

# Scientists search for source of creativity: Calling it a 'right brain' phenomenon is too simple, researchers say

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It takes two to tango. Two hemispheres of your brain, that is.

USC researchers are working to pin down the exact source of creativity in the brain – and have found that the left hemisphere of your brain, thought to be the logic and math portion, actually plays a critical role in creative thinking.

"We want to know: how does creativity work in the brain?" said Lisa Aziz-Zadeh, assistant professor of neuroscience at the USC Dornsife College of Letters, Arts and Sciences.

If you paint or sculpt, you may think of yourself as right-brained. The right hemisphere of your brain is often thought to be the creative half, while the left is thought to be the rational, logical side.

But a new study from a team led by Aziz-Zadeh demonstrates that while the right half of your brain performs the bulk of the heavy lifting when you're being creative, it does call for help from the left half of your brain.

The study, which focuses on how the brain tackles visual creative tasks, supports previous findings about how the brain handles musical improvisation.

Coauthored by USC graduate student Sook-Lei Liew and USC undergrad Francesco Dandekar, the study was posted online in *Social Cognitive and Affective Neuroscience* in February.

"We need both hemispheres for creative processing," said Aziz-Zadeh.

Aziz-Zadeh and her team used functional magnetic resonance imaging (fMRI) to scan the brains of architecture students, who tend to be visually creative.

While being scanned, the subjects were shown three shapes: a circle, a C, and an 8. They were then asked to visualize images that could be made by rearranging those shapes – for example, a face (with the 8 on its side to become the eyes, the C on its side to become the smiling mouth, and the circle in the center as the nose).

They were also asked to simply try to piece three geometric shapes together with their minds and see if they formed a square or a rectangle – a task that requires similar spatial processing, but not necessarily creativity.

The creative task, even though it was mainly handled by the right hemisphere, actually lit up the left hemisphere more than the non-creative task. The results indicate that the left brain is potentially a crucial supporter of creativity in the brain.

Aziz-Zadeh said she plans to explore more of how different types of [creativity](#) (painting, acting, singing) are created by the [brain](#) – what they have in common, and what makes them different.

Provided by University of Southern California

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