

## Phylogeography of the Bantu Expansion

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Bantu expansion is among the most important and least understood human migrations. Bantu-speaking populations, which amount today to 240 million people, speaking around 500 languages, and spanning through 9 million square kilometers [1] are the result of a huge migration originating in a homeland near the border of Nigeria and Cameroon [2] between 4,000BP and 5,000BP [3,4].

There is robust evidence [5,1,6,7,8] that the expansion of Bantu-speakers into the broad area occupied today was predominantly due to an actual movement of people, not a language shift. Although the location of the homeland and the time depth of Proto-Bantu are well established, the main uncertainty is the precise migration route taken.

Recent phylogenetic studies [1,9,6,7,8] support the late-split [10,11,12,13,14], which claims that East-Bantu and West-Bantu languages' common ancestor crossed the African Rainforest, splitting after this. It is thought that this crossing was made through the Sangha River Interval (SRI), a N-S savanna opening into the rainforest. However, in dated phylogenies [7], dates don't match consistently: They should have crossed this corridor around 4,000BP, while it was completely open only 2,500BP.

We propose two different hypotheses for competing with the traditional SRI late-split. The first, that they used the savanna corridor opened along the coast of Gabon 4,000BP [15], instead of the SRI. The second, that they have crossed the rainforest, but a millennium before the opening of the SRI.

We compare the three hypotheses with a Bayesian phylogeographic approach based on linguistic trees. We use lexical and geographical data for 400+ Bantu and Bantuoid languages, inferring the linguistic and geographic history in parallel, by implementing the break-away model [16] in BEAST2 [17]. We conclude that the way through the rainforest happened indeed around 4,000BP.

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