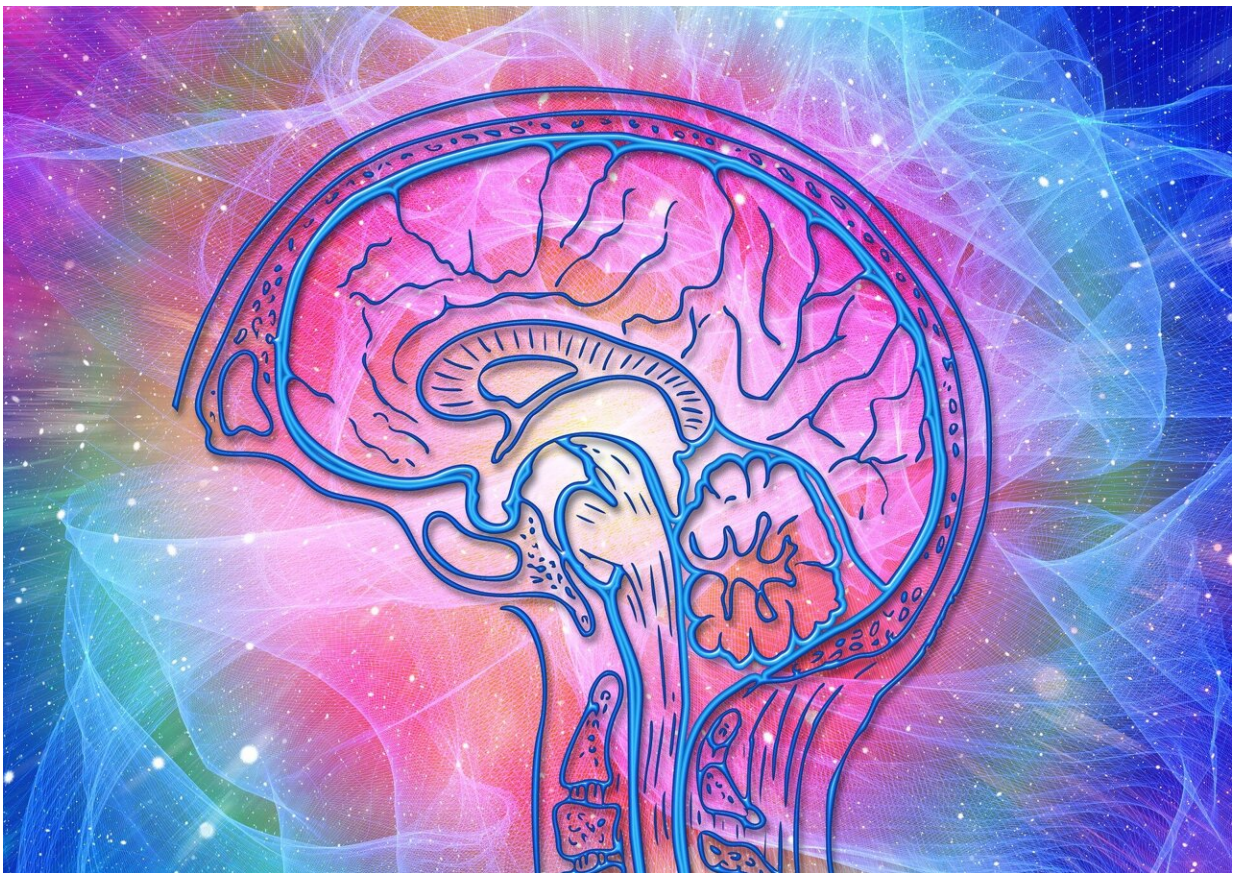


Performance on some cognitive tasks is better predicted by gender identity than by sex assigned at birth, finds study

April 10 2024, by Béatrice St-Cyr-Leroux



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Many studies have found sex differences in cognitive abilities. In

general, women outperform men on verbal and fine motor tasks, while men outperform women on spatial orientation and mental rotation tasks.

However, few studies have considered the influence of sociocultural factors such as [gender identity](#), [gender expression](#) (stereotypical male and female behaviors) and [sexual orientation](#) in explaining these differences.

Now a new study by scientists at Université de Montréal does just that, by examining performance on eight cognitive tasks in relation to both sex-based and gender-based factors.

The ongoing research is being done by Mina Guérin, a Ph.D. student in neuropsychology, and Fanny Saulnier, an MSc student in psychiatric sciences, under the supervision of psychiatry professor Robert-Paul Juster.

Their results were [published](#) in January in the journal *Biology of Sex Differences*.

Gender diversity matters

The findings confirm that [sex differences](#) in spatial cognition are indeed better explained by biological factors, i.e., sex assigned at birth and sex hormones. But they also show that sex differences in verbal cognition are better explained by sociocultural factors, i.e., gender identity.

In short, spatial cognition seems more related to sex, while verbal cognition seems more related to gender. Sex assigned at birth is not always the most important variable in explaining sex differences in cognition.

"Our findings highlight the importance of considering gender diversity

when seeking to understand sex differences and gender diversity in cognition," said Juster.

The research team believes their findings will encourage researchers to use more sophisticated methodologies that use both sex and gender measures.

"By including people from diverse backgrounds, we can incorporate more sex- and gender-related variables into the analysis and ultimately get a more accurate picture of cognitive differences," said Gu erin.

More information: Louis Cartier et al, Sex and gender correlates of sexually polymorphic cognition, *Biology of Sex Differences* (2024). [DOI: 10.1186/s13293-023-00579-8](https://doi.org/10.1186/s13293-023-00579-8)

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