Daydreaming May Help You Become More Socially Adept

New research explains why relationships take up so much of our mental energy

By Dana G. Smith on May 24, 2018
What do you think about when your mind wanders? Chances are, you reflect back on past situations, think about plans for the future or plumb your inner psyche to take stock of your thoughts and feelings. And many of these ruminations likely involve other people.

When our brains are not otherwise occupied, a network of neural regions called the default mode network automatically comes online. It enables us to turn our attention inward and daydream, but it also helps us to project out and put ourselves in other people’s shoes.

In addition to their role in the default mode network, two of the areas—the temporoparietal junction (TPJ) and the medial prefrontal cortex (mPFC)—are also important processing centers for social information. The TPJ helps us evaluate other people’s personality traits and emotions and infer their states of mind whereas the mPFC becomes active when we engage in self-reflection and think about
our own qualities and social standing.

Scientists have known about the disparate functions of these two regions, but they did not know how the social areas fit into the default mode network. A recent paper published in *Cerebral Cortex* suggests rest is a critical time for the TPJ and mPFC to commit information about people’s names and professions as well as physical and personality traits to memory. The areas are first engaged when we meet or learn about new people, and they flip back on later as part of the default mode network to process the personal information when we are at rest.

The engagement of these regions at rest may “help us consistently learn social information,” says lead author Meghan Meyer, an assistant professor of psychology at Dartmouth College. “The brain might be prioritizing social learning, and that’s why there is this tendency for these regions to engage by default.”

Meyer’s team developed a task to be performed in a magnetic resonance imaging scanner to see what was happening in the brain after new social information was learned. The test alternated between presenting participants with social or nonsocial information and periods of rest. In the social scenario
participants saw a picture of a person paired with their job title and two personal adjectives. The nonsocial scenario included pictures of geographical places, the country where the photograph was taken and two descriptive words of the place. After each task the participants were told to let their minds wander.

The researchers found the TPJ and mPFC bumped up their engagement with each other during the rest that followed the social task, and this connectivity corresponded to better memory of the social information later. In a surprising twist, the researchers saw greater connectivity between the TPJ and mPFC during rest after the nonsocial task as well, but only if the participants had performed the social task earlier. Meyer says the fact these regions come back online so quickly whenever our minds are free, even if they’ve been doing something else in the meantime, is unlikely to be a coincidence. “Perhaps our brains are sort of designed to maximize social learning,” she says. “It’s like a reflex that kicks on whenever we don’t have to attend to something else” to help us navigate our social environment.

Jessica Andrews-Hanna, an assistant professor of psychology at the University of Arizona who was not involved in the research, says the study was “excellent” and “made many important novel contributions.” She adds, “To be able to look at whether these even very brief periods of mental break allow our brains to do something useful and functional is a really important finding.”
The study also confirms what scientists think about how our brains process memory. When we rest, a brain region called the hippocampus becomes active, replaying recent events to transfer them from short- to long-term memory. During rest after the social task, the mPFC connected with the hippocampus, providing support for the idea these social regions have an important memory function. “One of the main reasons—or adaptive potentials—to take breaks, even short breaks throughout our day-to-day life, is to help us retain information longer and transfer it into long-term memory,” Andrews-Hanna notes. “The Meyer study is the first to extend these findings to social information and our memory of other people.”

Meyer says one real-world application of the study could be that people need to get more rest throughout the day. “I think this data highlights that it might not always be a bad thing to be distracted with this system [the default mode network]. It might be doing something important for us that’s helping us learn about social information,” she says. For example, “taking a break after a big meeting might help you learn whatever you just witnessed socially.”

That our brain networks prioritize the enhancement of our social networks is worth remembering. We should all probably go back to our baselines—default mode—a little more often each day.

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