The neural representation of concepts during composition

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Presentation Abstract Summary The human brain is able to quickly build complex meaning from simple building blocks. This is especially apparent in language, as we combine words to create phrases, sentences and beyond.
Although much research has addressed both the neural representation of individual words and the brain correlates of semantic composition, we do not know how the representations of words evolve and change during composition. Here, we use a picture naming paradigm to explore semantic composition under controlled conditions, wherein participants utter different combinations of adjectives and nouns. We find that, when compared to a non-compositional task, a compositional task 1) has a neural representation that is more similar to the single noun condition, 2) produces a less salient neural representation of the adjective, but 3) produces a more salient representation of the noun. These results are an important first step towards understanding the representation of higher-order meaning in the human brain.

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