

Conscious, unconscious memory found linked

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Yale University scientists say they have found the way our brain stores new, conscious information is linked with the way it stores unconscious information.

The finding by psychology Professor Marvin Chun contrasts with the belief that all explicit (conscious) memory and implicit (unconscious) memory, have distinct neural bases.

The belief the two types of memory are distinct has been illustrated by examples, including amnesiac patients with damage to the hippocampus and associated brain structures which have severely impaired explicit memory, but intact implicit memory.

Instead of looking at how the storage of the two types of memory differs, Chun, Nicholas Turk-Browne and Do-Yoon Yi focused on the common elements between them. Sixteen men and women viewed 120 photographs and answered which photos were taken indoors or outdoors. Each image was then shown once again. The study used functional magnetic resonance imaging to record brain activity during the test.

Fifteen minutes later the subjects were given a third recognition test, this one unexpected, which included the original 120 photos plus 60 new photos. The subjects' response was again recorded by fMRI.

The findings are detailed in the cover story in this month's issue of the journal Neuron.

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