

Finding iconicity in spoken languages

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Have you ever wondered why we call a dog a dog and not a cat? Is this an arbitrary decision, or is it based on iconicity—the resemblance between word structure and meaning? New research shows that for Indo-European languages, like English and Spanish, iconicity is more common than previously believed.

The results are important for understanding the nature of [human language](#), explains Lynn Perry, assistant professor of psychology in the University of Miami College of Arts & Sciences and co-lead author of the study.

"Many linguists are trained to believe that languages are arbitrary," Perry said. "But sometimes what we as scientists accept as fact leads us to miss out the rich details of experiences," she said. "We treat learning as this impossibly difficult process because we assume languages are completely arbitrary, but it turns out there's a lot of structure and information in the language itself that could be making learning easier."

The study is the first to show that iconicity is prevalent across the vocabulary of a spoken language, explained Marcus Perlman, postdoctoral research associate in the University of Wisconsin-Madison Department of Psychology and co-lead author of the study.

"It is the nail in the coffin for the theory that languages are essentially arbitrary," Perlman said.

Most people are familiar with onomatopoeia, words that imitate a sound; for example, *boing*—the sound of a bounce, and *zip*—the sound of moving at high speed. However, words can be imitative or iconic of many different kinds of meanings, not just sounds. For instance, the vowels in the word "tiny" sound small compared to the vowel in "huge," which sounds big.

"Scientists have known for a while that people are sensitive to iconicity," Perry said. "If you show people a novel pointy object and a novel round object, and ask them 'which of these is a 'kiki' and which is a 'bouba,' they are more likely to say that a pointy object is called 'kiki' and the round one is called 'bouba,' because they sound more pointy and round, respectively."

Yet, many researchers believe that unlike signed languages, most spoken languages, especially English, are essentially arbitrary. But no one had actually tested this. The current study set out to test this assumption in a rigorous, comprehensive way. The findings show that in spoken

languages, iconicity is not just present in some words and not in others. Instead, it appears in different levels throughout the vocabulary.

The findings also show that words learned in childhood are the most iconic, suggesting that iconicity plays an important role in helping children to grasp the concept of a word.

"Young children face the very considerable challenge of figuring out that all these vocalizations that the people around them are making mean something, and further, that they mean very particular things," Perlman said. "When words are iconic, the sound of the word instinctively primes its meaning, and this helps children to understand that the sound is a word with a particular meaning, and that words in general have meanings."

The study provides new information for professionals in the field of language pathology.

"Once we better understand why there's a relationship between a word's iconicity and the age at which it's acquired, our results could also have implications for interventions for children with language delays," Perry said.

For the study, the researchers developed three experiments in English and two in Spanish, where native speakers were asked to rate the iconicity of about 600 words in their respective language. The findings show that iconicity in English and Spanish varied with grammatical category. For instance, adjectives were rated as more iconic than nouns and functional words, in both languages.

Interestingly, English verbs were relatively iconic compared to Spanish verbs. The researchers attribute the disparity to semantic differences between the two languages. Many English verbs contain manner

information, which predisposes them to be more iconic than Spanish verbs, which do not. For example, in English you'd say "The bottle floated into the cave," and the verb floated describes how something moved, but in Spanish you'd say "La botella entró a la cueva flotando" (or "The bottle entered [into] the cave floating") and the verb "entró" doesn't describe how.

The study is titled "Iconicity in English and Spanish and its relation to lexical category and age of acquisition," published online by the journal *PLOS ONE*. Gary Lupyan, assistant professor of psychology at the University of Wisconsin-Madison, is also a co-author of the study.

"There are roughly 7,000 languages spoken and signed around the world, and these languages have been evolving for at least tens of thousands of years, if not many more - and we are just taking a little snap shot of two of them," Perlman said. "But this snap shot suggests that even modern spoken languages are iconic in important ways."

The findings have opened up new areas of inquiry. In the future, the researchers would like to understand why some words sound more like what they mean than others and how the iconicity of [words](#) evolves and changes over time, among other subjects.

Provided by University of Miami

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