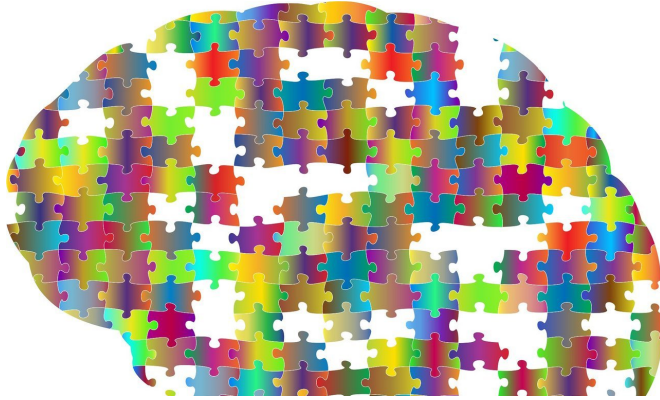


Our brains are obsessed with being social

16 May 2018



Credit: CC0 Public Domain

Our brains are obsessed with being social even when we are not in social situations. A Dartmouth-led study finds that the brain may tune towards social learning even when it is at rest. The findings published in an advance article of *Cerebral Cortex*, demonstrate empirically for the first time how two regions of the brain experience increased connectivity during rest after encoding new social information.

The study examines the role of two [brain](#) regions, the medial prefrontal cortex and tempoparietal junction, which are integral to social inference or our ability to evaluate other people's personalities, mental states and intentions. Previous research has found that these two regions tend to experience a spontaneous spike in connectivity during [rest](#) and as such, are considered part of the brain's default network. The Dartmouth-led research team examined if these two default network regions consolidate social information during rest.

"We've known for a while that brain regions associated with social thinking engage rest but we really never understood why. This study suggests an important function to this pattern: engaging these regions during rest may help us learn about

our social environment," said lead author Meghan L. Meyer, an assistant professor of psychological and brain sciences, and director of the Dartmouth Social Neuroscience Lab.

For the study, 19 participants were asked to complete social encoding and non-social encoding tasks during a brain scan session while undergoing fMRI. Before encoding, they had a baseline rest scan and after each [task](#), a resting state scan of 8.4 minutes, where they could think about anything, as long as they stayed awake.

- For the social encoding task, participants were asked to look at a photograph of a person, their job title such as "doctor" and two traits used to describe the individual such as "educated, sincere." They were then prompted to evaluate the impression of the person by rating the person's warmth and competence on a scale of 1 to 100 on a computer screen.
- The non-social encoding task was similar only participants were presented with photographs of a location that was paired with two traits used to describe it upon which they were asked to evaluate the place on warmth and pleasantness.

The participants encoded 60 social trials and 60-non-social trials. Some had the social encoding task first while others had the non-social one first. Right after the scan, participants completed a surprise, associative memory test in a quiet testing room, to assess if they could accurately identify certain photos of persons and places, and their respective set of traits, which were presented earlier.

The findings revealed that during the rest period after social encoding, there was an increase in connectivity between the [medial prefrontal cortex](#) and tempoparietal junction regions. The greater the connectivity between these two default network regions, the higher the levels of social memory performance.

The researchers observed an order effect in which participants who encoded the social information or photographs of persons first maintained higher levels of connectivity between these two [brain regions](#) during the post social rest and also the non-social rest period; however, this was not found to be the case for those who were presented with the non-social task first.

The study demonstrates that it appears that the brain consolidates [social information](#) as soon as it has the opportunity to rest. "When our mind has a break, we might be prioritizing what we learn about our social environment," added Meyer.

More information: Meghan L Meyer et al. Evidence That Default Network Connectivity During Rest Consolidates Social Information, *Cerebral Cortex* (2018). [DOI: 10.1093/cercor/bhy071](https://doi.org/10.1093/cercor/bhy071)

Provided by Dartmouth College

APA citation: Our brains are obsessed with being social (2018, May 16) retrieved 23 January 2021 from <https://medicalxpress.com/news/2018-05-brains-obsessed-social.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.