

Between-Subjects Neural Decoding of Phrase Representations Outperforms Word2Vec Decoding

Submission ID 3000192
Submission Type Poster
Topic Cognitive Science
Status Submitted
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SUBMISSION DETAILS

Presentation Type Either Poster or Oral Presentation

Presentation Abstract Summary Understanding the consistencies in neural representations across individuals is fundamental to interpreting the results of cognitive neuroscience research. However, very little work thus far has looked at the consistency of higher-level neural representations, such as phrase composition, across individuals. This study uses pairwise neural-decoding to ask (1) whether individual neural representations of adjective-noun phrases are preserved across subjects and (2) whether a proven semantic composition function (element-wise addition) can be applied to the Word2Vec model to explain these representations. We observe strong between-subjects decoding demonstrating high levels of consistency between subjects for these higher-level phrase representations, but we find very poor decoding accuracy using the Word2Vec model with composition.

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Keywords

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neural decoding

between-subjects decoding

phrase neural representations

adjective-noun phrases

Word2Vec

semantic composition
