

Confabulation and the sense of reality

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Recent studies have deepened our understanding of how the brain uses memories to build our mental past and future. But how does it determine whether an evoked memory, a thought, refers to the present and can be acted upon? How do we sense our current role and duties within a flow of thoughts that encompass past, present, and future?

Certain brain damaged subjects fail in this capacity: they act according to ideas that do not pertain to ongoing reality (they typically enact currently irrelevant habits), confabulate about recent events and about their current status, and are disoriented. Studies with these patients and functional imaging and evoked potential studies with healthy subjects have revealed a mechanism, defective in reality-confusing patients, which filters upcoming thoughts even before their content is recognized [1]. The underlying capacity appears to be extinction: the ability to abandon previously valid anticipations. The mechanism depends on the posterior medial orbitofrontal cortex (area 13) and its subcortical connections, including dopaminergic structures of the reward system. We now call this mechanism Orbitofrontal Reality Filtering [2]. The studies indicate that the brain does not resort to a separate mechanism to keep thought and behavior in phase with reality but uses the same machinery that also evaluates outcomes in reward processing. This talk gives an update on this vital thought control mechanism.

[1] Schnider A.: *The Confabulating Mind. How the Brain Creates Reality*, 2nd ed. Oxford, New York: Oxford University Press, 2018.

[2] Schnider A. Orbitofrontal reality filtering. *Front Behav Neurosci* 2013; 7:67.