

Linguistic complexity: Interactions within the language system and relations to population size

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Language can be viewed as a complex, dynamic, and self-organizing system composed of numerous interacting parts. The complexity of such a system is often characterized by the number of parts and the interactions among and within them. Here, I present interactions between key linguistic variables including phoneme inventory size, syllable size, word length, and clause length. Analyzing textual data from 61 languages, I identify complexity trade-offs – for example, between phoneme inventory size and the mean length of words and clauses measured in syllables. Additionally, by correlating linguistic complexity metrics with estimated speaker population sizes, I find that languages spoken by larger populations tend to have more phonemes per syllable, a higher frequency of monosyllabic words, and a greater average number of words per clause. The study also replicates previous findings indicating a positive relationship between population size and phoneme inventory size.

Finally, I briefly discuss open questions, such as how to assess language complexity and whether the observed trade-offs imply that all languages are equally complex.

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