

The sound systems of Rift Valley languages: New perspectives on their form and evolution

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The study of contacts and long-term comparisons of the sound systems of Rift Valley languages, when viewed through a biomechanical lens, provides new perspectives on the origin and development of these sound systems. The Eastern Rift, geographical area in Tanzania, is the only place on the African continent where the continent's 4 major language families (Khoesan, Niger-Congo, Afro-Asiatic and Nilo-Saharan) are in contact. These languages are spoken by hunter gatherers, pastoralists and farmers. Their contact results from the historical eastward and southward migration of populations speaking Cushitic, Nilotic and Bantu languages, [1]. The current linguistic diversity of this region masks an older variety whose remnants are isolates that are not related to major linguistic phyla such as Hadza in Tanzania and unclassified Southern Omotic in southern Ethiopia. It is likely that other languages with clicks were once spoken in East Africa. Dahalo, the Cushitic language of a group of hunter-gatherers from Kenya, which has a click, shows that they probably once spoke a click language [2]. In East Africa, there are small groups of (former) hunter-gatherers (Okiek, Akie) who have words that could relate to these early inhabitants.

The Western Rift geographical area shows contact between 3 of the major language families but not Khoesan. These languages are spoken along the great lakes as far south as the Great Rift Fault in Malawi. The labio-dorsal consonants [kp, gb, gɓ, kɓ, qɓ, ɔɓ] [3] and implosive [ɓ, ɓ̥, d̥, d̥̥, f̥, f̥̥, g̥, g̥̥] [4] which are found in the languages of Western Rift peoples show that their initiation mechanism is partly similar or related to that of clicks. Some Bantu languages south of the Western Rift also have clicks. The question of the origin of clicks in Bantu languages is important to understand, contact? innovation?

It is possible to hypothesize that the sound systems that meet in the two branches of the Rift presenting non-pulmonic and labio-dorsal consonants result from biomechanical mechanisms linked together. In the idea of a complexification of sound systems, we can also hypothesize that clicks derive from the use of movements initially intended for swallowing and show increased control (specialization) of these movements for the purposes of communication [5], [6]. The production of clicks, for example [!, !ʔ, !h, ŋ!], ejectives like [cʔ́, kĹ, tʔ́] and labio-dorsal consonants [kp, gb, qɓ] would thus be based on the reuse and the specialization of movements produced in swallowing mechanisms. Several other important issues are associated with the production of sounds in Rift languages. Does the rarity of clicks in languages result from the abandonment of old features produced in sound systems, which have now disappeared, as has sometimes been suggested [7]? What similarities and differences are there between the clicks of the Southern Khoesan languages and those of the Rift in Tanzania? Is there a mechanical link between the different non-pulmonic consonants, i.e. clicks, ejectives and implosives? The presence of the Sandawe in Tanzania leads us to consider an ancient Khoesan presence as far away as East Africa. The rejected membership of Hadza in the Khoesan family leads to the hypothesis that other linguistic families, now extinct, were in contact with the Khoesan languages. The Hadza isolate would be a final witness [8]. Examination of the mechanisms of production of clicks and ejectives in Hadza and Iraqw suggests links in the production and perception of these sounds. These observations show sound production mechanisms probably resulting from processes of complexification and adaptation to new biomechanical and environmental constraints (in the social sense). Based on these observations, it is possible to propose

hypotheses on the role of non-pulmonic consonants as markers in the history of the languages of this region of Africa.

References

- [1] Philippon, G. (2009). Langues et histoire dans le rift. In B. Hirsch et B. Roussel (2009). *Le Rift est-africain. Une singularité plurielle*. Marseille. Publications scientifiques du MNHN. 367-376.
- [2] Nurse, D. (1986) Reconstruction of Dahalo history through evidence from loanwords. *Sprache und Geschichte in Afrika* 7. 267-305.
- [3] Demolin D. and Soquet A. (1999). Double articulations in some Mangbutu-Efe languages. *Journal of the International Phonetic Association*, 29, 2. 143-154.
- [4] Demolin, D. (1995). The phonetics and phonology of glottalized consonants in Lendu, *Papers in Laboratory Phonology 4*, B. Connell and A. Arvaniti (Eds.), Cambridge University Press. 368-385.
- [5] Demolin, D, Kingston, J. & Ciciu M. (ms). Evolution and innovation of non-pulmonic consonants.
- [6] Sands, B., & Güldemann, T. (2009). What click languages can and can't tell us about language origins. In R. Botha & C. Knight (Eds.), *The cradle of language* (Vol. 2). Oxford University Press. 204-218.
- [7] Knight, A., Underhill, P.A., Mortensen, H.M., Zhivotovsky, L.A., Lin, A.A., Henn, B.M., Mountain, J. L. (2003). African Y chromosome and mtDNA divergence provides insight into the history of click languages. *Current Biology*, 13. 464-473.
- [8] Sands, B. (1998). *Eastern and Southern African Khoisan: Evaluating claims of distant linguistic relationship*. Cologne: Rüdiger Köppe Verlag.