

Languages less arbitrary than long assumed

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It is a cornerstone of theoretical linguistics: the principle of arbitrariness, according to which the form of a word doesn't tell you anything about its meaning. Yet evidence is accumulating that natural languages do in fact feature several non-arbitrary ways to link form and meaning, and these are more prevalent than assumed. A new review in *Trends in Cognitive Sciences* presents a comprehensive case for supplementing the cherished principle of arbitrariness with other types of associations between form and meaning.

"It's not that arbitrariness was a bad idea. It is an important principle, but it doesn't fully explain how [words](#) work," says Mark Dingemans, language scientist at the Max Planck Institute for Psycholinguistics and lead author on the paper. The authors review accumulating findings from across the cognitive sciences suggesting that the principle of arbitrariness needs to be supplemented by at least two further types of relations between form and meaning.

One of these is iconicity, which is when the form of words suggests aspects of their meaning. Iconicity is more widespread in vocabulary than often assumed: it is common in signed languages but also in ideophones, vivid sensory words found in many of the world's spoken languages. For instance, many people share the intuition that a word like 'pumbuluu' is more likely to mean 'fat' rather than 'slim'. Iconicity can help in learning and communication, though not all meanings can be iconically expressed.

Another is systematicity, which involves a statistical relationship between the sound patterns of a group of words and their grammatical usage. Research by co-authors Padraic Monaghan and Morten Christiansen has shown that subtle patterns in the sounds of words can help speakers to distinguish nouns from verbs in Japanese, English, Dutch and French. For instance, verbs in English tend to be somewhat shorter on average than nouns. Such subtle differences can help people to learn the grammatical categories of their

language.

A key contribution of the paper is to consider how the three form-to-meaning correspondences can coexist in language. Research shows that each of them provides distinct advantages in language processing, learning and communication, and this is the key to their coexistence. "Words are not just abstract ideas," says Dingemans. "They are tools, and the way they are learned and used influences their shape." New research from the sprawling field of cultural evolution—which studies how cultural items evolve over time—can help to explain the patterning of arbitrariness, iconicity and systematicity in vocabulary, the international team of authors suggest.

The paper was written by Dingemans with Damián Blasi of the MPI for Mathematics in the Sciences & MPI for Evolutionary Anthropology, Gary Lupyan of the University of Wisconsin-Madison, Morten Christiansen of Cornell University & the University of Southern Denmark, and Padraic Monaghan of Lancaster University. Between them, the authors cover a broad swathe of fields in the cognitive sciences, from linguistics and experimental psychology to cultural evolution, mathematics, and language typology. Blasi: "To bring together findings from so many disparate literatures, you need a team like this. The language sciences are increasingly interdisciplinary."

Three takeaways about the research:

- Language is less arbitrary than assumed: the sounds and shapes of words can reveal aspects of [meaning](#) and grammatical function
- The paper captures an emerging consensus in the field that arbitrariness is necessary, but not sufficient to account for vocabulary structure
- Written by a team of experts representing 7 academic institutions worldwide.

More information: "Arbitrariness, Iconicity and

Systematicity in Language." *Trends in Cognitive Sciences*. DOI: [10.1016/j.tics.2015.07.013](https://doi.org/10.1016/j.tics.2015.07.013)

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