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Neuroscience reveals brain differences between Republicans and Democrats

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With the U.S. presidential election just days away, new research from the University of South Carolina provides fresh evidence that choosing a candidate may depend more on our biological make-up than a careful analysis of issues.

That's because the brains of self-identified Democrats and Republicans are hard-wired differently and may be naturally inclined to hold varying, if not opposing, perceptions and values. The USC study, which analyzed MRI scans of 24 USC students, builds on existing research in the emerging field of political neuroscience.

"The differences are significant and real," said lead researcher Roger D. Newman-Norlund, an assistant professor of exercise science in the Arnold School of Public Health and the director of USC's new Brain Simulation Laboratory.

The study focused on the mirror neuron system, a network of brain areas linked to a host of social and emotional abilities. After declaring their political affiliation, The subjects were given questionnaires designed to gauge their attitudes on a range of select political issues. Next, they were given "resting state" MRIs which made it possible to analyze the strength of connections within the mirror neuron system in both the left and right hemispheres of their brains; specifically the inferior frontal gyrus, supramarginal gyrus and angular gyrus.

The results found more neural activity in areas believed to be linked with

broad social connectedness in Democrats (friends, the world at-large) and more activity in areas linked with tight social connectedness in the Republicans (family, country). In some ways the study confirms a stereotype about members of the two parties—Democrats tend to be more global and Republicans more America-centric—but it actually runs counter to other recent research indicating Democrats enjoyed a virtual lock on caring for others.

"The results were a little surprising," Newman-Norlund said. "This shows the picture is more complicated. One possible explanation for our results is that Democrats and Republicans process social connectedness in a fudamentally different manner."

While political neuroscience and study is still largely in its infancy, the implications for future races could be big as politicians and campaign strategists learn how to exploit brain differences to make more effective, biologically targeted appeals to voters.

The research also suggests that maintaining an open mind about political issues may be easier said than done. In fact, bridging partisan divides and acting contrary to ideological preferences likely requires going against deeply ingrained biological tendencies. And while there is evidence that mirror neuron connections can change over time, it's not something that happens overnight, Newman-Norlund said.

"The (brain) differences could be a result of genetics, experiences, or a combination of both," he said. "It takes a lot of effort to see the other side and we're not going to wake up one day and all start getting along."

Understanding the differences and their origins, however, is a step in the right direction, he said.