Odd behavior and creativity may go hand-in-hand

By Melanie Moran
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Often viewed as a hindrance, having a quirky or socially awkward approach to life may be the key to becoming a great artist, composer or inventor.

New research on individuals with schizotypal personalities – people characterized by odd behavior and language but who are not psychotic or schizophrenic – offers the first neurological evidence that they are more creative than either normal or fully schizophrenic individuals, and rely more heavily on the right sides of their brains than the general population to access their creativity.

The work by Vanderbilt psychologists Brad Folley and Sohee Park was published online last week by the journal *Schizophrenia Research* [http://www.sciencedirect.com/science/journal/09209964].

Psychologists believe that a number of famous creative luminaries, including Vincent Van Gogh, Albert Einstein, Emily Dickinson and Isaac Newton, had schizotypal personalities.

“The idea that schizotypes have enhanced creativity has been out there for a long time but no one has investigated the behavioral manifestations and their neural correlates experimentally,” Folley says. “Our paper is unique because we investigated the creative process experimentally and we also looked at the blood flow in the brain while research subjects were undergoing creative tasks.”

Folley and Park conducted two experiments to compare the creative thinking processes of schizotypes, schizophrenics and normal control subjects.

In the first experiment, the researchers showed research subjects a variety of household objects and asked them to make up new functions for them. The results showed that the schizotypes were better able to creatively suggest new uses for the objects, while the schizophrenics and average subjects performed similarly to one another.

“Thought processes for individuals with schizophrenia are often very disorganized, almost to the point where they can’t really be creative because they cannot get all of their thoughts coherent enough to do that,” Folley observes. “Schizotypes, on the other hand, are free from the severe, debilitating symptoms surrounding schizophrenia and also have an enhanced creative ability.”

In the second experiment, the three groups again were asked to identify new uses for everyday objects as well as to perform a basic control task while the activity in their prefrontal lobes was monitored using a brain scanning techniques called near-infrared optical spectroscopy. The brain scans showed that all groups used both brain hemispheres for creative tasks, but that the activation of the right hemispheres of the schizotypes was dramatically greater than that of the schizophrenic and average subjects, suggesting a positive benefit of schizotypy.

“In the scientific community, the popular idea that creativity exists in the right side of the brain is thought to be ridiculous, because you need both hemispheres of your brain to make novel associations and to perform other creative tasks,” Folley says. “We found that all three groups, schizotypes, schizophrenics and normal controls, did use both hemispheres when performing creative tasks. But the brain scans of the schizotypes showed a hugely increased activation of the right hemisphere compared to the schizophrenics and the normal controls.”

The researchers believe that the results offer support for the idea that schizotypes and other psychoses-prone populations draw on the left and right sides of their brains differently than the average population, and that this bilateral use of the brain for a variety of tasks may be related to their enhanced creativity.

In support of this theory, Folley points to research by Swiss neuroscientist Peter Brugger [http://www.neuroscience.unizh.ch/e/groups/brugger00.htm] who found that everyday associations, such as recognizing the car key on your keychain, and verbal abilities are controlled by the left hemisphere while novel associations, such as finding a new use for a object or navigating a new place, are controlled by the right hemisphere.

Brugger hypothesized that schizotypes should make novel associations faster because they are better at accessing both hemispheres – a prediction that was verified in a subsequent study. His theory can also explain research which shows that a disproportional number of schizotypes and schizophrenics are neither right nor left hand dominant, but instead use both hands for a variety of tasks, suggesting that they recruit both sides of their brains for a variety of tasks more so than the average person.

“The lack of specialization for certain tasks in brain hemispheres could be seen as a liability, but the increased communication between the hemispheres actually could provide added creativity,” Folley says.

Folley, who is in the process of completing his dissertation at Vanderbilt, is currently pursuing a clinical internship and research at the University of California Los Angeles. Park is an associate professor of psychology and an investigator in the Vanderbilt Kennedy Center for Research on Human Development.

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