

New Research From Psychological Science

April 22, 2016

Read about the latest research published in *Psychological Science*:

[Limits of Executive Control: Sequential Effects in Predictable Environments](#)

Frederick Verbruggen, Amy McAndrew, Gabrielle Weidemann, Tobias Stevens, and Ian P. L. McLaren

Studies have shown that bottom-up processes modulate performance in unpredictable environments, but is this also true in predictable environments? Participants completed a go/no-go task in which the trials alternated predictably. Before seeing each stimulus, participants had to rate the extent to which they thought the go or no-go stimulus would appear. During the task, the researchers recorded participants' motor responses to transcranial magnetic stimulation of the primary motor cortex — an indication of anticipatory influences that occur before the appearance of a stimulus. Although participants altered their expectations when a new sequence started, response times at the beginnings of the sequences were slower, and participants' motor responses were associated with properties of the previous trial rather than the current trial. These findings indicate that bottom-up processes also modulate actions in predictable environments.

[How You Use It Matters: Object Function Guides Attention During Visual Search in Scenes](#)

Monica S. Castelhana and Richelle L. Witherspoon

Although researchers know that objects are associated with specific locations within a scene, they are still not sure how this association occurs. In the second of several studies, participants were shown only a picture of an object (feature group) or were shown both a picture and a description of the purpose of an object (function group). The participants then searched a scene for the previously seen objects or for novel objects. Participants in the function group — but not the feature group — found previously seen objects significantly more quickly than novel objects and took shorter eye-movement scan paths to previously seen objects than to novel objects. The findings indicate that an object's function is related to that object's placement in a scene and that function information can be used to guide attention during scene searches.