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The Social Network Dynamics of Category Formation

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Abstract

How do societies develop categories for continuous sets of novel phenomena, as in the domains of art and technology? Seminal work in the nativist tradition argues that given the same stimuli, people can independently produce the same categories as a result of universal cognitive constraints. These constraints are said to account for cross-group coherence, where distinct communities and cultures have been shown to arrive at highly similar categories. Cross-group coherence is widely seen as incompatible with functionalism, which holds that categories are defined through communication, leading to divergent category systems. Here, we use an experiment to demonstrate that communication can generate either the divergence or convergence of category systems, depending on the size of the social network (2, 6, 8, 24, and 50). We find that large social networks amplify population biases, where a subset of slightly more frequent words become exponentially more likely to spread as network size increases.