Bantu Expansion and Hunter-gatherers

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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)
How ancient is banana cultivation?

Ancient?

- Greatest diversity of « plantains » (AAB group) in central Africa: introduction before 1000 BC (de Langhe)
- Banana phytoliths at 500 BC in southern Cameroon (Mbida et al, 2000) and at 3300 BC (?) in Uganda
- Crops of African origin (bulrush millet, sorghum, finger millet) found in India from 2nd Millenium BC: reverse route possible for bananas, cocoyams, sugar-cane and water yam?

Linguistic evidence: 3 stems: *-kə́ (CS 1090), *-kə́ndè́ (CS 1144), *-kə́ndè́ / *-ŋkə́ndè́ (CS 1146)
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**
  *-yáti

- **African Elephant**
  *-jògù

- **Bat**
  *-déma, *-díma

- **Pangolin**
  *-kákà

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

- Black-fronted duiker (*Cephalophus nigrifons*)
  - mbí

- Yellow-backed duiker (*Cephalophus sylvicultor*)
  - jìbù / bìmbà

- Water chevrotain (*Hyemoschus aquaticus*)
  - yìdi / yìncìgò

- Golden cat (*Profelis aurata*)
  - bùà

- Gorilla (*Gorilla gorilla*)
  - gidà / bóbó
Fish names

- Only 3 reconstructible stems for freshwater species:
  - *-kùŋgá Protopterus and Polypterus spp.
  - °-gòdà Clarias spp.
  - °-kèkè 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)
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
Linguistic Groupings of Hunter-gatherers

- Bantu (Niger-Congo)
- Ubangi (Niger-Congo)
- Central Sudanic (Nilo-Saharan)
- Eastern Sudanic (Nilo-Saharan)
- Cushitic (Afro-Asiatic)
- Khoë-San
- Unclassified
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 (Mongo) (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
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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

- Among Pops: 8%
- Within Pops: 92%

Percentages of Molecular Variance in Bantu-speakers agriculturalists

- Among Pops: 1%
- Within Pops: 99%

Percentages of Molecular Variance in Pygmy hunter-gatherers

- Within Pops: 51%
- Among Pops: 49%
Haplogroup L1c
Population relationships: entire collection

Principal Coordinates

14% Coord. 2

75% Coord. 1

Highly homogeneous groups of Bantu-speaking agriculturalists

Eastern Pygmies

Western Pygmies
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
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)
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- Derek Nurse (Eastern Africa)
- Lluis 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 millennium BC along the coast (and 4th millennium 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

Present Potential Vegetation
- Mediterranean forest
- Mediterranean scrub
- Recolonizing forest mosaic
- Montane forest
- Extreme desert
- Semi-desert
- Grasslands
- Savanna (a few trees)
- Scrub
- Woodland (open canopy)
- Woodland (closed canopy)
- Tropical rainforest
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

(After McBrearty & Brooks 2000)
D’après Mellars 2006
Proto-Grassfields roots not found in North-West Bantu (zones A/B/C)

- PG *-dìnì "bamboo" might be cognate with *
  -dàngí found exclusively in zones E, G N and P;
- PG *njàng "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 đɔŋ "to pack" is identical to *-dɔŋɡ- ("id.") found in the south but not in A/B/C (nor Eastern Africa, so... !)
- Efik fori "strip off" looks reasonably like *-puɗ- ("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 fuŋ "to fan" looks like *-pʊŋɡ- ("id."),
Tiv roots not found in North-West Bantu (zones A/B/C)

- Tiv atʃo "grass" might be related to *-cùá
- Tiv ləɣəm "be slack" is surely related to *-dèɡ-
- Tiv de "leave" is perhaps related to *-dèk-
- Tiv gɔn "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%.

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