

# Figures of speech -- understanding idioms requires both sides of the brain

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Is it better to treat someone with kid gloves or to treat them carefully? Researchers in Italy have investigated how the brain recognises that the first phrase means the same as the second. Publishing in the open access journal *BMC Neuroscience*, the researchers suggest that we use both hemispheres to understand idioms.

Dr Alice Proverbio from the University of Milano-Bicocca and colleagues used electrophysiological and LORETA source reconstruction analysis to investigate the role of the two cerebral hemispheres in idiom comprehension. By analysing the brain activity of 11 students, they found that idiomatic sentences activated the right middle temporal gyrus (after 350ms) and the right medial frontal gyrus (at 270-300 and 500-780ms).

All phrases were matched for length and familiarity, yet the students took longer to associate an idiomatic phrase with a linked word than to associate a literal phrase with its linked word. This suggests that idioms are more difficult to understand and denote superior levels of language use and processing.

The findings also shed light on whether the brain tries to understand a familiar idiom literally before it understands it as a metaphor. The left inferior

frontal gyrus, the part of the [brain](#) thought to be used to suppress literal meaning, was not specifically activated by idiom comprehension; however, the limbic regions, which are involved in emotional responses, were (at 400-450ms).

Dr Proverbio concludes, "though the interpretation of language involves widespread activation bilaterally, the right hemisphere has a special role in the comprehension of idiomatic meaning."

More information: The role of left and right hemispheres in the comprehension of idiomatic language: an electrical [neuroimaging](#) study; Alice M Proverbio, Nicola Crotti, Alberto Zani and Roberta Adorni; *BMC Neuroscience* (in press); <http://www.biomedcentral.com/bmcneurosci/>

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