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Authors

Kenett, Yoed

Tomparry, Alexa

Thompson-Schill, Sharon

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How the Organization of Autobiographical Memories Changes Over Time

Yoed Kenett

University of Pennsylvania, Philadelphia, Pennsylvania, United States

Alexa Tompary

University of Pennsylvania, Philadelphia, Pennsylvania, United States

Sharon Thompson-Schill

University of Pennsylvania, Philadelphia, Pennsylvania, United States

Abstract

Cognitive scientists have discovered much about the acquisition, consolidation, and retrieval of episodic memories; however, much less is known about how memories of our daily experiences are organized, nor how this organization may change as memories become consolidated. Here, we apply computational network science methodologies to quantify the organization of recent (within the past year) and remote (5–10 years ago) autobiographical memories and quantitatively examine how these networks change over time. We found that remote memories exhibited higher global connectivity relative to recent memories, and that this increased connectivity is coupled with lower subjective ratings of vividness. Our results demonstrate how such cognitive features of episodic memory can be quantitatively examined and shed novel light on the organization and reconfiguration of episodic memories over time.