

Mapping the world's linguistic diversity—scientists discover links between your genes and the language you speak

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Academics at the University of York have discovered a correlation between genetic and linguistic diversity and concluded that at least in Europe people who speak different languages are also more likely to have a different genetic make-up.

The study, led by Professor Giuseppe Longobardi in York's Department of Language and Linguistic Science, in collaboration with geneticists and linguists at the Universities of Ferrara and Modena and Reggio Emilia in Italy, has discovered that language proves a better predictor of [genetic](#)

[differences](#) than the geographical distribution of population.

As part of his study he observed significant correlations between genetic and linguistic diversity across the Indo-European and non-Indo-European-speaking populations of Europe.

Professor Longobardi said: "To a very large extent linguistic differences correspond to genetic differences in the relevant populations. So, if a population speaks French and another speaks Russian they have a certain degree of [linguistic diversity](#), that we can now measure with unprecedented precision and the degree of genetic diversity is proportional.

"Is it the case that the French and Italians and Spanish, who speak very close languages, are really similar to each other in genetic terms? Is it really the case the Japanese, and say a population from Sub Saharan Africa, are really very different both in terms of language and in terms of their genetic ancestry? To some extent our answer, based on the published study and further work in progress, is yes: at least as a general historical rule."

However, Professor Longobardi said there are exceptions, as to many rules, and the exception in Europe is the Hungarians, who are genetically very similar to Slavic and Germanic populations.

"That's one case where some populations of central Europe just picked up a new language which was brought in to Hungary by a small group of conquerors.

"But apart from that exception the distribution of languages and the distribution of the genetic structure of the populations in Europe tend to correspond to each other," he added.

The study, published in the *American Journal of Physical Anthropology*, suggests that migrating populations carried their genes alongside their language, rather than just a cultural diffusion of linguistic features from one population to another.

The project involved studying around 15 European languages but researchers are turning their attention to other languages, extending potentially to a global scale.

The research could eventually help scientists pinpoint when and how Indo-European languages were brought into Europe and potentially help geneticists in the future.

Professor Longobardi added: "Ultimately being able to identify the ancestry of a [population](#) just on the simple basis of the [language](#) they speak may benefit identifying genetic properties of these populations, which could ultimately be of practical use even for medical research."

More information: *American Journal of Physical Anthropology*, onlinelibrary.wiley.com/doi/10.1002/ajpa.22758/pdf

Provided by University of York

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