

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Assessing Integrative Complexity as a Measure of Morphological Learning

Permalink

<https://escholarship.org/uc/item/6c4955sx>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 41(0)

Authors

Johnson, Tamar
Culbertson, Jennifer
Rabagliati, Hugh
et al.

Publication Date

2019

Peer reviewed

Assessing Integrative Complexity as a Measure of Morphological Learning

Tamar Johnson

University of Edinburgh, Edinburgh, United Kingdom

Jennifer Culbertson

University of Edinburgh, Edinburgh, United Kingdom

Hugh Rabagliati

University of Edinburgh, Edinburgh, United Kingdom

Kenny Smith

University of Edinburgh, Edinburgh, United Kingdom

Abstract

Morphological paradigms differ widely across languages in their size and number of contrasts they mark. Recent work on morphological complexity has argued that certain features of even very large paradigms make them easy to learn and use. Specifically, Ackerman & Malouf, 2013 propose an information-theoretic measure, *i*-complexity, which captures the extent to which forms in the paradigm predict each other, and show that languages which differ widely in surface complexity exhibit similar *i*-complexity; in other words, paradigms with many contrasts reduce the learnability challenge for learners by having predictive relationships between inflections. We present three artificial language learning experiments testing whether *i*-complexity in fact predicts learnability of nominal paradigms where nouns inflect for class and number. Our results reveal only weak evidence that paradigms with low *i*-complexity are easier to learn than paradigms with high *i*-complexity. We suggest that alternative aspects of complexity may have a larger impact on learning.