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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/8d63q4z2>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 33(33)

ISSN

1069-7977

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Publication Date

2011

Peer reviewed

Incremental Information Mediates Visual Search

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Abstract: Recent studies show that visual search often involves a combination of both parallel and serial search strategies. Consequently, computational models and theoretical accounts of visual search processing have evolved from traditional parallel or serial descriptions to a continuum from "efficient" to "inefficient." In our first experiment, we demonstrate with various control conditions that search efficiency does not increase with simultaneous delivery of target features in a conjunction search task. In the second experiment, we explore effects of incremental non-linguistic information delivery and discover improvement of search efficiency. We find a facilitatory effect when visual non-linguistic delivery of target features is concurrent with the visual display onset, but not when the target features are delivered prior to display onset. The results support an interactive account of visual perception that explains linguistic and non-linguistic mediation of visual search as chiefly due to the incrementality of target feature delivery once search has begun.