

Relating Brain Structures to Open-Ended Descriptions of Cognition

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Presentation Abstract Summary Finding correspondences between mental processes and brain structures is a central goal in cognitive neuroscience.

Neuroimaging provides brain-activity maps associated with cognitive task, however each study explores only a handful of mental processes.

Here we use literature mining to bridge results across studies, establishing a bidirectional mapping between brain and mind. Our goal is to work on an open-ended set of terms describing cognitive processes.

Moreover we introduce a validation framework using information retrieval metrics to ensure the accuracy of such correspondences, with a clear focus on relative frequencies, ignored in previous studies, to capture the relative importance of cognitive concepts. We show that this approach enables open-ended encoding and decoding.

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