# Dynamics of Language Death

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# Abstract

The world’s languages are dying at an alarming rate, it is expected that 90% of them will be extinct with the current generation. We are attempting to model the language death on the following basis.

Assumptions made:

1. We assume that the language in itself is constant, ignoring the grammar, syntax and other language rules that need to be learnt for knowing the language. Effectively we assume that learning any language is as difficult as learning any other language.
2. We assume that languages compete with each other only for speakers.
3. We assume a highly connected population.
4. We assume that the population has no spatial or social structure and does not differ in these parameters.
5. We assume that every speaker is monolingual at any given time.

Modelling two competing languages:

1. We consider two competing languages, and .
2. Every language has an attractiveness value that depends upon its number of speakers and its perceived status which is influenced by how useful it is socially and economically.
3. A speaker converts from to with a probability, per unit of time, of where is a fraction of the population speaking and is a measure of ’s relative status.

References

[www.math.uh.edu/~zpkilpat/teaching/math4309/project/nature03\_abrams.pdf](http://www.math.uh.edu/~zpkilpat/teaching/math4309/project/nature03_abrams.pdf)

<https://www.chapman.edu/ces/_files/phd-education/esc-I-papers/Shukla_Language%20Extinction.pdf>

<http://guava.physics.uiuc.edu/~nigel/courses/569/Essays_Fall2009/files/liu.pdf>

<http://www.usc-vlcg.es/sle_workshop.pdf>