

Advances in Complex Systems
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UNDERSTANDING THE ORIGINS OF MORPHOLOGICAL DIVERSITY: THE LINGUISTIC NICHE HYPOTHESIS

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Received (received date)

Revised (revised date)

Human language is unparalleled in both its expressive capacity and its diversity. What accounts for the enormous diversity of human languages [13]? Recent evidence suggests that the structure of languages may be shaped by the social and demographic environment in which the languages are learned and used. In an analysis of over 2,000 languages Lupyan and Dale [25] demonstrated that socio-demographic variables, such as population size, significantly predicted the complexity of inflectional morphology: Languages spoken by smaller populations tend to employ more complex inflectional systems. Languages spoken by larger populations tend to avoid complex morphological paradigms, employing lexical constructions instead. This relationship may exist because of how language learning takes place in these different social contexts [44, 45]. In a smaller population, a tightly-knit social group combined with exclusive or almost exclusive language acquisition by infants permits accumulation of complex inflectional forms. In larger populations, adult language learning and more extensive cross-group interactions produce pressures that lead to morphological simplification. In the current paper, we explore this learning-based hypothesis in two ways. First, we develop an agent-based simulation that serves as a simple existence proof: As adult interaction increases, languages lose inflections. Second, we carry out a correlational study showing that English-speaking adults who had more interaction with non-native speakers as children showed a relative preference for over-regularized (i.e., morphologically simpler) forms. The results of the simulation and experiment lend support to the *linguistic niche hypothesis*: Languages may vary in the ways they do in part due to different social environments in which they are learned and used. In short, languages adapt to the learning constraints and biases of their learners.

Keywords: language change; social structure; morphology; agent-based simulation.

1. Introduction

Languages differ greatly in their degree of morphological complexity [17]. At the one extreme are languages in which semantic distinctions are made almost exclusively