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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 45(45)

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Publication Date

2023

Peer reviewed

Dynamics of information activation of noun countability and semantic category in language processing

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Abstract

Conceptual system research usually focuses on the location of representations in the brain, whereas the time course of such processing is rarely explored. This ERP experiment examined conceptual systems from a temporal perspective by exploring the dynamics between noun countability and semantic category systems. Participants were presented with Mandarin noun triplets sequentially (e.g. spoon, cup, plate) and had to judge whether the third stimulus belonged to the semantic category of the previous two stimuli, with the triplet's countability and semantic category being manipulated. The results showed that countability and category information were activated and interacted with each other early in processing (150-250 ms). Interestingly, both types of features remained active during 350-500 ms, but the category effect was much stronger and the two effects did not interact, probably because only the category information was task-relevant. Our findings indicated that concepts have dissociable features, which can be flexibly activated by context.