

Out of Africa? Data fail to support language origin in Africa

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Last year, a report claiming to support the idea that the origin of language can be traced to West Africa appeared in *Science*. The article caused quite a stir. Now linguist Michael Cysouw from Ludwig-Maximilians-Universitaet in Munich has challenged its conclusions, in a commentary just published in *Science*.

In the beginning was the word – yes, but where exactly? Last year, Quentin Atkinson, a cultural anthropologist at Auckland University in New Zealand, proposed that the cradle of language could be localized in the southwest of Africa. The report, which appeared in *Science*, one of the world's leading scholarly journals, was seized upon by the media and caused something of a sensation. Now however, [linguist](#) Michael Cysouw from Ludwig-Maximilians-Universitaet (LMU) in Munich has published a commentary in *Science* which argues that this neat "Out-of-Africa" hypothesis for the origin of language is not adequately supported by the data presented. The search for the site of origin of language remains very much alive.

Atkinson based his claim on a comparative analysis of the numbers of phonemes found in about 500 present-day languages. Phonemes are the most basic sound units – consonants, vowels and tones – that form the basis of semantic differentiation in all languages. The number of phonemes used in natural languages varies widely. Atkinson, who is a biologist and psychologist by training, found that the highest levels of phoneme diversity occurred in languages spoken in southwestern Africa. Furthermore, according to his statistical analysis, the size of the

phoneme inventory in a language tends to decrease with distance from this hotspot. To interpret this finding Atkinson invoked a parallel from population genetics. Biologists have observed an analogous effect, insofar as human genetic diversity is found to decrease with distance from Africa, where our species originated. This is attributed to the so-called founder effect. As people migrated from the continent and small groups continued to disperse, each inevitably came to represent an ever-shrinking fraction of the total genetic diversity present in the African population as a whole.

So does such a founder effect play a similarly significant effect in the dispersal and differentiation of languages? Michael Cysouw regards Atkinson's finding as "artefactual". Cysouw, whose work is funded by one of the prestigious Starting Grants awarded by the European Research Council (ERC), heads a research group that studies quantitative comparative linguistics in LMU's Faculty of Languages and Literatures. He says he has no objection in principle to the use of methods borrowed from other disciplines to tackle questions in linguistics, but that problems arise from their inappropriate application. For example, he finds that if Atkinson's method is employed to examine other aspects of language, such as the construction of subordinate clauses or the use of the passive mood, the results "do not point in the same direction".

Indeed, in their article in *Science*, Cysouw and his coauthors Steven Moran (LMU) and Dan Dediu of the Max Planck Institute for Psycholinguistics in Nijmegen show that, depending on the features considered, Atkinson's method places the site of origin of language in eastern Africa or the Caucasus or somewhere else entirely. As Cysouw points out, linguists have long sought to throw light on the origin of language by analyzing patterns of [language](#) distribution. The problem is that such relationships can be reliably traced only as far back as about 10,000 years before the present. (math/PH)

More information: *Science*, 02/10/2012.

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