

Comprehension of Non-Linguistic Vocalizations across Cultures

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It is widely observed that visual communication with gestures enables successful communication between speakers of different languages. When people lack common words to convey their meaning, they are able to improvise iconic gestures to ground communication about varied domains like actions, shape and size, and spatial relationships. This remarkable human ability is the foundation of the parlour game ‘charades,’ and it is thought to play an important role in language acquisition and evolution. But can people also innovate iconic vocalizations to communicate meanings? To find out, Perlman and Lupyan (2018) conducted a contest with a \$1000 prize that invited participants to create novel vocalizations—no words permitted—for 30 different meanings. The meanings spanned actions, humans, animals, inanimate objects, properties, quantifiers, and demonstratives. The vocalizations were evaluated by the ability of naive listeners to guess their intended meanings from multiple alternatives, with the winning submission determined as the set of 30 that was guessed most accurately. Overall, guessing accuracy was well above chance for most of the submissions and across almost all of the meanings. Thus, the results suggested that people are able to communicate successfully with iconic vocalizations about various concepts, without the use of words. However, strong evidence for this claim depends on the potential for vocal communication across widely disparate cultures and linguistic backgrounds. Perlman and Lupyan’s contestants were English speakers, and their listeners were all American English speakers, raising the possibility that culture-specific cues were used by listeners in determining the intended meanings.

The current project is investigating whether the vocalizations produced for the contest can be understood by people from a wide range of cultural and linguistic backgrounds. Using Percy (Draxler, 2011), a web-tool for experiments, we are conducting comprehension surveys with listeners from more than 20 diverse languages. Here, we report results from four languages: English (N = 67), German (N = 81), Polish (N = 49), and Japanese (N = 57). Participants listened to the three vocalizations for each meaning that were guessed most accurately in the English experiment, and for each, guessed its meaning from six alternatives. Given that the vocalizations were produced by English speakers for an English-speaking audience, we predicted that the response accuracy of listeners would depend on the genetic distance of the given language from English, which we took as a rough approximation of cultural and linguistic overlap. The preliminary results of a generalized mixed model analysis show that speakers of all examined languages perform significantly above chance level (16.7%)—and even significantly better than 50%. As expected, accuracy was higher for languages closer to English: English (72%), German (71%), Polish (62%), and Japanese (60%). Overall, guessing accuracy was higher than chance for all 30 meanings. Guessers across the four languages were most successful with actions and animate nouns, while Polish and Japanese speakers, in particular, were less accurate with the other categories. These results provide the first strong evidence that people are able to improvise iconic vocalizations for successful, cross-linguistic communication about a variety of meanings. They also point to semantic domains where iconic vocalizations may be less effective. Altogether, they speak to the universal potential for vocal iconicity to scaffold communication between speakers without a common language and thus ground the formation of spoken symbols.

References

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