How a nap can enhance false memories in one half of the brain

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Sleep was revealed to influence memory in just one half of the brain. Credit: Lancaster University

A daytime nap promotes a false memory of words, psychologists have shown.

A study by John Shaw and Professor Padraic Monaghan of Lancaster University found that sleep influenced false memories in a memory recognition test taken after a nap.

They tested two groups of people, with one having slept for up to 1 hour 45 minutes while the other group stayed awake.

Both groups were asked to focus on a central fixation point on a computer screen while 48 test words appeared on the left or right of the dot. The participants were then instructed to press a yes or no key according to whether they had previously seen the word or not.

The test words contained lists of related words such as "bed, rest, awake, tired, dream, snooze, nap, snore."

The tests asked the participants to recall or recognise words which were part of the original list (seen-old), not related to the list (unseen-new) or not previously seen but related to the theme of the list (unseen-lure words eg "sleep").

The group which had had a nap was "significantly more likely" to identify unseen-lure words as old, thinking they had seen them before when they had not.

Curiously, sleep was revealed to influence memory in just one half of the brain. Sleep affected the right hemisphere of the brain by encouraging it to accept more of the unseen-lure words than the left hemisphere. This effect was not found for the group that stayed awake.

"We found that whereas sleep increased overall false memory recognition, this varies according to the hemisphere that was being accessed during retrieval, with the right half of the brain being more susceptible to false memories and the left half was found to be more resilient against accepting unseen words as previously seen."

More information: John J. Shaw et al. Lateralised sleep spindles relate to false memory generation, *Neuropsychologia* (2017). DOI: 10.1016/j.neuropsychologia.2017.11.002

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