

# Seeing Isn't Required to Gesture Like a Native Speaker

March 21, 2016



People the world over gesture when they talk, and they tend to gesture in certain ways depending on the language they speak. Findings from a new [study](#) including blind and sighted participants suggest that these gestural variations do not emerge from watching other speakers make the gestures, but from learning the language itself.

“Adult speakers who are blind from birth also gesture when they talk, and these gestures resemble the gestures of sighted adults speaking the same language. This is quite interesting, since blind speakers cannot be learning these language-specific gestures by watching other speakers gesture,” explains psychological scientist and lead researcher Feyda Özçalkan of Georgia State University.

The [findings](#) are published in *Psychological Science*, a journal of the [Association for Psychological Science](#).

While research had shown that speakers of different languages used gestures in different ways, the origin of these differences was not clear. Özçalkan and colleagues Ché Lucero and Susan Goldin-Meadow of the University of Chicago realized that they might be able to answer the question by comparing the gestures produced by sighted and congenitally blind individuals who speak the same language.

If people learn to gesture by watching other speakers of the same language, they hypothesized, then individuals who are blind from birth would not produce gestures similar to those of sighted speakers. But if people learn to gesture as a function of learning the language itself, then blind and sighted individuals who speak the same language would gesture in similar ways.

The researchers decided to focus specifically on gestures related to motion across space, which tend to show considerable variation across languages. English speakers, for example, typically combine both the manner of motion (e.g., running) and the path of motion (e.g., entering) into a single gesture. Turkish speakers, on the other hand, produce separate gestures to indicate manner and path.

Özçalıkan and colleagues recruited 40 congenitally blind adults—20 native English speakers and 20 native Turkish speakers—to participate in the study. They also recruited 40 sighted speakers of each language.

The participants were presented with three-dimensional dioramas that contained a series of figurines depicting motion across space. Some of the scenes showed a figure making a path to a landmark (e.g., running into a house), some showed the figure making a path over a landmark (e.g., flipping over a beam), and others showed a figure making a path from a landmark (e.g., running away from a motorcycle).

Participants explored the scene, using their hands to touch and feel the components; they were told that although the figurine appeared three times in the scene, they should think of her movement as representing a single continuous motion. The participants were then asked to describe the scene.

The results showed that speakers' patterns of gestures diverged according to the language they spoke. Regardless of whether they were sighted or blind, Turkish speakers produced more separated sentence units—in both speech and gesture—compared to English speakers. And sighted and blind English speakers produced more conflated sentence units in their speech and gestures than did Turkish speakers.

“We now know that blind speakers do not all gesture in the same generic way,” Goldin-Meadow explains. “Rather, their gestures resemble those of other speakers of the same language.”

While the study focused on speech and gesture in English and Turkish, the researchers note that these two languages represent a broader pattern in the world's languages. When it comes to expressing motion in space, Dutch, Swedish, Russian, Icelandic, and Serbo-Croatian are similar to English, while French, Spanish, Hebrew, Japanese cluster with Turkish.

“Together, our findings show that gestures that are produced with speech carry the imprint of the language that they accompany even in the absence of access to native gesture patterns, marking speech as the source of cross-linguistic variation in gesture,” Özçalıkan and Goldin-Meadow conclude.

This work was supported by Grant 12-FY08-160 from the March of Dimes Foundation to S. Özçalıkan and S. Goldin-Meadow.