

## **Dialectometry in Brittany: A new application of the Damereau-Levenshtein algorithm to the Breton speaking area**

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Dialectometry's objective, as envisaged by its initiators (Séguy 1971 and 1973, Guiter 1973), is to quantify linguistic variation with the help of mathematical tools.

This approach can take into account in detail the discrepancies or the similarities between the dialects studied, but also helps to visualize them on maps and tables.

We offer here to adopt such an approach to study dialect variations within an area situated in the Finistère and Côtes d'Armor départements, at the heart of the Breton-speaking area (I.E., Celtic, Western France) using the data found in the *Nouvel Atlas Linguistique de la Basse-Bretagne* (New Linguistic Atlas of Lower Brittany).

To measure the linguistic distance between different points within that area, we shall use a derivative of the Damerou-Levenshtein algorithm versions which allows us to accurately measure the number of changes required to pass from one string of characters to the other. Using this technique we can also return the values of the various characters so as to allow statistical treatments. In order to describe in detail the sources of linguistic distance from a quantitative, but also from a qualitative, point of view, we focus on the total number of identifiable operations between the various segments of the corpus from a phonetic viewpoint.

Such an approach can reveal whether the linguistic distance is due to the mere repetition of the same phenomenon or if it results of successive changes. If so it is thus interesting to describe the facts on which linguistic distance is based. Such a method will moreover allow us to find out to what extent it affects understanding between speakers of different dialects.