

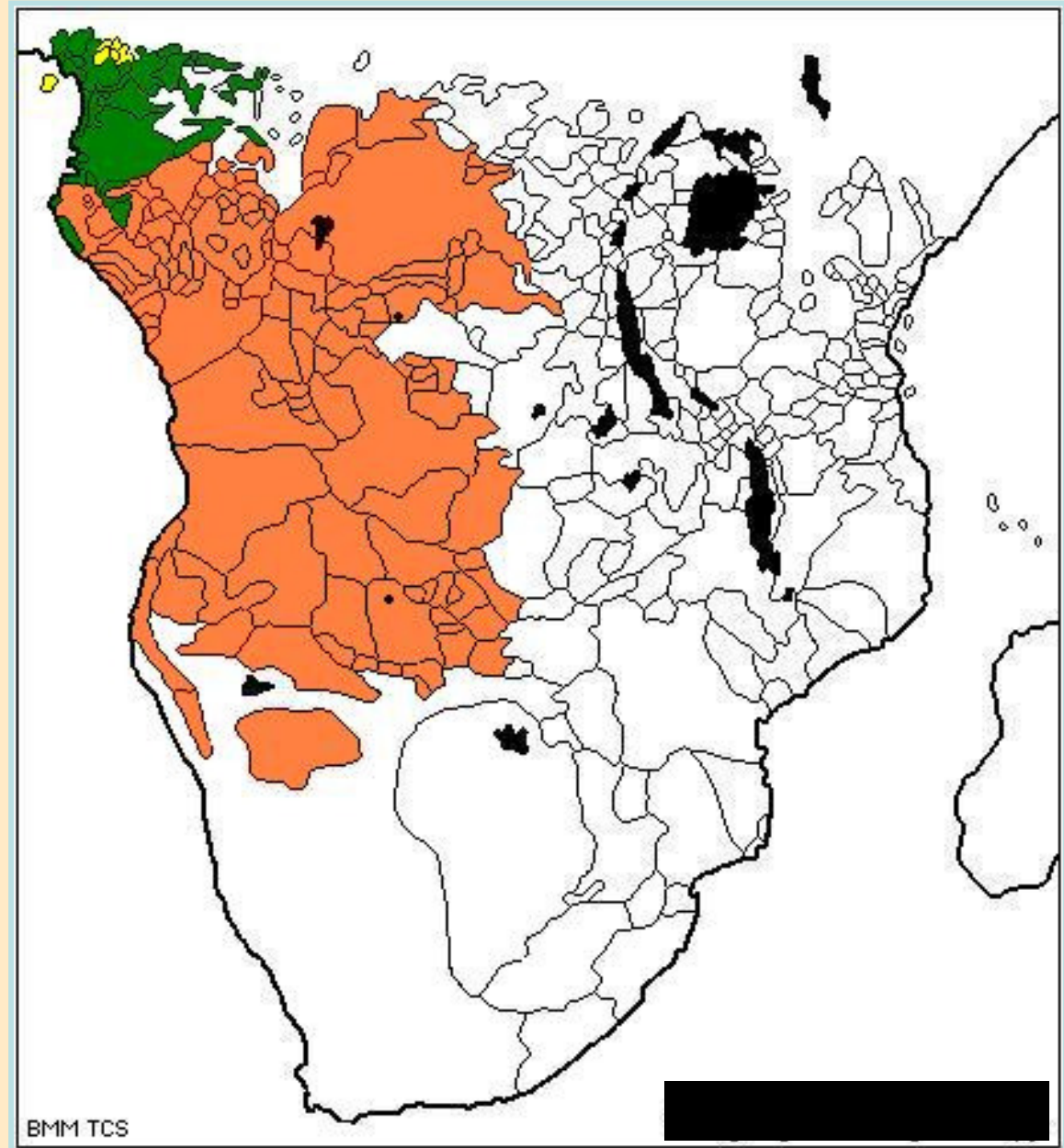


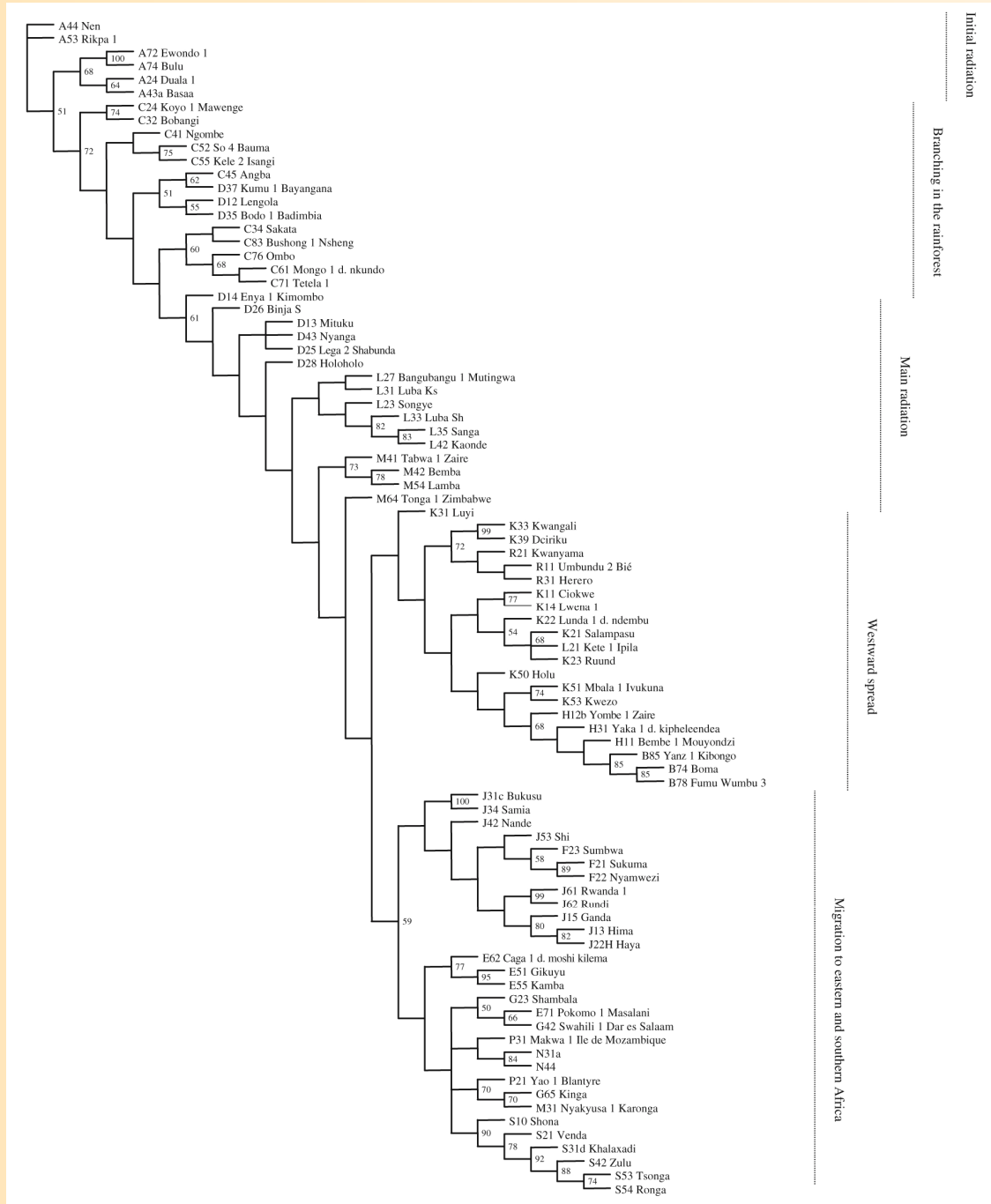
Bantu Expansion and Hunter-gatherers

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**3rd International Conference
on Bantu Languages
Tervuren, March 25-28, 2009**

**Traditional view of major
Bantu subdivisions
(Bastin and Piron 1999)
These subdivisions have
been questioned
(Heine (1977), Ehret (1998),
Rexova et al. 2006)**





Bantu Migrations

- From where?
- When?
- Why?
- Migratory routes?

Bantu Migrations

- Homeland
- Migration routes
 - Eastern/Western stream?
 - North of the Forest?
 - Across the Forest?
 - Along the coast line?
- Demic diffusion
- Agriculture
- Pottery
- Iron technology

Interpretation of linguistic data

- **Guthrie** (1967-71) Bantu origin in present-day Zambia
- **Heine** (1977) Split between Savanna languages (Congo branch) and several forest groups
- **Vansina** (1990, 1995) Bantu origin in present-day Cameroon. Expansion into the forest and then split between Eastern and Western stream
- **Ehret** (1998) Similar to Heine. More details on Eastern part
- **Rexova et al.** (2006) First separation between zone A and the other languages. Roughly similar to Heine and Ehret

- « The striking distribution of Bantu languages has caught the attention of linguists and prehistorians for a century and a half, and a great body of data has been amassed and collated.
- Despite a number of local studies, the larger picture of Bantu remains very confused, partly because of methodological disagreements between linguists and partly because of patchy coverage of the archaeology »

From Blench, 2006, p138

Agriculture

- Expansion Niger-Congo is not linked to agriculture: no archaeobotanical evidence before 3800 BP (Neumann, 2003)
- But linguistic evidence for ancient reconstructions for yam and sorghum; use of wild forms before cultivated crops without changing terms:
foragers > transplanters > farmers
(Blench, 1996, 2006)

Iron Technology

- Early Bantu migrations are too early to be connected with iron technology
- Specialized lexicon (eg blacksmith's tools) do not reconstruct for early periods (Hombert, 1979)

Mammals

- 1. Sample of lexical roots for savannah or ubiquitous mammal species :

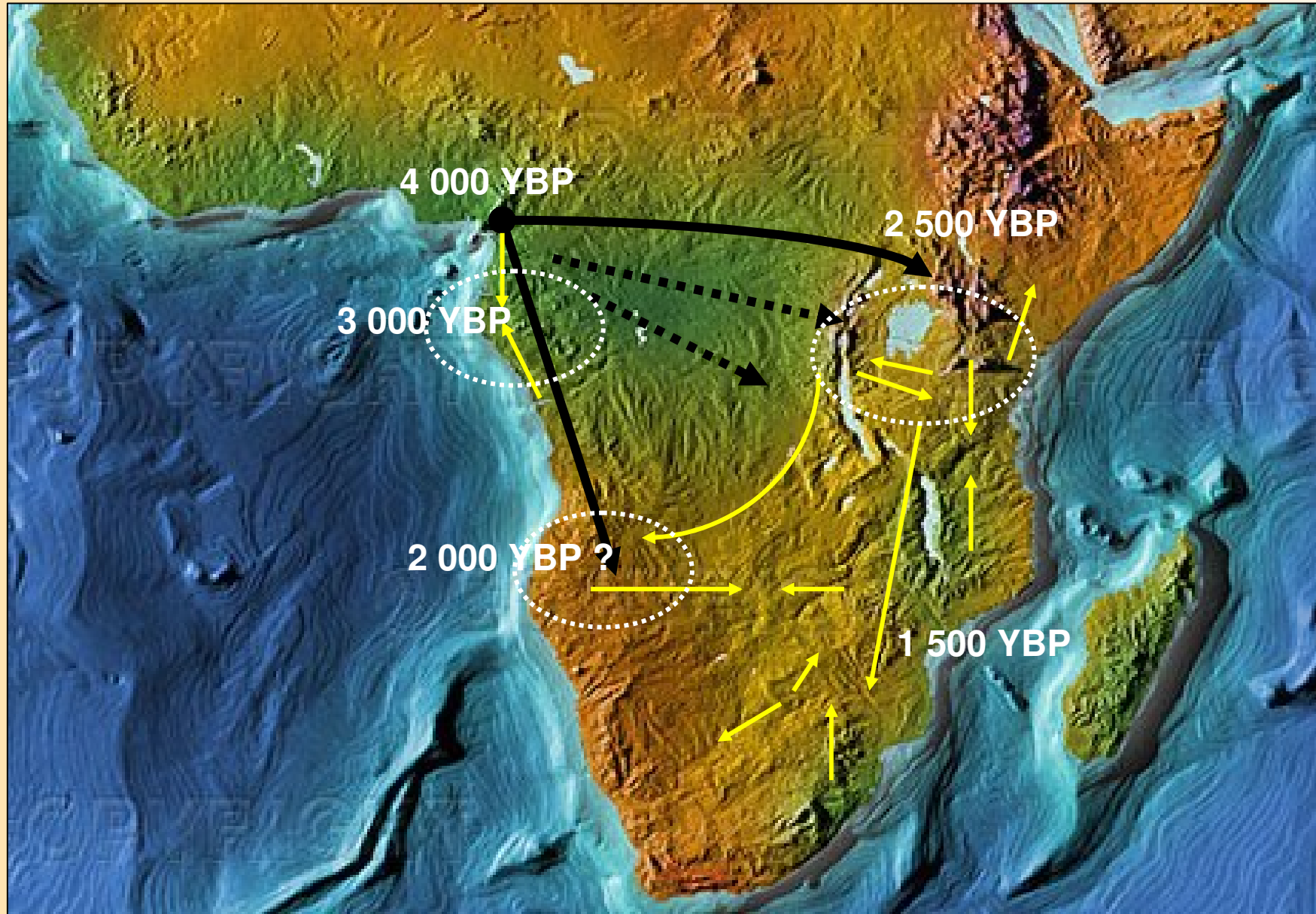
● Buffalo	*-yátì
● African Elephant	*-jògù
● Bat	*-démà, *-dí mà
● Pangolin	*-kákà
● Hippopotamus	*-gùbú

2. Sample of lexical roots for mammal species restricted to the Guineo-Congolian zone (language X substratum ?)

- Black-fronted duiker (*Cephalophus nigrifrons*)
°-cúmbí
- Yellow-backed duiker (*Cephalophus sylvicultor*)
°-jìbù / °-bímbà
- Water chevrotain (*Hyemoschus aquaticus*)
°-yídí / °-yɔ̀ŋgɔ̀
- Golden cat (*Profelis aurata*)
°-bùà
- Gorilla (*Gorilla gorilla*)
°-gìdà / °-bóbó

Fish names

- Only 3 reconstructible stems for freshwater species :
 - *-kúŋgá *Protopterus* and *Polypterus* spp.
(+ various eel-like seawater spp. in Eastern Africa)
 - °-gòdà *Clarias* spp.
 - °-kèké *Luciolates stappersi* (also *Tilapia* spp.)
- In western central Africa, the average language comprises about 40 different terms for freshwater fishes (out of several hundred different spp.). So, great diversity and irregularity.
- For seawater fish spp. along the west Atlantic coast, out of c. 60 different terms, only one has a fairly wide distribution:
 - °-bèdì *Megalops atlanticus* (perhaps not the original referent)





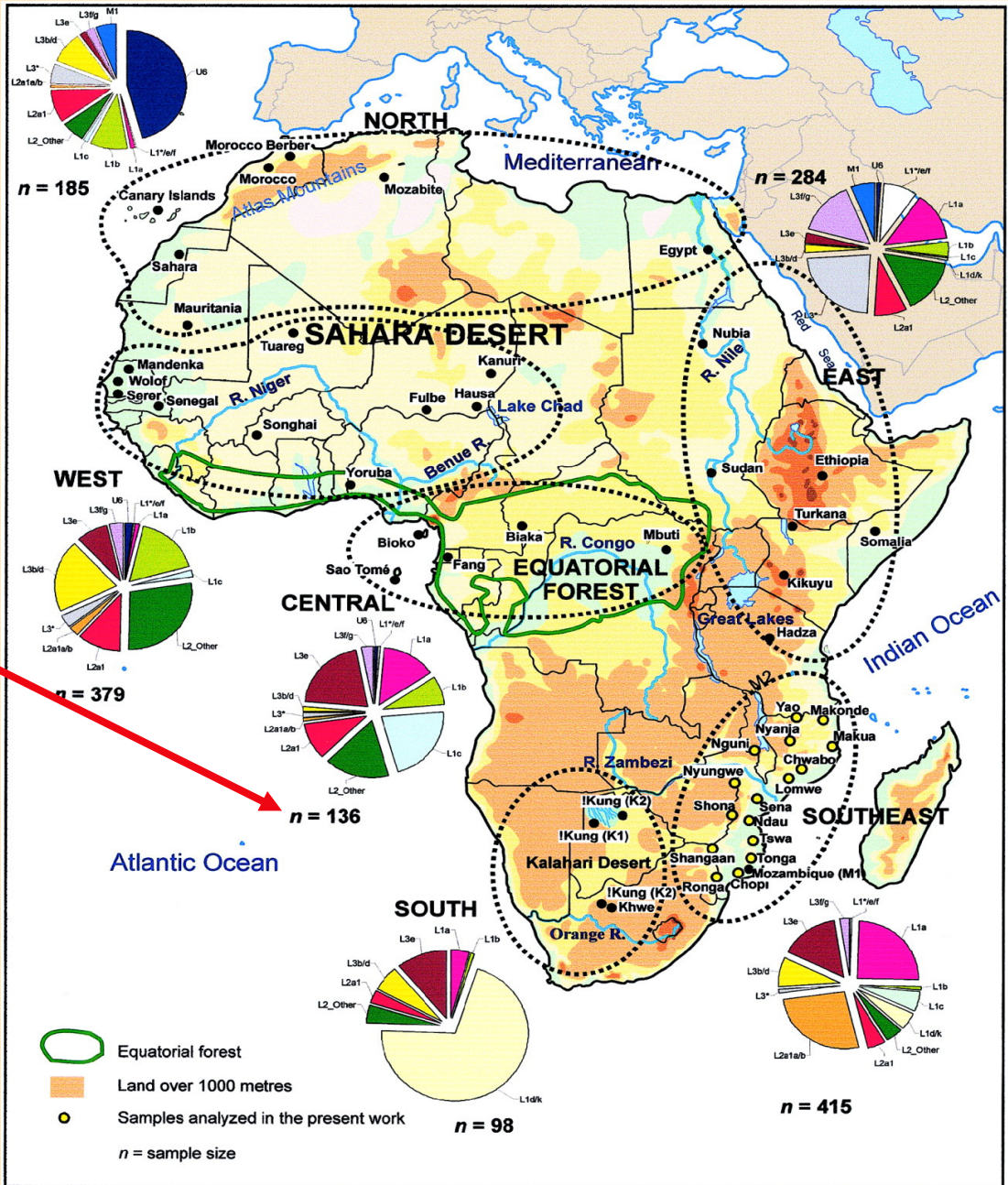
Arguments for migratory routes

- Successful migrations imply higher demography which implies better access to food supply which is greatly helped by double ecological systems:
 - border savanna/forest
 - use of river systems
- Northern route (and southern route around the forest)

Archaeological dates

- At 3500 BP : new Neolithic population (pottery, village settlements) in forest environment at Epona II, Gabon (Clist, 1995)

Salas & al. (2002)



Genetic Data

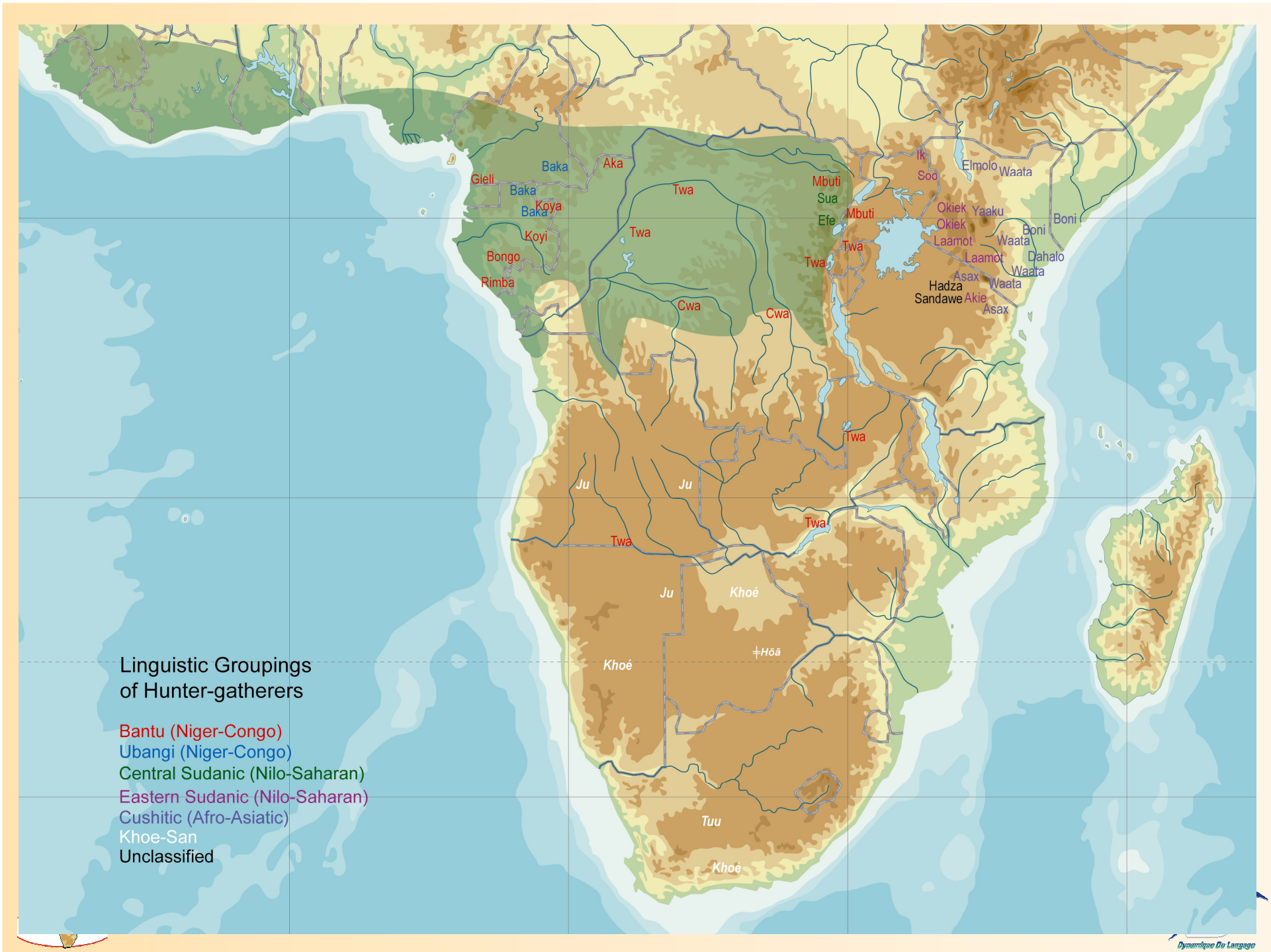
- L0a, L1c, L2a, L3b, L3e have been associated with Bantu expansion

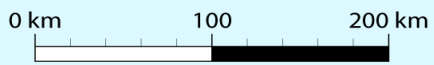
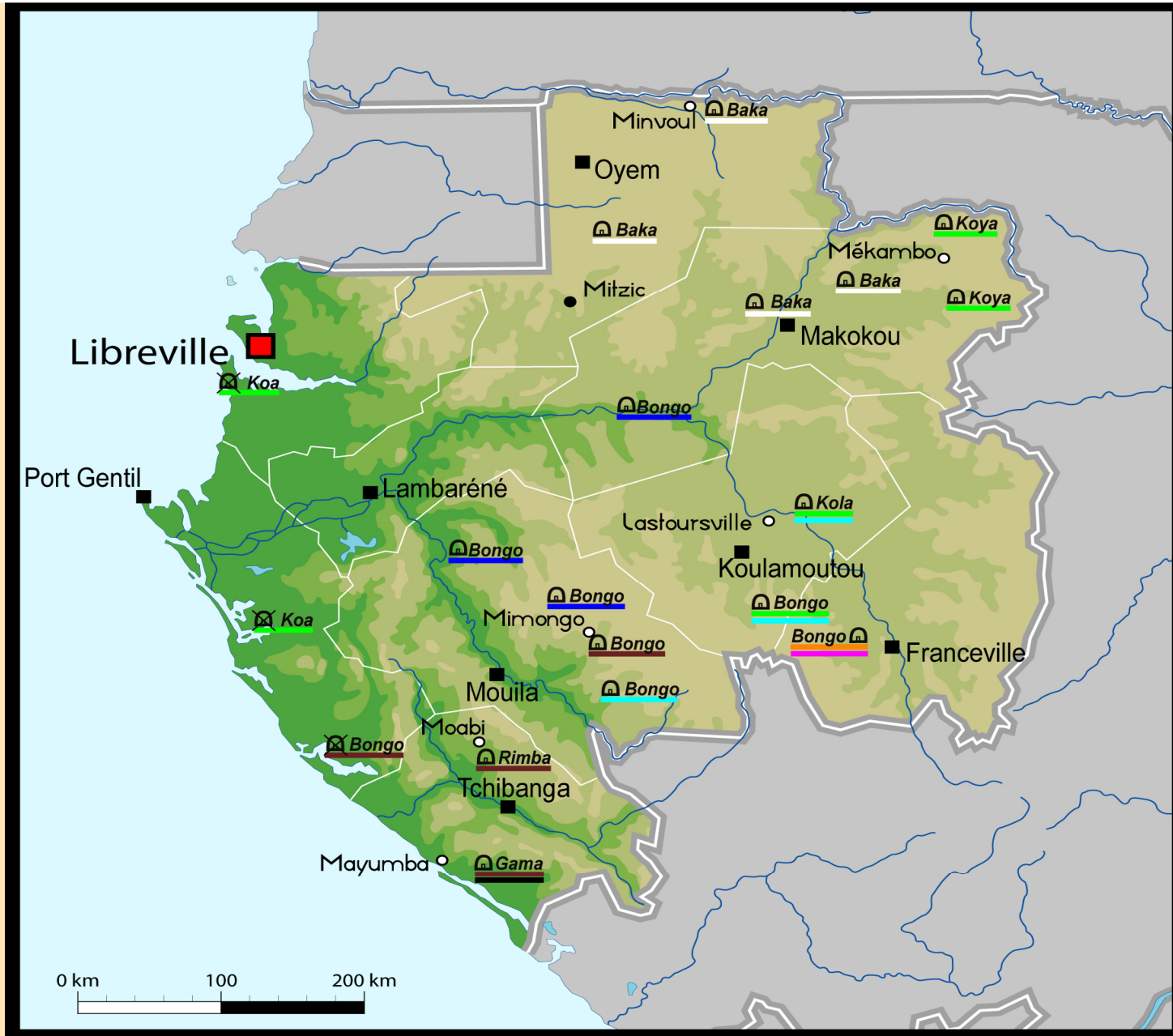
Hunter-gatherers



- How many different groups?
- Pygmies?
- San ?
- Other groups?

Questions rarely asked in the context of Bantu expansion

- Contacts between Bantu populations and hunter-gatherers (especially with Pygmies)
 - Where and When?
 - Types of interactions
 - Evolution of these interactions with time



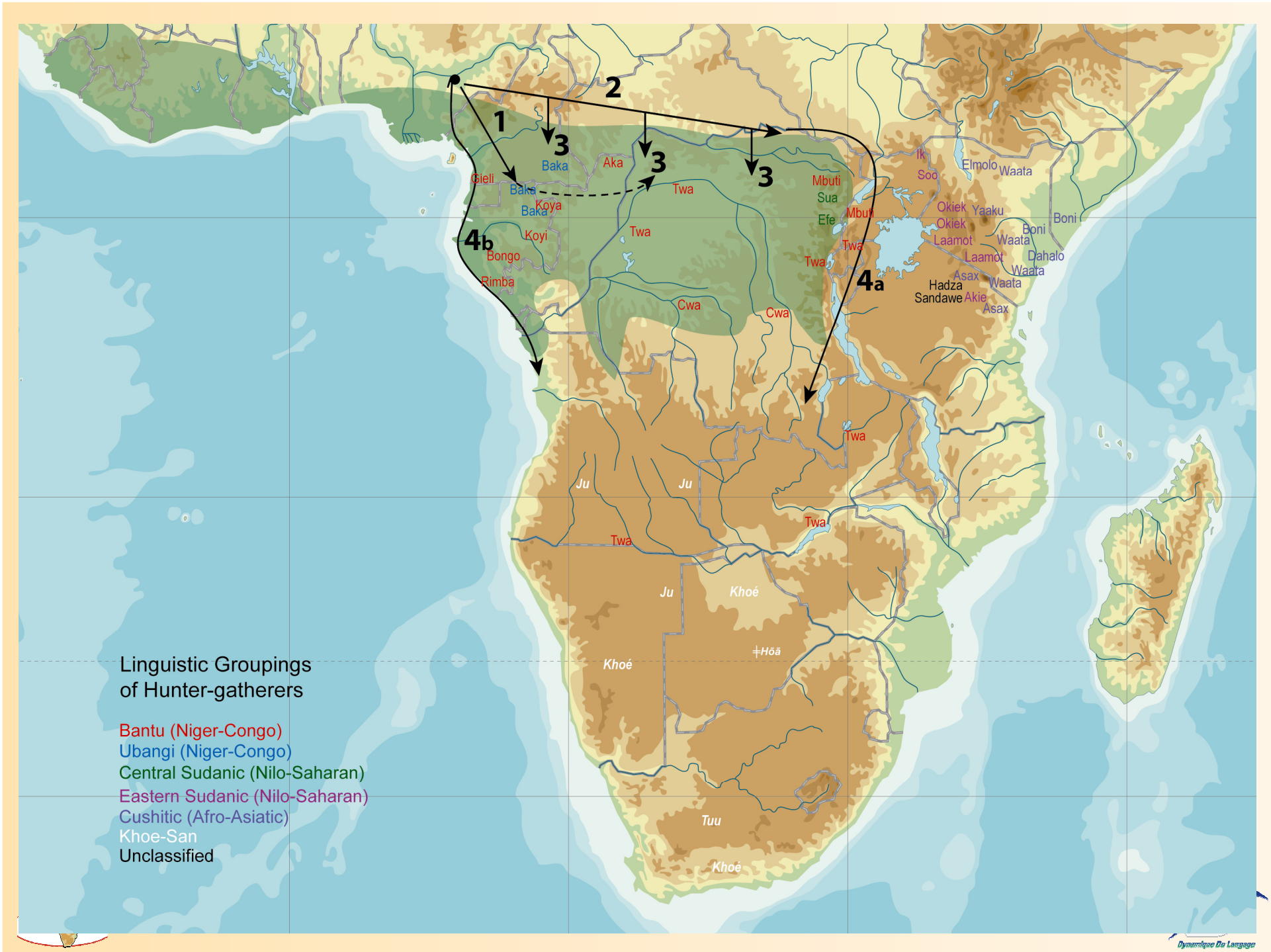


<u>B20</u>	<u>B30</u>	<u>B40</u>	<u>B50</u>	<u>B60</u>	<u>B70</u>	<u>H12b</u>
Ubanguian						
_____		 Camp	 Ancient camp			



Linguistic Classification of Pygmy groups

■ Gyeli (Cameroon)	Bantu A80
■ Baka (Cameroon, Gabon)	Ubangian
■ Kola (Gabon)	Bantu B20
■ Bongo (Gabon)	Bantu B30, 40, 50, 60, 70
■ Aka (CAR, Congo)	Bantu C10
■ Twa (Mongu) (DRC)	Bantu C60
■ Cwa (Kuba) (DRC)	Bantu C80
■ Bambote (Lake Tanganyika, DRC)	Bantu D20
■ Sua-Mbuti (Ituri, DRC)	Bantu D30
■ Twa (Rwanda, Uganda, DRC)	Bantu JD60
■ Cwa (Luba) (Katanga, DRC)	Bantu L30
■ Sua-Efe (Ituri, DRC)	Central Sudanic
■ Asua (Aka) (Ituri, DRC)	Central Sudanic



Dahalo case

- Originally, a « click » language
- Contact with Cushitic (pastoralists) speakers
- Today, they speak a Cushitic language with about 80 words containing clicks

Nilo-Saharan groups

■ Ik and Soo:

- Isolate within Eastern Sudanic?

■ Okiek:

- Speak a Southern Nilotic language
- Closely related to some of their neighbors' languages

■ Laamot:

- Speak a Southern Nilotic language
- Not closely related to any other Southern Nilotic language

Khoekhoe case

- Originally, speakers of « click » languages
- Acquired pastoralism from north-eastern group(s)
- Today, they retain their original click language and seem to have assimilated some Bantu groups
- Some of the San groups speak some Khoekhoe languages (a situation similar to the Bantu/Pygmy case but with clicks)

The Pygmy/San linguistic paradox

- Apparently opposite situation between Pygmy/Bantu vs San/Bantu
- No « Pygmy language » (Pygmy groups speak a language closely related to a language of a neighboring tribe, generally Bantu)
- A large number of San groups have retained their own Khoisan languages (and clicks are found in a number of Bantu languages)
- Similar process but a different chronology?
(see intermediate case in East Africa)
i.e. the situations will be identical in the future

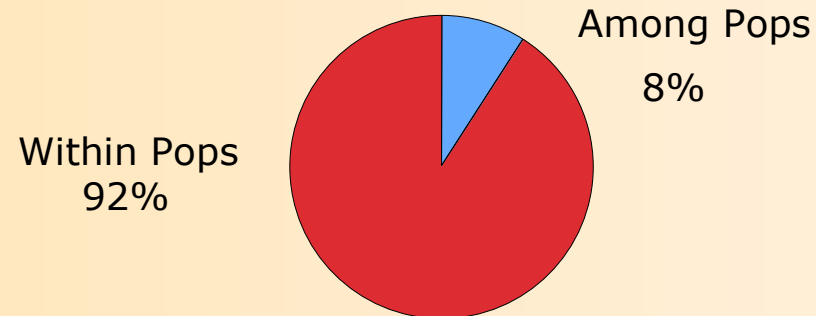
Genetic data : comparison between Bantu and Pygmy populations in NW (Cameroon and Gabon)

- 20 farming communities
- 9 Pygmy communities
- 1404 individuals
- L1c-rich ancestral population
- L1c1a in Pygmy populations
- L1c1a autochthonous to Central Africa
- (most recent branches shared between farmers and Pygmies)

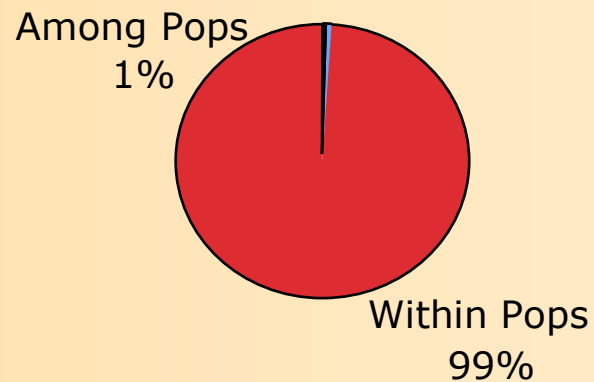
- See Quintana et al, PNAS, 105,5, 1596-1601

Analysis of MOlecular Variance (AMOVA)

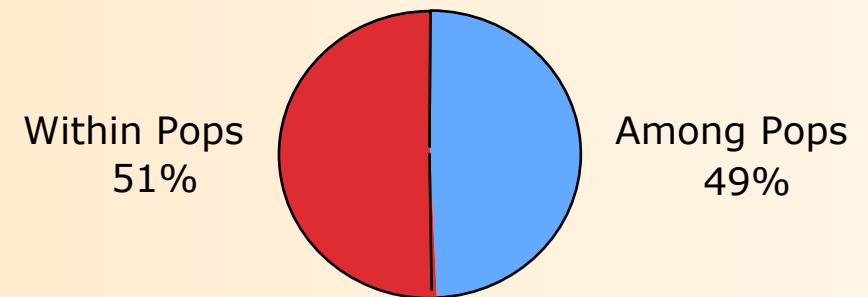
Percentages of Molecular Variance in the entire collection



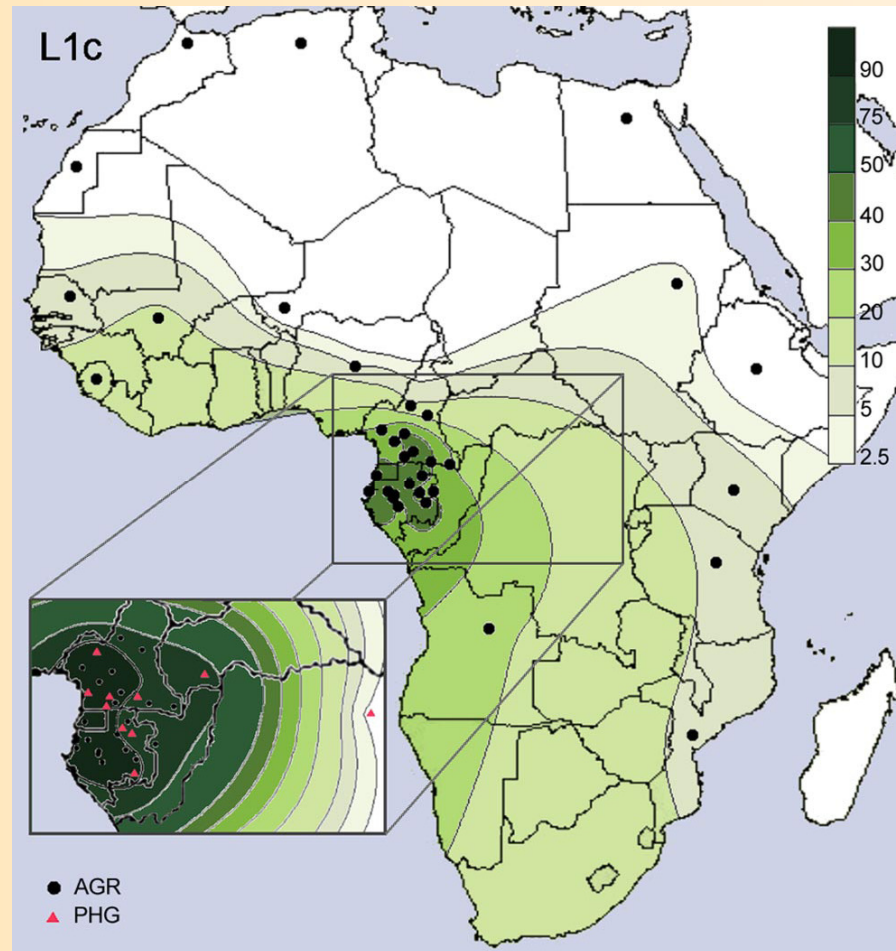
Percentages of Molecular Variance in Bantu-speakers agriculturalists



Percentages of Molecular Variance in Pygmy hunter-gatherers

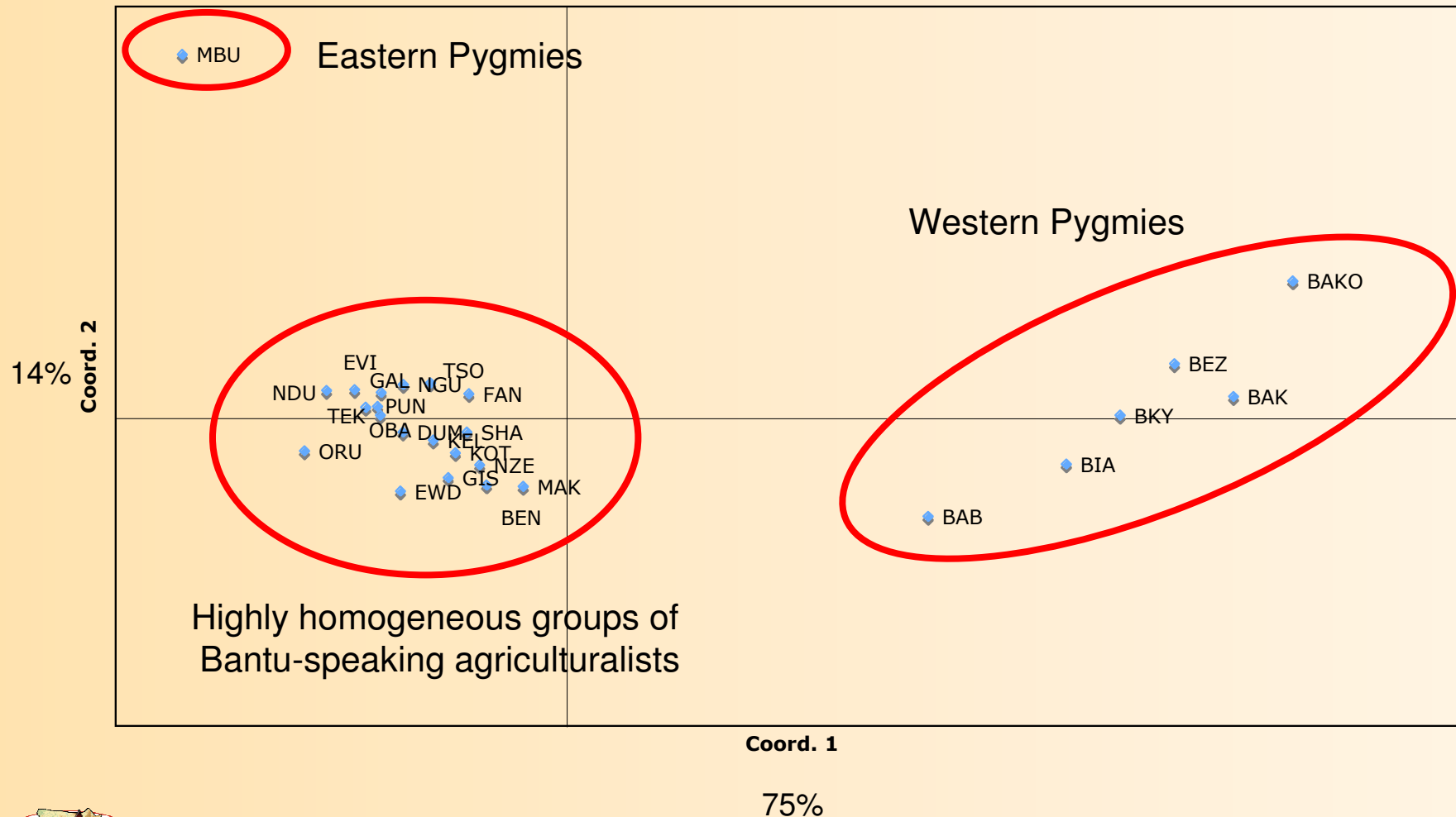


Haplogroup L1c



Population relationships: entire collection

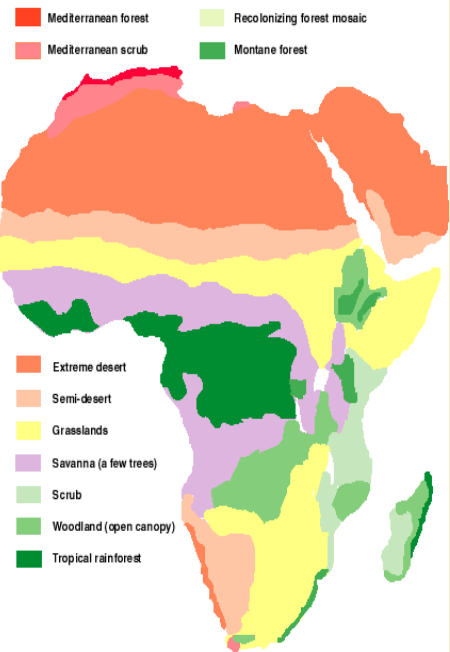
Principal Coordinates



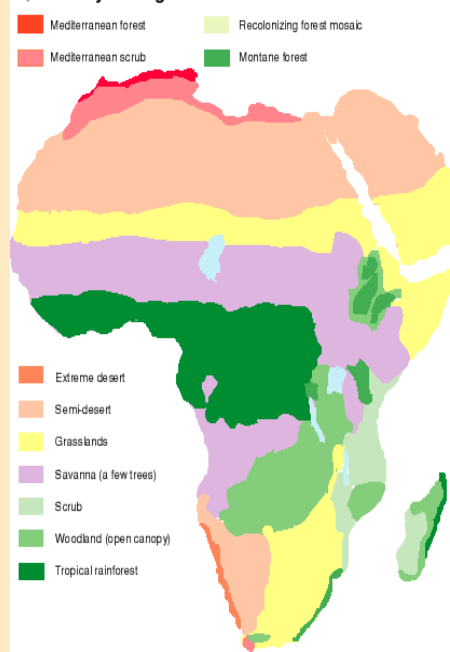
Interpretation of MtDNA

- Initial divergence of ancestors of two contemporary groups (Pygmies and Agriculturalists) from an ancestral Central African population about 70.000 BP (L1c Haplogroup, Pygmies : L1c1a)
- Period of isolation between these two groups
- Contacts between the western Pygmies and genetic ancestors of current « Bantu populations » beginning 40.000 BP until a few thousand years ago (asymmetric maternal gene flow)
- Bantu expansion : Recent arrival among agriculturalist populations of L0a, L2 and L3 carriers

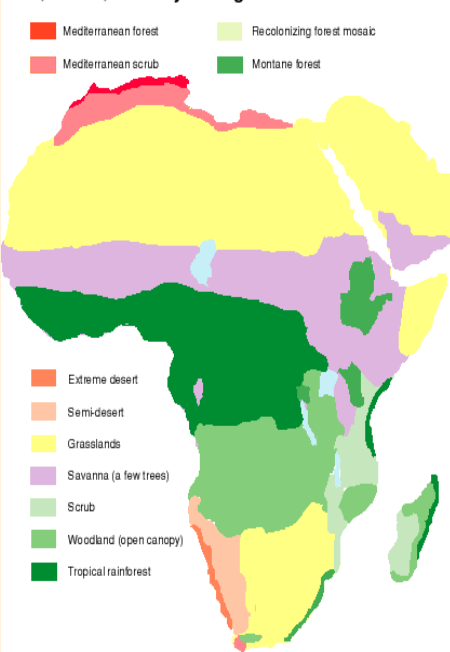
Present Potential Vegetation



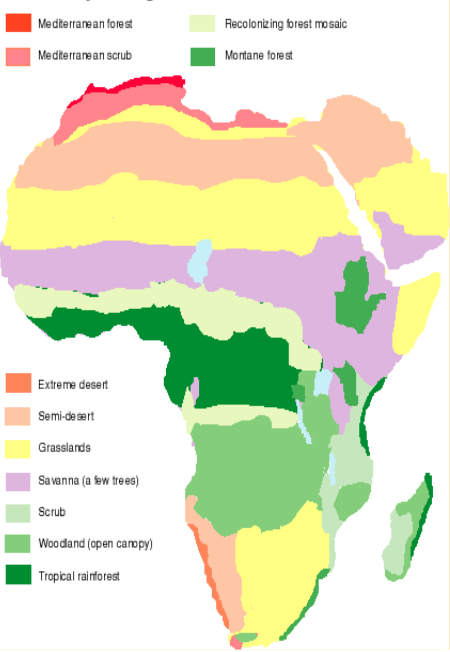
5,000 ¹⁴C years ago



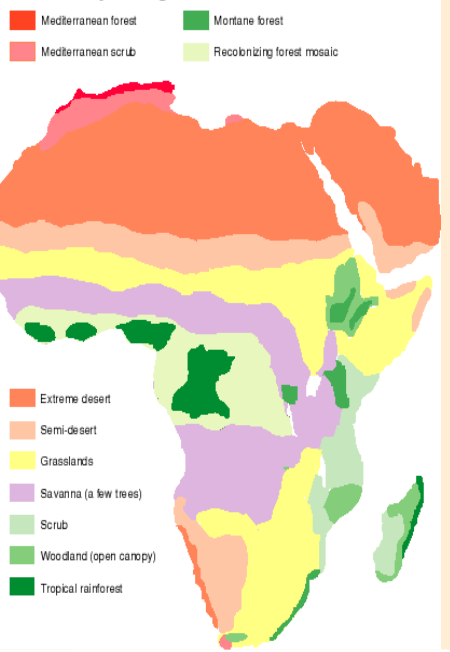
8,000 – 7,000 ¹⁴C years ago



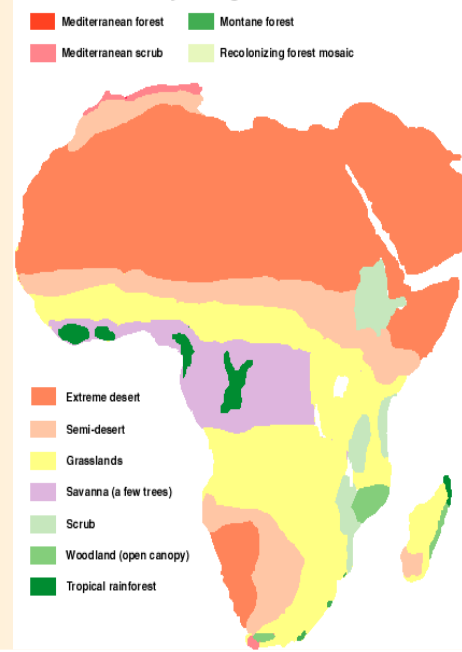
9,000 ¹⁴C years ago



11,000 ¹⁴C years ago



20,000 - 16,000 ¹⁴C years ago



Synthesis from recent genetic analyses

- 70.000 BP: Separation between « Bantu ancestors » and Pygmy ancestors (because of climatic change or volcanic winter (Toba eruption))?
- 20.000 BP: Separation between eastern and western Pygmies (because of Equatorial forest split?)
- 3.000 BP: Separation of Western Pygmy groups (because of increasing Bantu populations)

Isolated languages

- **Traces of ancient linguistic diversity**
- **Rare in Africa?**
- **Recent migrations?**
- **Existence of « Empires »?**
- **Tendency to include all languages in existing families**
- **Examples of isolated languages : Jalaa in Nigeria, Laal in Tchad, Hadza in Tanzania**

■ Thank you...

Thanks to :

- Christian Fressard (Maps)
- Jacky Maniacky (Southern Twa)
- Maarten Mous (Eastern HG)
- Derek Nurse (Eastern Africa)
- Lluís Quintana-Murci (Genetics)
- Lolke Van der Veen (NW Bantu)

Click languages (Knight et al, 2003)

- Comparison between northern (Hadza) and southern click languages
- Original goal : showing their proximity
- Results : maximum genetic diversity
- Conclusion : clicks are a very old linguistic trace??? (see Guldemann)

Possible scenari

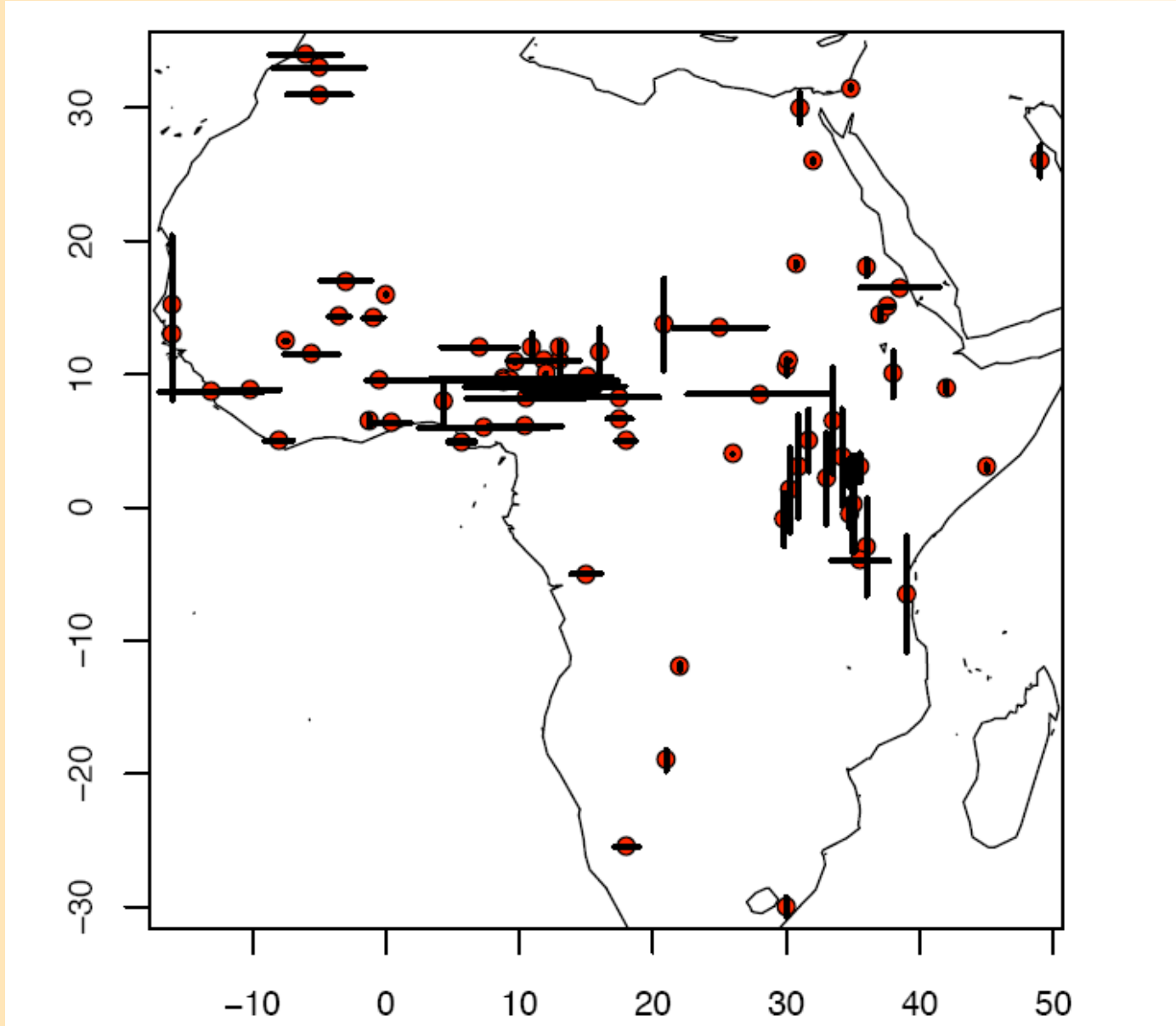
- Bahuchet
- Vansina
- Klieman
- Our proposal

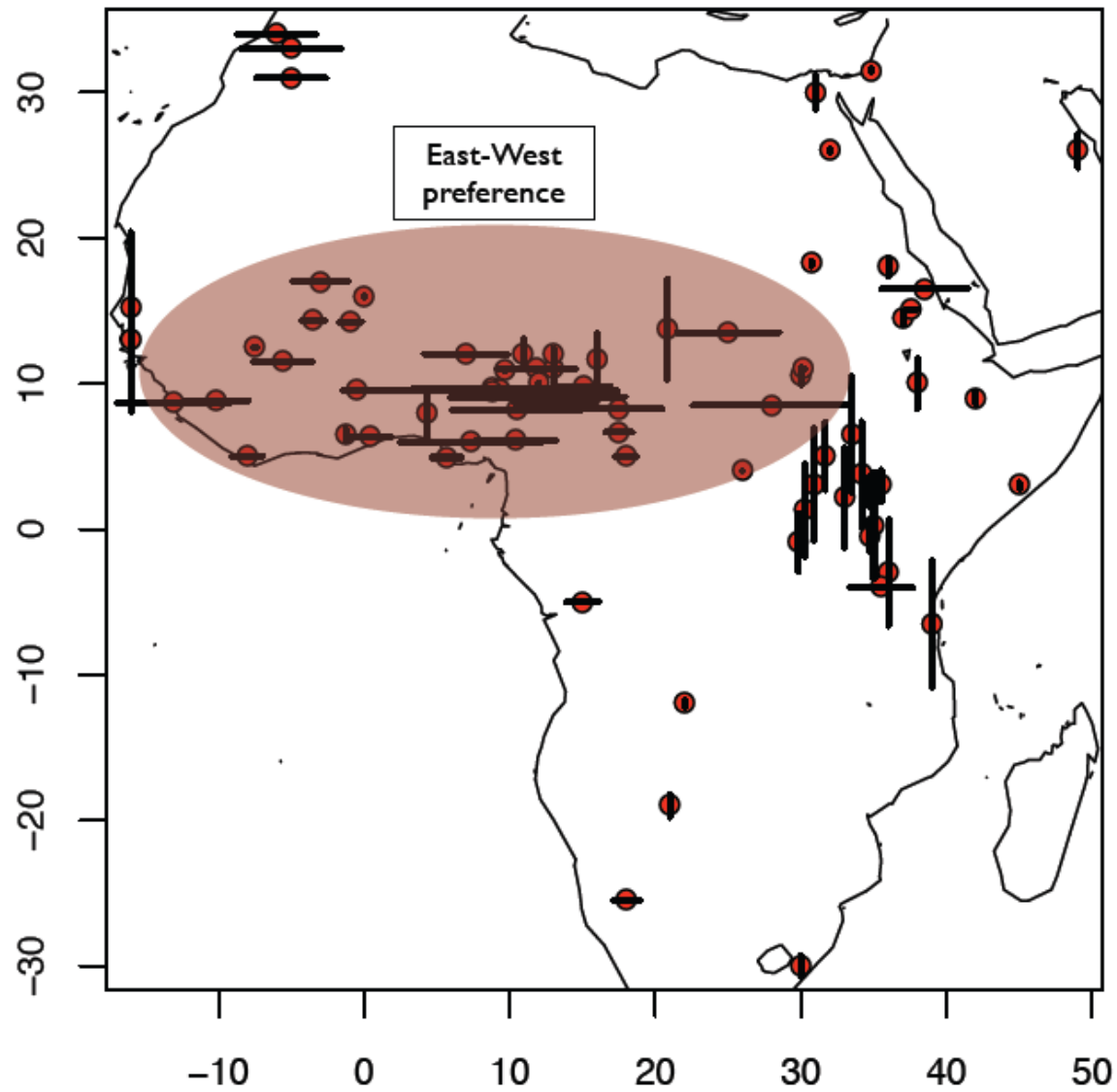
Klieman

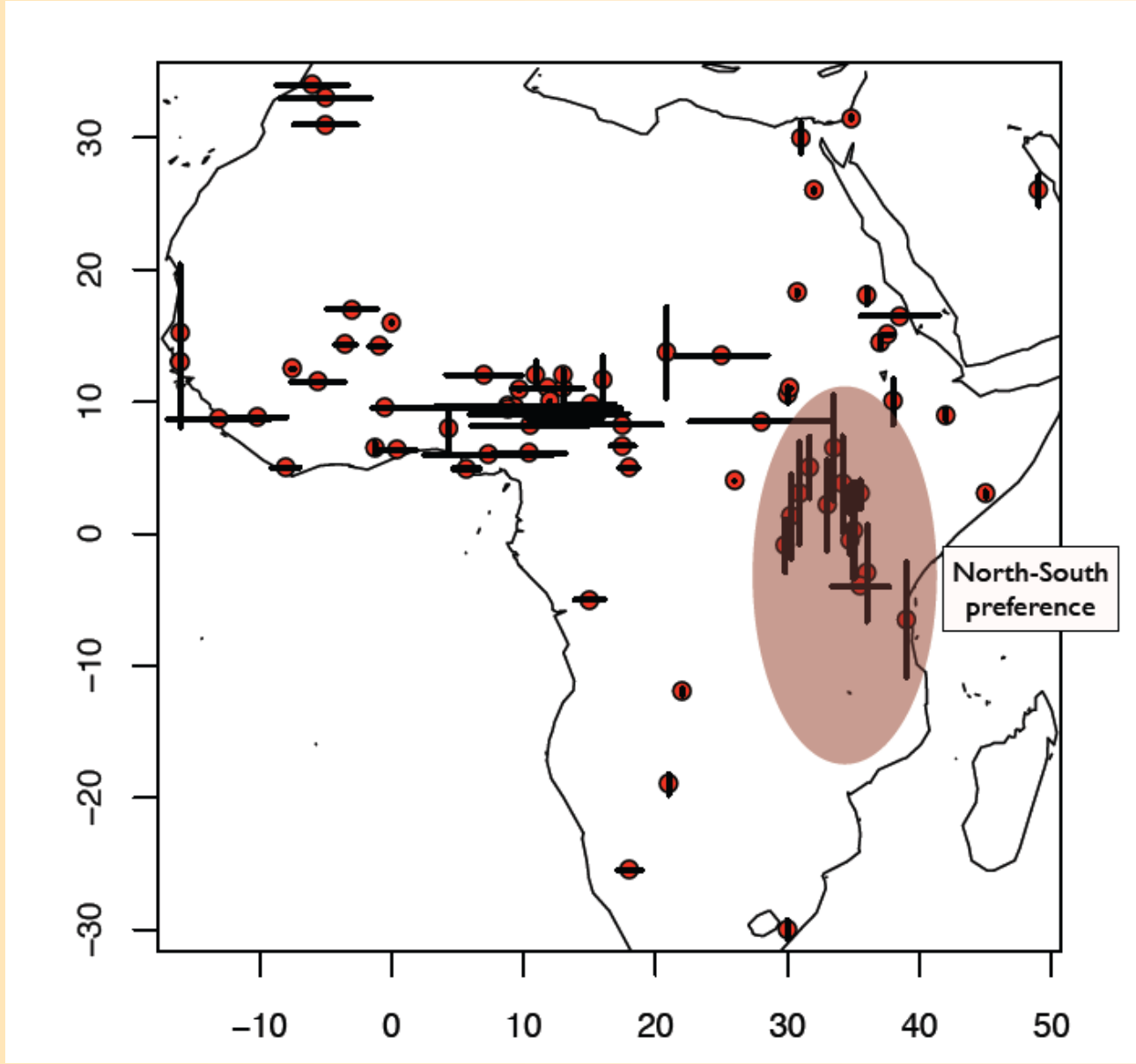
- Avant-garde of Bantu speakers present in the rain forest around 5th millenium BC along the coast (and 4th millenium BC in the far NW rainforest)
- Strong interactions with local HG
- Bantu speakers lived for periods of 600 to 1600 years (depending on the location) in relative economic and technological parity with the HG they met

Vansina

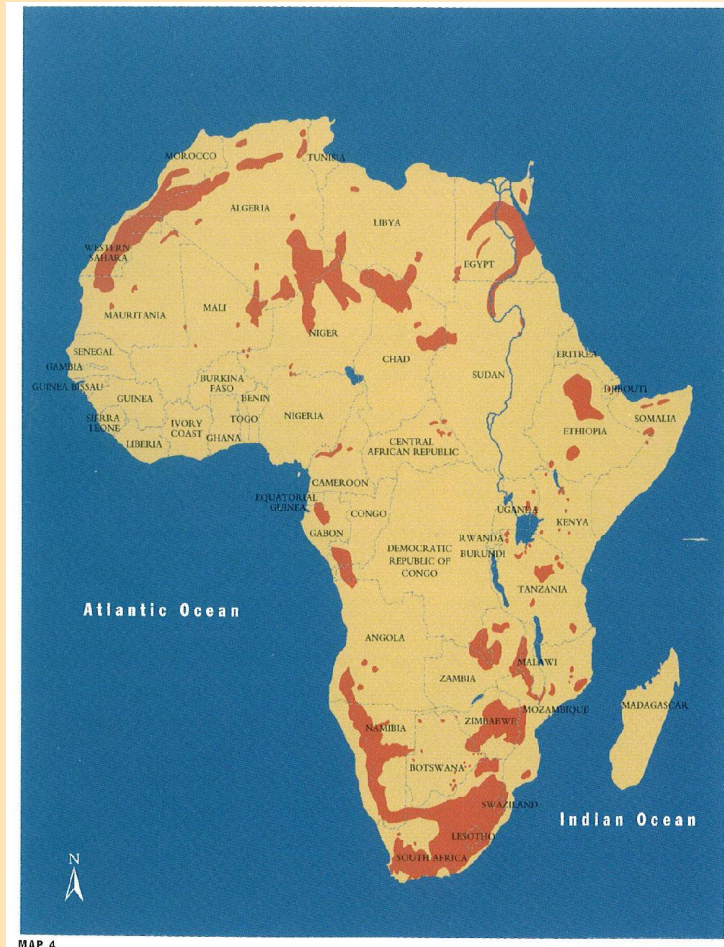
■ Slow revolution in Agriculture







African Rock Art (B. Smith)

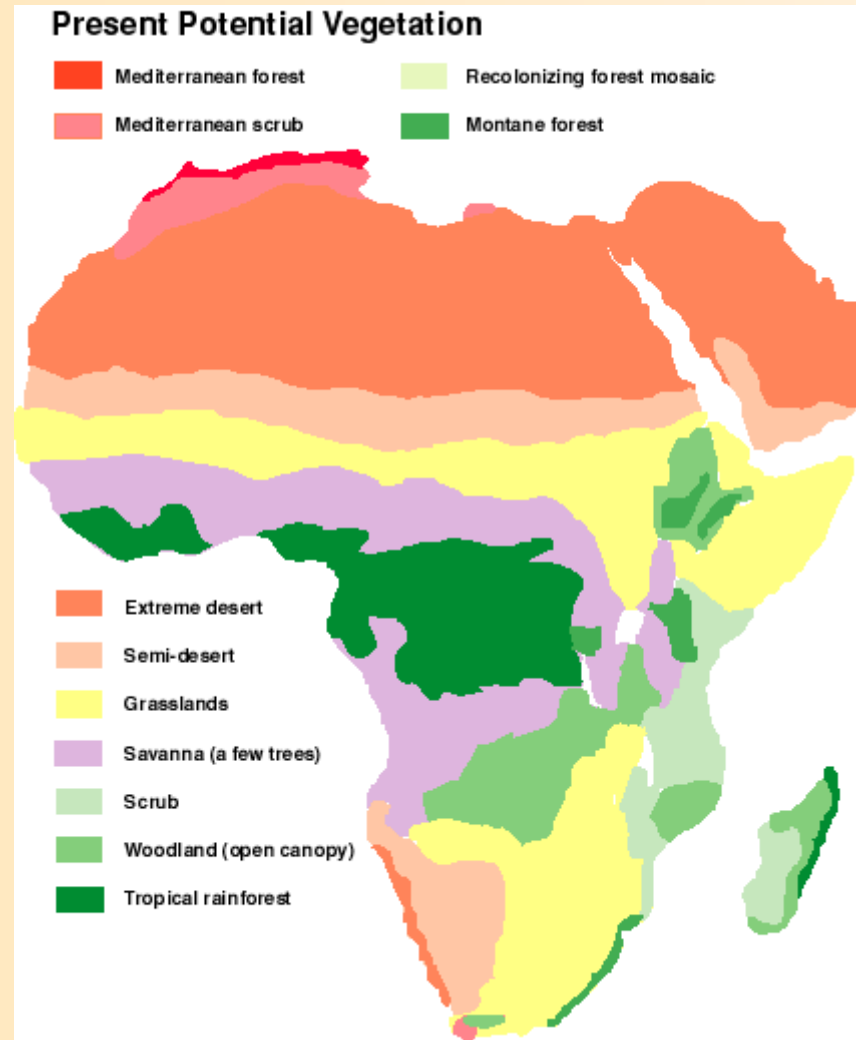


■ « Northern HG (Tanzania)

■ Bantu

■ San

Environmental conditions

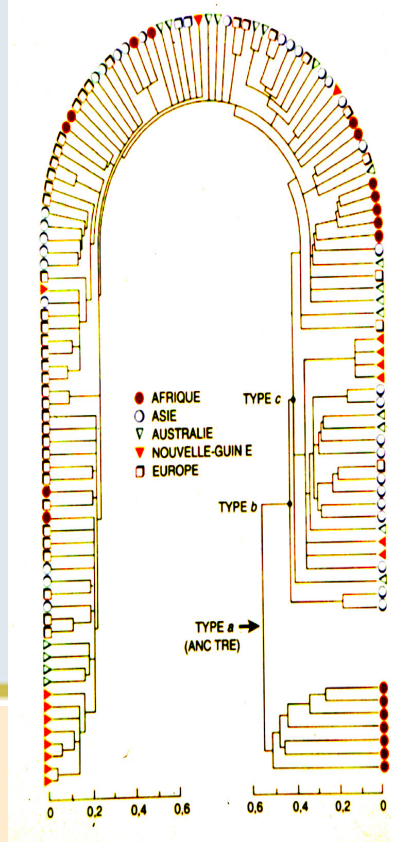
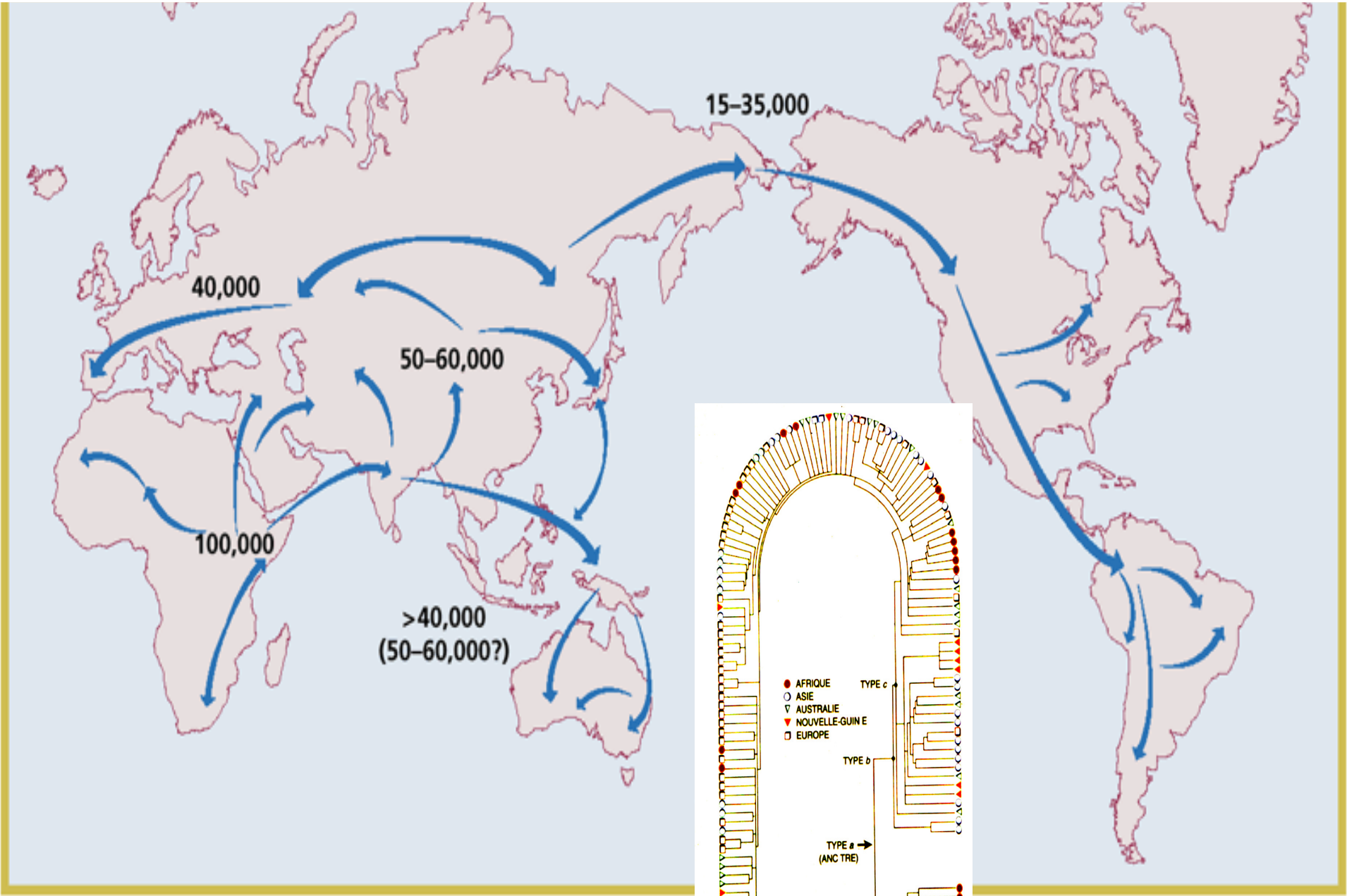


Population densities

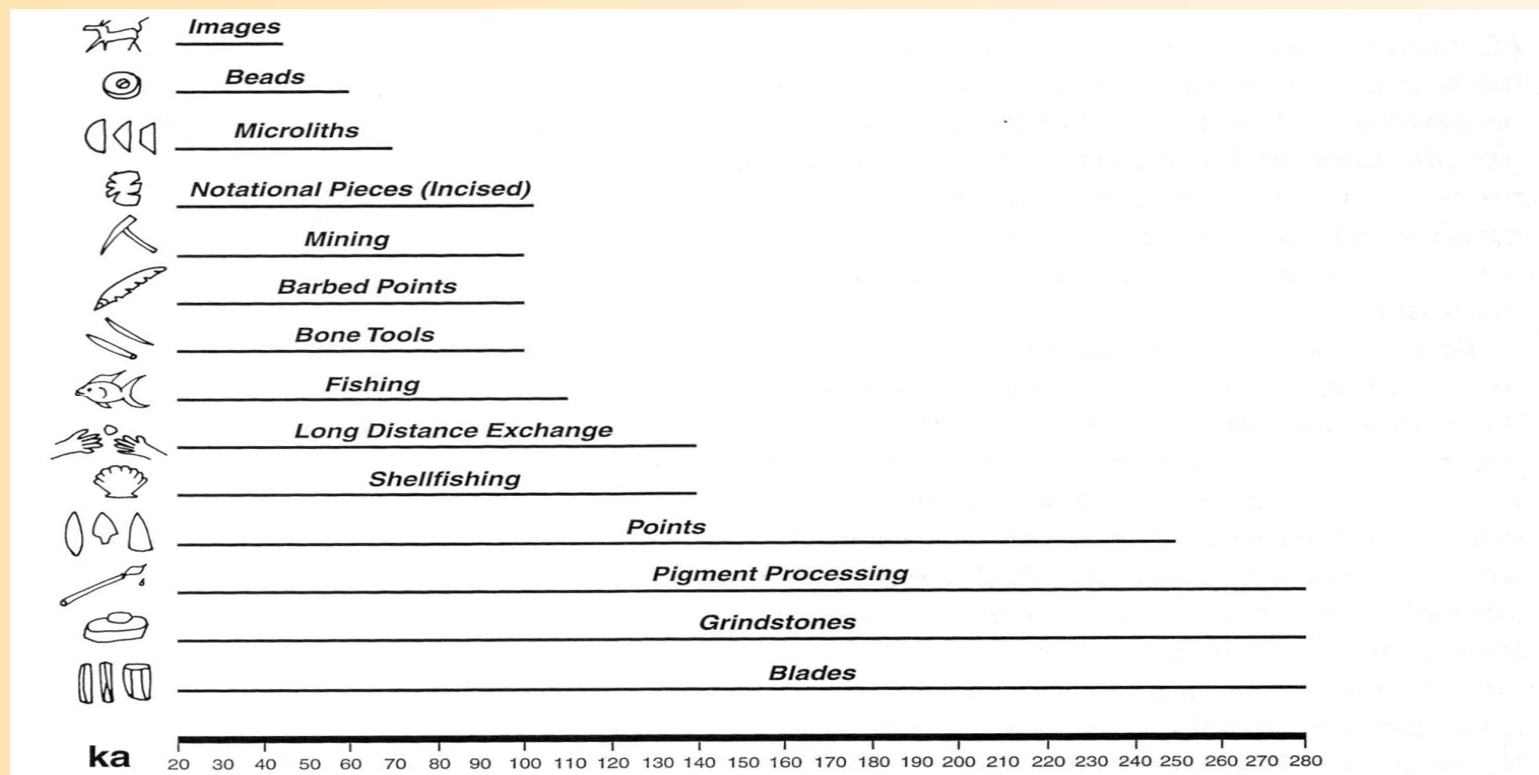
- 1 Million at 50.000 BP
- 10 Millions at 10.000 BP
- Situation in Africa :
 - Less than 1 M at 50.000 BP
 - Around 2M (?) at 10.000 BP

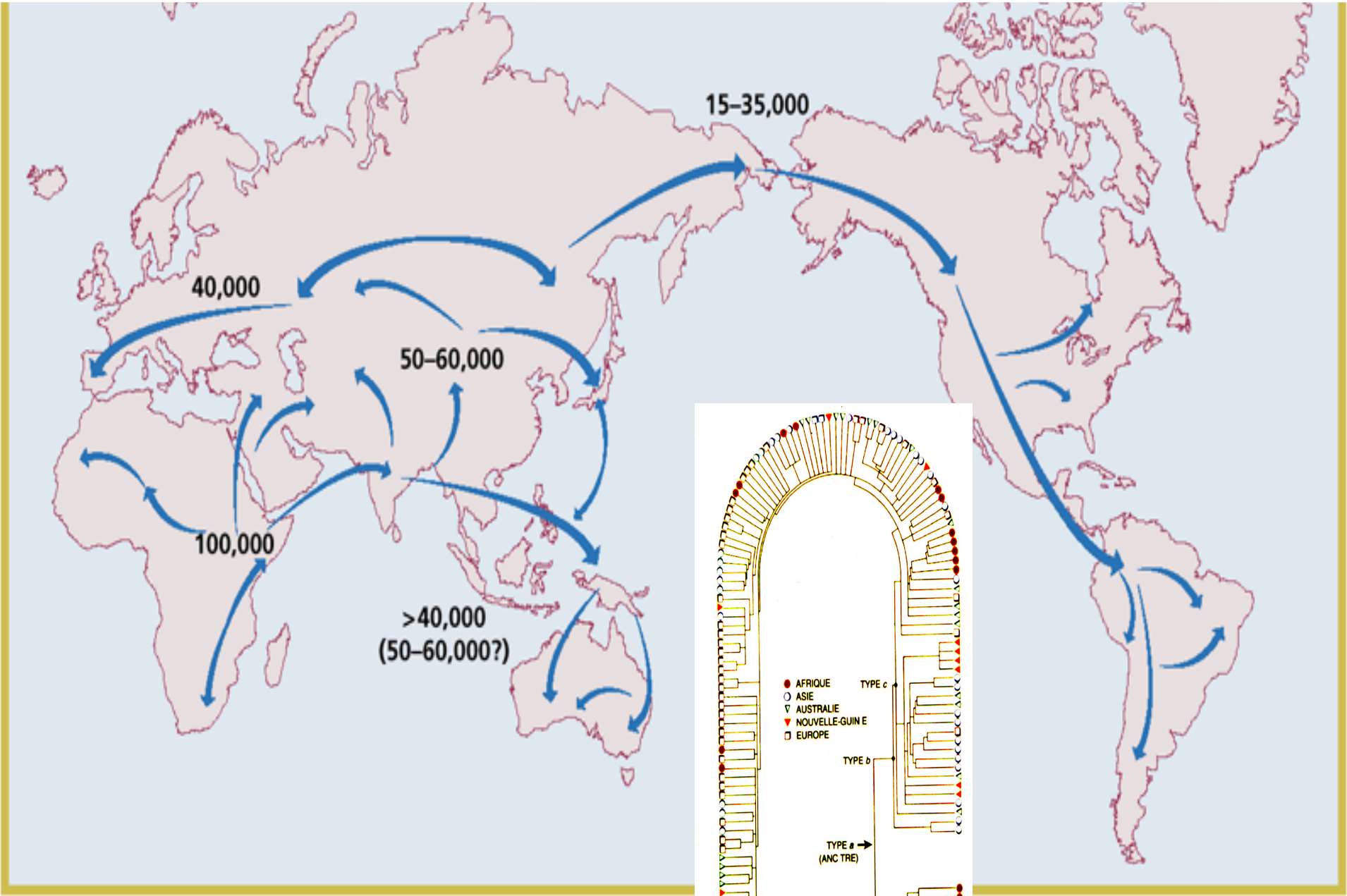
Number of languages in Africa between 50 and 10.000 BP

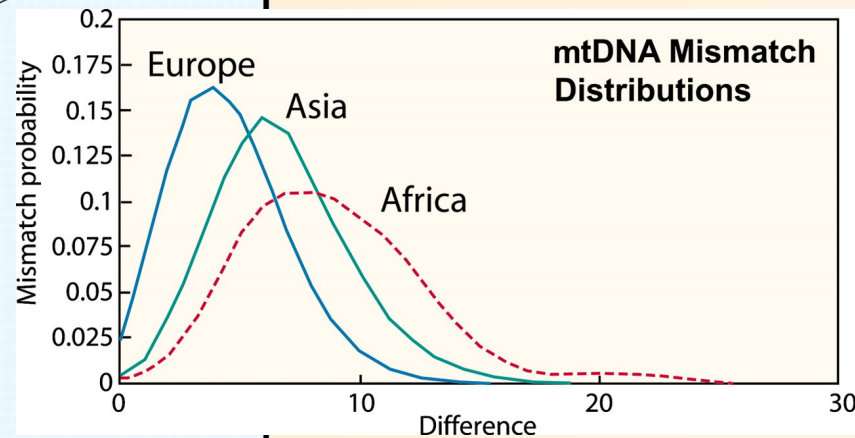
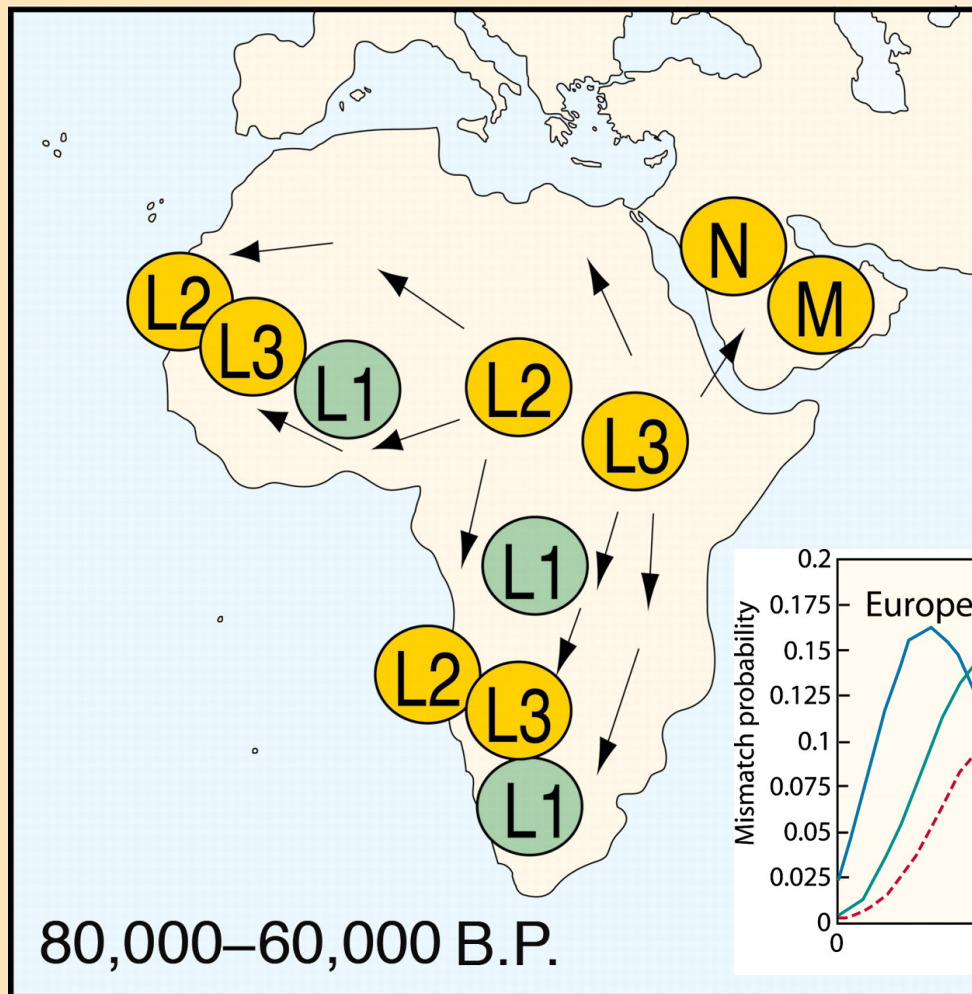
- « Family » units : 25 individuals
 - Regular interactions : 100 individuals
(dialect level)
 - Irregular interactions : 1000 individuals
(language level)
- 1M individuals = 1000 languages
2M individuals = 2000 languages



Behavioral Innovations of the Middle Stone Age in Africa







D'après Mellars 2006

Proto- Grassfields roots not found in North-West Bantu (zones A/B/C)

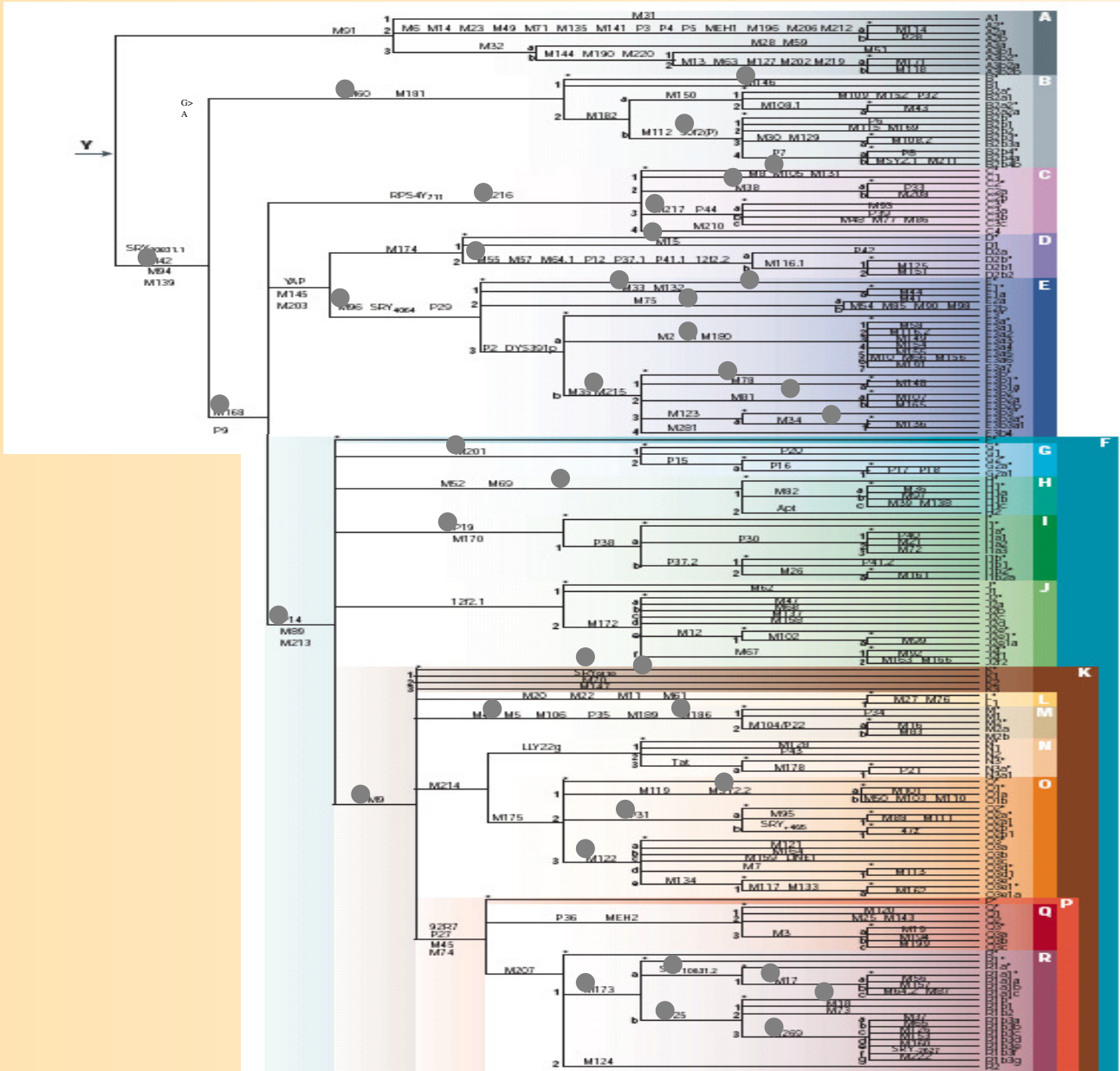
- PG *-dini "bamboo" might be cognate with *-dàngí found exclusively in zones E, G N and P
- PG *njàm "axe" might be linked with *-jèmbè / *-gèmbè "hoe"
- PG *tém "clear bush" (also found with the meaning "cut" in Efik)

Efik roots not found in North-West Bantu (zones A/B/C)

- Efik bɔp "bind" attested exclusively in the East
- Efik dɔŋ "to pack" is identical to *-dɔŋ- ("id.") found in the south but not in A/B/C (nor Eastern Africa, so... !)
- Efik fori "strip off" looks reasonably like *-pùd- ("id."), found everywhere but zones A and B –
- Efik tat "untie" is likely to be cognate with *-tátud-
- Efik te "to say" (also in Nkonya and Tiv) is obviously related to *-tɪ "id." not found in A nor B, but in C32 and C71 - widespread in the East
- Efik funj "to fan" looks like *-pùŋg- ("id."),

Tiv roots not found in North-West Bantu (zones A/B/C)

- Tiv atfo "grass" might be related to *-cúá
- Tiv ləxəm "be slack" is surely related to *-dèg-
- Tiv de "leave" is perhaps related to *-dèk-
- Tiv gɔv "bend" probably related to *-gòòb-
- Tiv kwə "crack" related to *-kùà
- Tiv hidə "come back" perhaps related to *-pìduk-



A
 B
 B2b
 E
 E1
 E2
 E3a
 E3b1
 G
 R1

Results from Y chromo analysis

- **Presence of haplogroup R**
(including haplogroups R1b and R1*)
in 5 populations : Fang, Punu, Teke, Obamba
and Ndumu (Comas et al, in preparation)
- **This clade is not found ...anywhere else in
Africa, with the likely exception of Egypt (at
13%; see Scozzari et al.1999) but it occurs in
north Cameroon at a frequency of 40%. »**
From Salas et al. 2002, AJHG, 1107

Haplogroup R

- **This clade is not found ...anywhere else in Africa, with the likely exception of Egypt (at 13%; see Scozzari et al.1999) but it occurs in north Cameroon at a frequency of 40%. »**

From Salas et al. 2002, AJHG,

1107

