

Zipf's law in aphasic speech

An investigation of word frequency distributions

Word frequencies in a text follow a curious pattern. A few of them appear extremely frequently, while by far most of them appear only once or twice. This pattern is considered a law of word frequencies, and better known as Zipf's law. The existence of this law has been known for more than a century. And yet it is still largely covered in a veil of mystery.

This dissertation aims to somewhat lift that veil. It presents a thorough discussion of the hypotheses for the existence of Zipf's law. It is shown how the values of the parameters of Zipf's law vary depending on medium (written or spoken) and text length. These insights are then used to study Zipf's law in different types of aphasic speech: in long samples from Dutch non-fluent aphasic speakers and in short samples from English, Greek and Hungarian fluent and non-fluent aphasic speakers. It is shown that aphasia influences the values of the parameters, as does the language under consideration. But in all cases, Zipf's law continues to apply. This finding strengthens the hypothesis that the system for word retrieval in aphasia is still intact.

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