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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Permalink

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 42(0)

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Publication Date

2020

Peer reviewed

Do Environmental Resource Distributions Affect Attentional Styles?

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Abstract

How are attentional styles and spatial search strategies related? Analytical attention is directed towards focal elements, while holistic attention is distributed over the whole field. These styles bear similarities with exploitative and exploratory spatial search strategies, where the agent either spends more time in local resource patches or covers more of the field and spends less time in individual patches. Moreover, both mechanisms are affected by the statistics of the environment: diffuse resources lead to exploratory search while visual crowdedness evokes holistic attention. We hypothesize that search strategies and attentional styles are guided by related mechanisms. To test this, we prime people with a diffuse-resources foraging task (exploration) or a clumpy-resources foraging task (exploitation). Priming is followed by field-dependency tasks to measure subjects attentional styles. We predict that diffuse resources create similar effects to visual crowdedness, inducing holistic attention in subjects, as well as exploration.