

# Foraging for thought – new insights into our working memory

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(Medical Xpress)—We take it for granted that our thoughts are in constant turnover. Metaphors like "stream of consciousness" and "train of thought" imply steady, continuous motion. But is there a mechanism inside our heads that drives this? Is there something compelling our attention to move on to new ideas instead of dwelling in the same spot forever?

A research team led by Dr Matthew Johnson in the School of Psychology at The University of Nottingham Malaysia Campus (UNMC) may have discovered part of the answer. They have pinpointed an effect that makes people turn their [attention](#) to something new rather than dwelling on their most recent thoughts. The research, which has been published in the academic journal *Psychological Science*, could have implications for studying disorders like autism and ADHD.

Dr Johnson said: "We have discovered a very promising paradigm. The effect is strong and replicates easily – you could demonstrate it in any psychology lab in the world. The work is still in its early stages but I think this could turn out to be a very important part of our understanding of how and why our thoughts work the way they do."

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The paper "Foraging for Thought: An Inhibition-of-Return-Like Effect Resulting From Directing Attention Within Working Memory" sheds new light on what makes us turn our attention to things we haven't recently thought rather than ones we have. It was carried out in collaboration with Yale University, Princeton University, The Ohio State University, and Manhattanville College

The "inhibition of return" effect is well-established in [visual attention](#). At certain time scales, people are slower to turn their thoughts back to a location they have just paid attention to. They are much quicker to focus on a new location. Some have interpreted this effect as a "foraging facilitator," a process that encourages organisms to visit new locations over previously visited ones when exploring a new environment or performing a visual search.

However, in this new study, the researchers weren't focusing on visual search, but on the process of thought itself. Participants were shown either two words or two pictures, and when the items disappeared, they were instructed to turn their attention briefly to one of the items they were just shown and ignore the other. Immediately afterwards they were asked to identify either the item they had just thought about, or the one they had ignored. For both pictures and words the participants were quicker to react to the item they had ignored.

Dr Johnson said: "The effect was shocking. When we began we expected to find the exact opposite – that thinking about something will make it

easier to identify. We were initially disappointed – but when the effect was replicated over multiple experiments we realised we were onto something new and exciting."

Critically, the effect is temporary; on a later memory test participants remembered attended items better than ignored ones.

Dr Johnson said: "That's important. If thinking about things made us worse at remembering them long-term, it would make no sense for real-world survival. That's why we think we've tapped into something fundamental about how we think in the moment – a possible mechanism keeping our thoughts moving onto new things, and not getting stuck."

The researchers have more experiments planned to explore this effect. They say the new task could have implications for studying disorders like autism and ADHD, where attention may persist too long or move on too easily, as well as conditions with more general cognitive impairments, such as schizophrenia and ageing-related dementia.

Future studies planned also include applying cognitive neuroscience techniques to determine the effect's underlying neural foundations.

**More information:** The full research paper can be found at:  
[dx.doi.org/10.1177/0956797612466414](https://doi.org/10.1177/0956797612466414)

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