

# Physicists create tool to foresee language destruction impact and thus prevent it

July 25 2014

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There have been numerous cases of cultural changes throughout history. Either by imposition or assimilation, cultural traits are transmitted between neighbouring regions and often one replaces the original cultural traits of the other. Physicists Joaquim Fort, from the University of Girona (UdG), and Neus Isern, from the Universitat Autònoma de Barcelona (UAB), are experts in modelling these phenomena by adequately representing a reality.

In this occasion, the researchers applied their expertise to the area of [language](#) substitution, i.e. when the language of one region comes under the influence of the language of a neighbouring region considered to be at a greater social and economic advantage. The model helps to estimate the degree to which the languages are under threat and, therefore, are useful in designing actions to control or reverse language diversity destruction.

Researchers analysed the case of Welsh and its deterioration. Isern and Fort verified how, from 1961 to 1981, English took over Welsh and became the main language of communication. The researchers described the evolution in number of speakers, by reproducing the decrease over time in speakers of the [native language](#) as they substituted Welsh for the neighbouring language, English.

In this research, the physics defined parameters which allow them to estimate the speed - in kilometres per year - in which the stronger language expands geographically over the native language. Their work

has also focused on observing the evolution of other languages such as Quechua and Scottish Gaelic. Neus Isern explains that "these parameters can be applied to languages spoken in countries where the governments are not concerned about their conservation, while they are more difficult to use with languages such as Catalan, which is protected under a series of linguistic policies".

In a wider context, this type of model could be applied to other examples of cultural changes in which the more favourable traits expand and abolish the predominance of a native cultural trait.

**More information:** The article Language Extinction and Linguistic Fronts can be read at: [rsif.royalsocietypublishing.org ... /11/94/20140028.full](https://royalsocietypublishing.org/journal/rsif/11/94/20140028.full)

Provided by Universitat Autònoma de Barcelona

Citation: Physicists create tool to foresee language destruction impact and thus prevent it (2014, July 25) retrieved 26 April 2024 from <https://phys.org/news/2014-07-physicists-tool-language-destruction-impact.html>

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