

Words for snow revisited: Languages support efficient communication about the environment

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same term for ice, snow



different terms for ice, snow



Carnegie Mellon University and UC Berkeley researchers found a connection between temperature and snow and ice terminology, suggesting that local environmental needs leave an imprint on languages. For example, English originated in a relatively cool climate and has distinct words for snow and ice. In contrast, the Hawaiian language is spoken in a warmer climate and uses the same word for snow and for ice. Credit: Carnegie Mellon University

The claim that Eskimo languages have many words for different types of snow is well known among the public, but it has been greatly exaggerated and is therefore often dismissed by scholars of language.

However, a new study published in *PLOS ONE* supports the general idea behind the original claim. Carnegie Mellon University and University of

California, Berkeley researchers found that languages that use the same word for snow and [ice](#) tend to be spoken in warmer climates, reflecting lower communicative need to talk about snow and ice.

"We wanted to broaden the investigation past Eskimo languages and look at how different languages carve up the world into [words](#) and meanings," said Charles Kemp, associate professor of psychology in CMU's Dietrich College of Humanities and Social Sciences.

For the study, Kemp, and UC Berkeley's Terry Regier and Alexandra Carstensen analyzed the connection between local climates, patterns of [language](#) use and word(s) for snow and ice across nearly 300 languages. They drew on multiple sources of data including library reference works, Twitter and large digital collections of linguistic and meteorological data.

The results revealed a connection between temperature and snow and ice terminology, suggesting that local environmental needs leave an imprint on languages. For example, English originated in a relatively cool climate and has distinct words for snow and ice. In contrast, the Hawaiian language is spoken in a warmer climate and uses the same word for snow and for ice. These cases support the claim that languages are adapted to the local communicative needs of their speakers—the same idea that lies behind the overstated claim about Eskimo words for snow. The study finds support for this idea across language families and geographic areas.

Carstensen added, "Here, we deliberately asked a somewhat different question about a broader set of languages."

The study also connects with previous work that explores how the sounds and structures of language are shaped in part by a need for efficiency in communication.

"We think our study reveals the same basic principle at work, modulated by local communicative need," said Regier, professor of linguistics and cognitive science at UC Berkeley.

More information: *PLOS ONE* ,
[dx.plos.org/10.1371/journal.pone.0151138](https://doi.org/10.1371/journal.pone.0151138)

Provided by Carnegie Mellon University

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