Neural Basis of Event Words

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Abstract: On some accounts, word-meanings are organized in the human-brain according to their sensory-motor attributes. We tested an alternative hypothesis: word-meanings are neuroanatomically dissociable along abstract conceptual dimensions (entities vs. events). We measured brain activity in the left middle temporal gyrus (lMTG), a brain region that has previously been shown to respond more to verbs than nouns during semantic tasks. While undergoing fMRI, participants judged the semantic relatedness of six types of word-pairs: motion verbs (to roll), emission verbs (to sparkle) and perception verbs (to observe), animal nouns, fruit/vegetable nouns, and event nouns (the wedding). Replicating previous results, lMTG BOLD signal was higher for verbs than for object nouns. BOLD was also higher for event nouns than object nouns. We hypothesize that the lMTG responds to the conceptual category of events, rather than the grammatical category of verbs. These data suggest that lexical-semantic information is organized according to abstract conceptual dimensions.