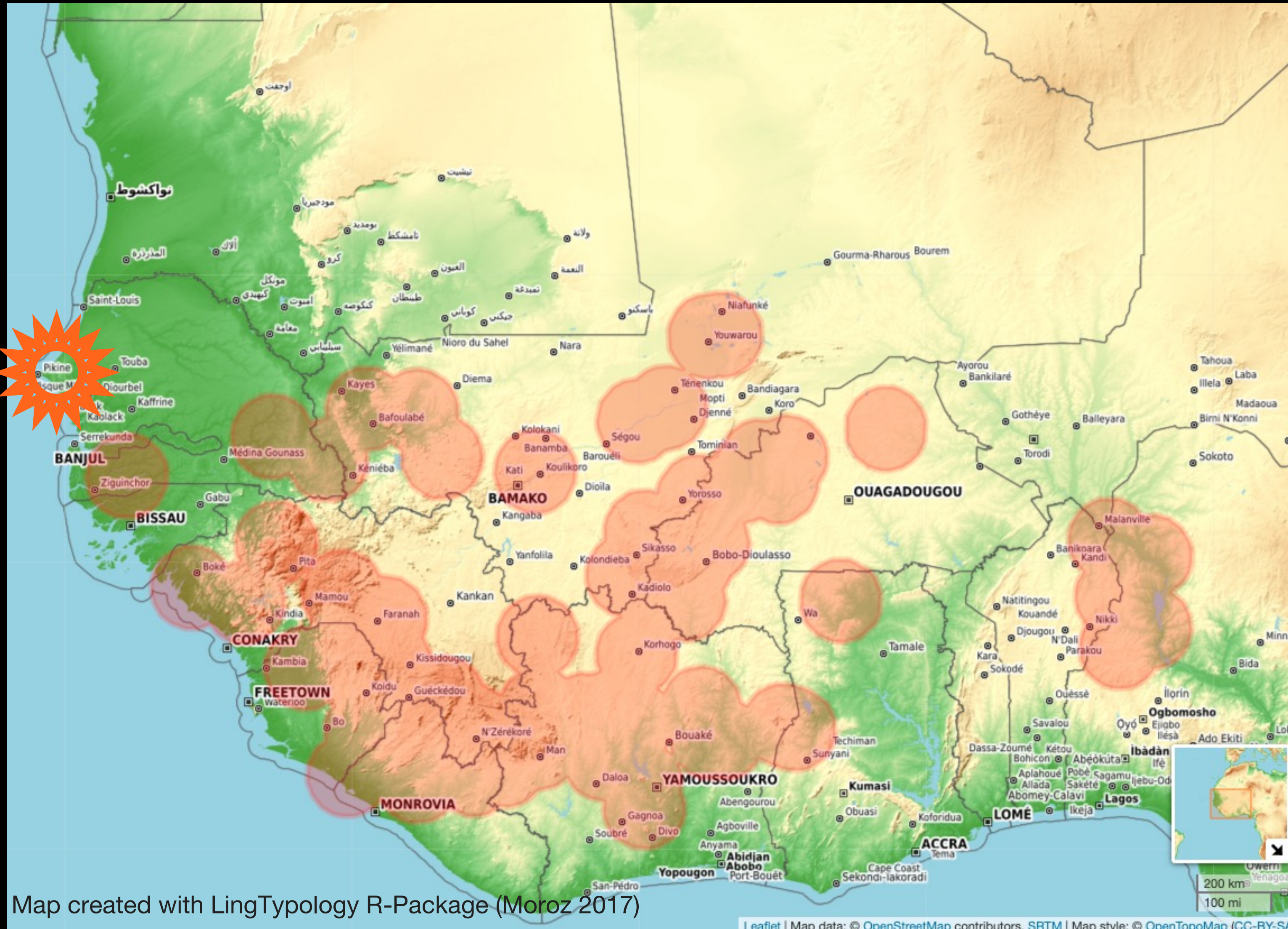
- Bantu Expansion
- Mande Expansion (Brooks 1993)



The screenshot shows the Ethnologue website interface. At the top, there is a blue header with the text "Ethnologue Languages of the World" in yellow and white. Below the header, there is a white background with a grey button labeled "Ethnologue". The main heading is "Niger-Congo" in large, bold, grey font. Below this, there are two blue buttons: "Collapse All" and "Expand All". Underneath the buttons, the text "Niger-Congo (1553)" is displayed. Below this, there are three sub-branches, each preceded by a plus sign (+) and underlined: "Atlantic-Congo (1454)", "Bantoid (702)", and "Mande (75)".

(Eberhard, Simons, and Fennig (eds.) 2022)

Mande languages in West Africa

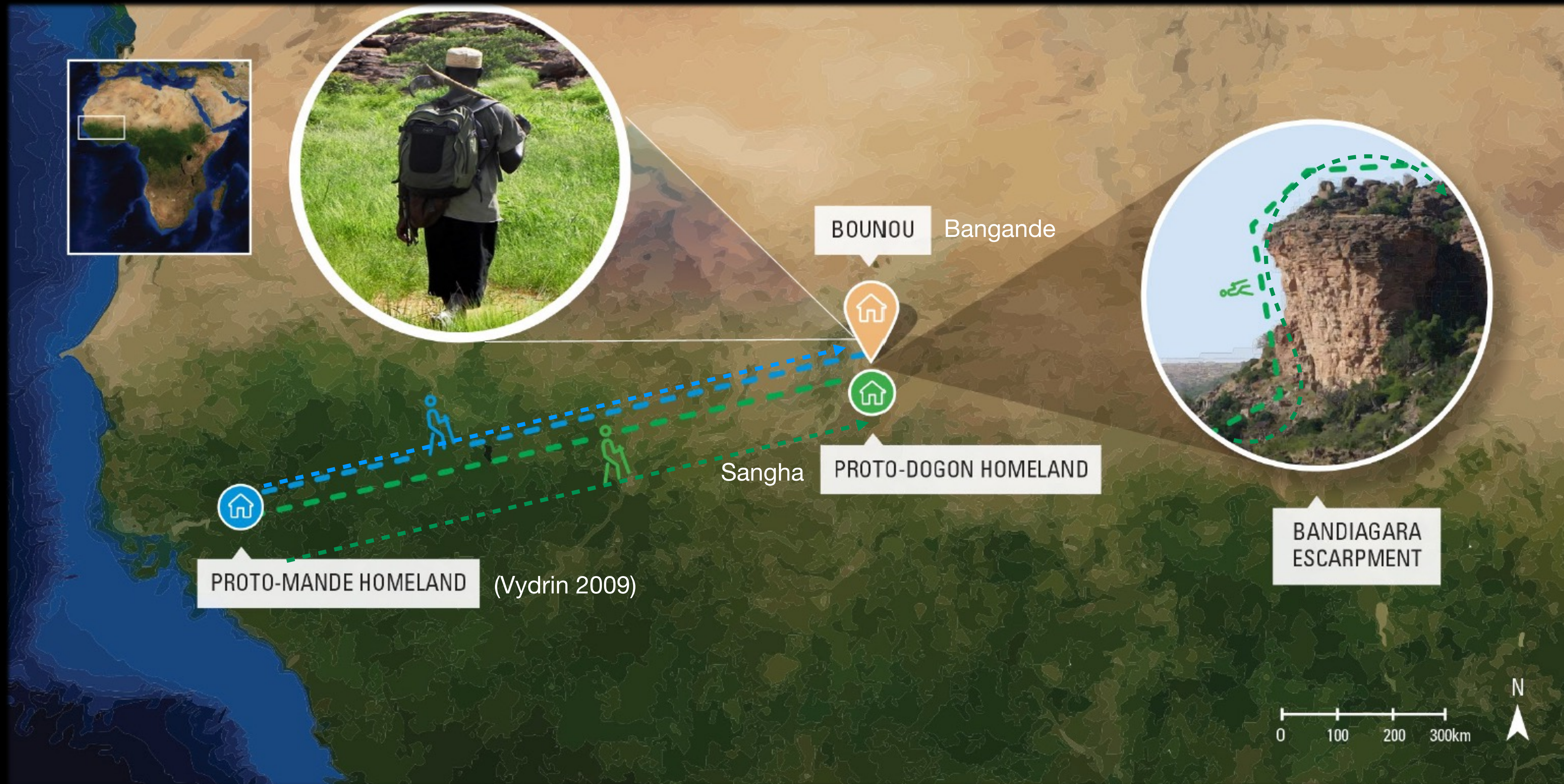


- Mande-speaking traders
- Mande-speaking warriors

Map created with LingTypology R-Package (Moroz 2017)

Coordinates and classification from Glottolog and Dogon and Bangime Linguistics Project

Dogon Reclusion





**Nokara, Mali
July 2011.**

Proto-Niger-Congo

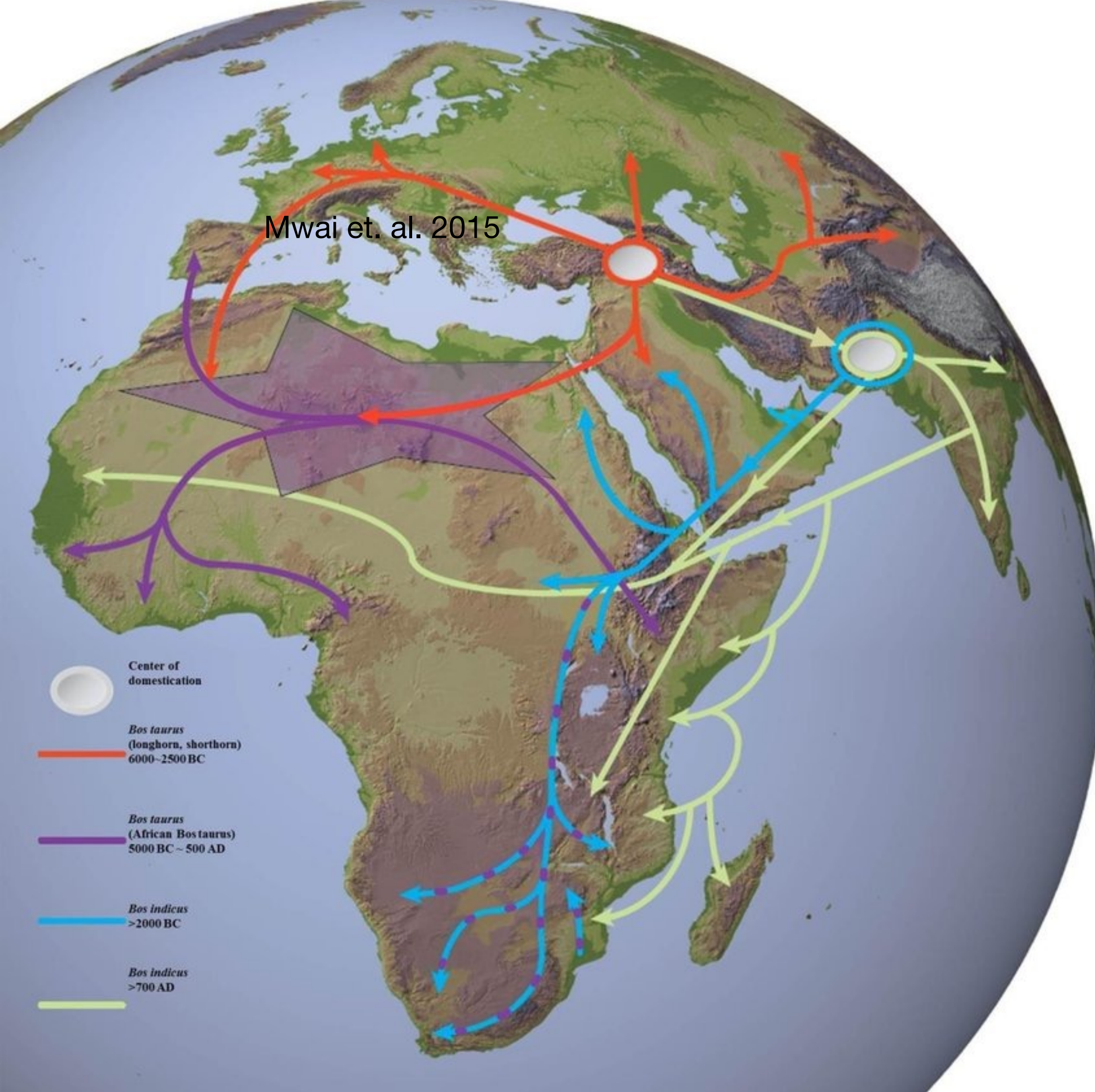
Evidence in favor of an ancient root

Form	Gloss	Language	Family	Form	Gloss	Language	Family
*nak	cow	Proto-NC?	NC	nàà	cow, cattle	Bangime	Isolate
nag-ge	cow	Fulfulde	Atlantic	nàà	cow, cattle	Jenaama	Mande
nàá-g	vache	Dogul Dom	Dogon	nàà	cow	Penange	Dogon
nag-fɛ	cow	Koromfe	Gur	nâ ~ nàà	vache	Soninke	Mande
nage	cow	Susu	Mande	nà	vache	Buamu	Gur

Proto-Mande

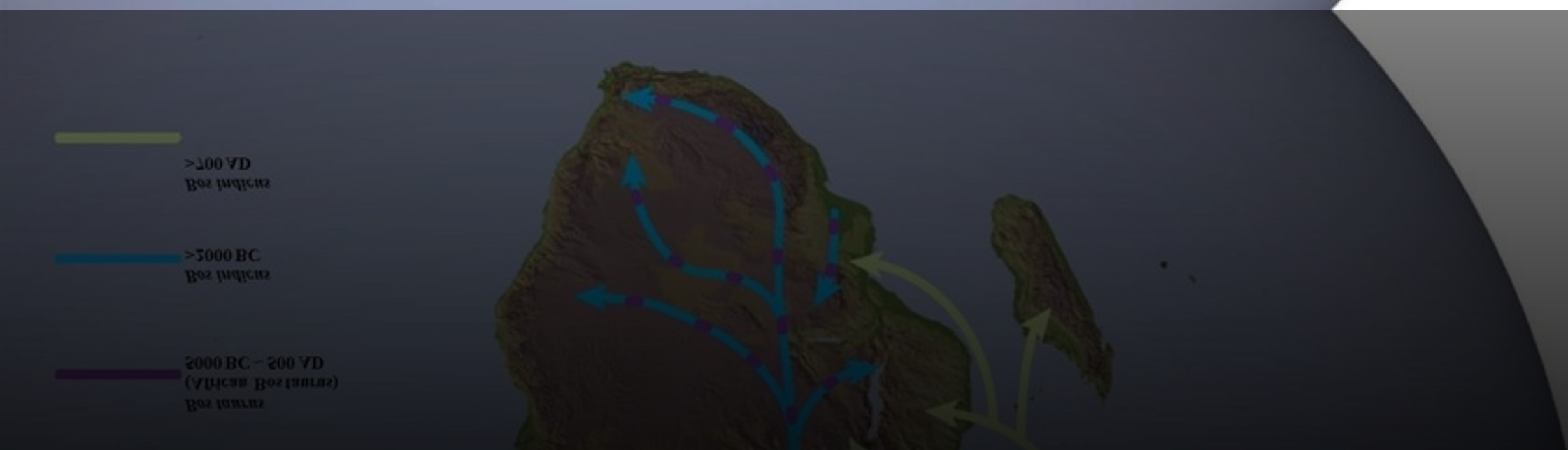
Evidence in favor of a loan word

Form	Gloss	Language	Family	Form	Gloss	Language	Family
*nìŋka	cow	Proto-Western-Mande	Mande	mìsí	vache	Bambara	Mande
nìngì	cow, cattle	Kono	Mande	ŋínsì	vache	Maninkakan	Mande
nìká	cow, ox	Mende	Mande	nìsí	vache	Koyaga	Mande
nàŋá	cow, bull	Toro Tegu	Dogon	nikε	cow	Loma	Mande
*i-ŋombe	cow	Proto-Bantu	Bantoid	*e-be	cow	Proto-Bak?	Atlantic



<https://www.nationalgeographic.com/travel/article/algeria-rock-art-prehistoric-sahara-petroglyphs>

COW across African languages





Selected References

- Babiker, Hiba, Jeffrey Heath, Floyd Reed, Stephan Schiffels & Russell D. Gray. 2020. Striking Genetic Diversity Among Populations of West Africa Uncovers the Mystery of a Language Isolate. <http://dx.doi.org/10.2139/ssrn.3631471> (5 August, 2020).
- Blench, Roger. 2017. African Language Isolates. In Lyle Campbell (ed.), *Language Isolates*, 162–192. London and New York: Routledge.
- Brooks George E. A Provisional Historical Schema for Western Africa Based on Seven Climate Periods (ca. 9000 B.C. to the 19th Century). In: *Cahiers d'études africaines*, vol. 26, n°101-102, 1986. Milieux, histoire, historiographie. pp. 43-62.
- Campbell, L. (Ed.). (2017). *Language Isolates* (1st ed.). Routledge. <https://doi.org/10.4324/9781315750026>
- Dimmendaal, G.J. (2008), Language Ecology and Linguistic Diversity on the African Continent. *Language and Linguistics Compass*, 2: 840-858. <https://doi.org/10.1111/j.1749-818X.2008.00085.x>
- Eberhard, David M., Gary F. Simons, and Charles D. Fennig (eds.). 2022. *Ethnologue: Languages of the World*. Twenty-fifth edition. Dallas, Texas: SIL International. Online version: <http://www.ethnologue.com>
- Güldemann, Tom. 2018. Historical linguistics and genealogical language classification in Africa". *The Languages and Linguistics of Africa*, edited by Tom Güldemann, Berlin, Boston: De Gruyter Mouton, pp. 58-444. <https://doi.org/10.1515/9783110421668-002>
- Mwai, Okeyo, Hanotte, Olivier, Kwon, Young-Jun & Cho, Seoae. 2015. - Invited Review - African Indigenous Cattle: Unique Genetic Resources in a Rapidly Changing World. *Asian-Australas J Anim Sci*. Asian-Australasian Association of Animal Production Societies 28(7). 911–921. (doi:[10.5713/ajas.15.0002R](https://doi.org/10.5713/ajas.15.0002R))
- Tishkoff SA, Reed FA, Friedlaender FR, Ehret C, Ranciaro A, Froment A, Hirbo JB, Awomoyi AA, Bodo JM, Doumbo O, Ibrahim M, Juma AT, Kotze MJ, Lema G, Moore JH, Mortensen H, Nyambo TB, Omar SA, Powell K, Pretorius GS, Smith MW, Thera MA, Wambebe C, Weber JL, Williams SM. The genetic structure and history of Africans and African Americans. *Science*. 2009 May 22;324(5930):1035-44. doi: 10.1126/science.1172257. Epub 2009 Apr 30. PMID: 19407144; PMCID: PMC2947357.

Software

- Forkel, Robert. et al. (2018). **CLDF**: Cross-Linguistic Data Formats, advancing data sharing and reuse in comparative linguistics. *Sci. Data*. 5:180205 doi: 10.1038/sdata.2018.205 <https://cldf.clld.org/>
- Hammarström, Harald & Forkel, Robert & Haspelmath, Martin & Bank, Sebastian. (2021). **GLOTTOLOG** 4.4. Leipzig: Max Planck Institute for Evolutionary Anthropology. <https://doi.org/10.5281/zenodo.4761960>
- DH Huson and D. Bryant. (2006). **SplitsTree**: Application of Phylogenetic Networks in Evolutionary Studies, *Mol. Biol. Evol.*, 23 (2): 254-267. <https://software-ab.informatik.uni-tuebingen.de/download/splitstree5/welcome.html>
- List, Johann Mattis & Rzymiski, Christoph & Greenhill, Simon & Schweikhard, Nathanael & Pianykh, Kristina & Tjuka, Annika & Hundt, Carolin & Forkel, Robert (eds.) 2021. CLLD Concepticon 2.5.0 [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.4911605>
- List, Johann-Mattis (2021): **EDICTOR**. A web-based interactive tool for creating and editing etymological datasets. Version 2.0.0. Max Planck Institute for Evolutionary Anthropology: Leipzig. <https://digling.org/edictor/>
- List, Johann-Mattis and Forkel, Robert (2021): **LingPy**. A Python library for historical linguistics. Version 2.6.8. <https://lingpy.org>
- Moran, Steven, & Cysouw, Michael. (2018). The Unicode Cookbook for Linguists: Managing writing systems using orthography profiles (2.0.0) <https://doi.org/10.5281/zenodo.1296780>
- Moroz George (2017). **LINGTYPOLOGY** (Package for R): Easy mapping for Linguistic Typology. <https://CRAN.R-project.org/package=lingtypology>
- Segerer, Guillaume and Sébastien Flavier (2011-2022). **RefLex** (Reference Lexicon of Africa). Version 2.0. <http://reflex.cnrs.fr/>

Gàṅà ṅará ! Thank you! Merci !



[Data and Sources](#)



UNIVERSITE
CHEIKH ANTA DIOP
DE DAKAR

Faculté des Lettres et Sciences Humaines
FLSH



UNIVERSITÉ
CHEIKH ANTA DIOP
DE DAKAR

CLAD
Centre de linguistique appliquée de Dakar



UNIVERSITE
CHEIKH ANTA DIOP
DE DAKAR