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### **Proceedings of the Annual Meeting of the Cognitive Science Society**

#### **Title**

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#### **Permalink**

<https://escholarship.org/uc/item/8n52s3hd>

#### **Journal**

Proceedings of the Annual Meeting of the Cognitive Science Society, 48(0)

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#### **Publication Date**

2026

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Peer reviewed

# Following the Center: How Attention Enhances Centroid Processing During Multiple Object Tracking

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## Abstract

In daily life, humans perform tasks that require tracking movements of several objects (e.g., during car-driving). Earlier research showed that humans are able to extract ensemble statistics such as the centroid of several moving objects. Yet, the neurophysiological correlates of centroid processing have not been explored. Using EEG, we investigated differences in single object and centroid processing for the N1 ERP component in a multiple object tracking (MOT) task. In the MOT task, participants tracked the movements of target objects among distractor objects. To investigate the N1, task-irrelevant probes were flashed either on targets, distractors, or in the centroid of targets or distractors. The N1 amplitude was larger for targets relative to distractors and also for the centroids of targets compared to the centroid of distractors. These results do not only show that attention enhances processing of single attended objects but also the centroid of a group of attended objects.

**Keywords:** ensemble statistics; ensemble perception; seeing sets; attention; multiple object tracking