

Abstract Submitted
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The Growth Dynamics of Words: How Historical Context Shapes the Competitive Linguistic Environment JOEL TENENBAUM, Center for Polymer Studies, Department of Physics, Boston University, Boston, MA, ALEXANDER PETERSEN, IMT Lucca Institute for Advanced Studies, Lucca 55100, Italy, SHLOMO HAVLIN, Minerva Center and Department of Physics, Bar-Ilan University, Ramat-Gan 52900, Israel, H. EUGENE STANLEY, Center for Polymer Studies, Department of Physics, Boston University, Boston, MA — Using the massive Google n-gram database of over 10^{11} word uses in English, Hebrew, and Spanish, we explore the connection between the growth rates of relative word use and the observed growth rates of disparate competing actors in a common environment such as businesses, scientific journals, and universities, supporting the concept that a language's lexicon is a generic arena for competition, evolving according to selection laws. We find aggregate-level anomalies in the collective statistics corresponding to the time of key historical events such as World War II and the Balfour Declaration.

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