

# **Andean and Eastern Plains Languages of Colombia: A proposal of Sound Alternations classifications with and without georeferentiations**

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The most known classifications in Phonological Typology are established in terms of two classes of variables: contrastive unities (Greenberg, 1963; Maddieson, 1984) and sound features (Hyman, 2008; 2014). However, it exists a third option: based on sound alternations (Donegan & Stampe, 2009; Donegan & Nathan, 2015; Oñederra *et al.*, 2014; Dziubalska-Kołaczyk, 2019). This is characterized by recognizing the source of different sound products in a language, if the segmental or prosodic results came from the activity or inhibition of phonological processes and, if the second one is true, to figure out the presence or absence of meaning restrictions, which is mainly morphological. The present research exposes two classes of observations from the last theoretical position: without georeferentiations (only arrangements in strict sound ontology) and with this (areal divisions) applied to Indigenous Languages of Colombia (González de Pérez & Rodríguez de Montes, 2000), especially, 23 of them, which are spoken from Andean (Adelaar & Muysken, 2004) and Eastern Plains (Van Gijn *et al.*, 2017) regions. These languages belong to families such as Arawak, Chibchan, Guahibo, Choco, Caribe, Saliba or Isolated. For the first observations, the Unweighted Pair Group Method with Arithmetic mean (UPGMA) in combination with Pearson coefficient and Euclidean distance found in Garcia-Vallvé and Puigbo (2016 [2002]) are used, while the Ward grouping for minimum divisions and Fuzzy Clustering for recognizing more concrete regions through Nerbonne *et al.* (2018 [2011]) are used for areal phonology results. Such methods were applied to 75 phonological variables in each case. Languages of Chibchan Family, such as Kogui and Ika, keep similarities with languages of Guahibo Family respect to the activity of context-sensitive phonological processes. However, these last languages constitute a convergent phonologic area with Tinigua. The most different languages in ontological as areal classifications are Wayuunaiki and Nasa Yuwe, which bear suppressions of context-free processes in conjunction with the absence of meaning restrictions in vowels and consonants.

**Keywords:** Andean and Eastern Plains Languages of Colombia, Sound alternations, Classifications with georeferentiation, Classifications without georeferentiation.

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