
Dynamics of semantic memory search underlying creative ideation.

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Résumé

Creative ideas likely result from searching semantic memory knowledge, yet the mechanisms underlying memory search remain unclear. Using an associative fluency task based on polysemous words (PolyFT), Ovando-Tellez et al. (2023) distinguished two search components related to Clustering (exploiting a given meaning) and Switching (changing for another meaning) that were then segregated into fast and slow components (Ovando-Tellez & Vigreux, et al., under review) and correlated with creative and executive abilities. Interestingly, only slow Switching followed predictions from the marginal value theorem (MVT) of the optimal foraging theory (Hills et al. 2012).

To extend and replicate these findings, 92 French-native participants underwent a computerised version of the PolyFT, using the original three cue-words, and 46 additional polysemous cue-words. In addition, participants completed a set of established creativity tasks and executive tests

Memory search components of Clustering and Switching were identified and decomposed into fast and slow Clustering and Switching based on inter-response time. Consistent with the previous study, slow but not fast Switching followed predictions from MVT. Correlational analyses revealed how these four new components relate to creative abilities.

Overall, our results replicate and extend prior findings, identifying cognitive components of memory search related to creativity and providing new insights on how individuals search their memory for creative ideas.

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