New Research From Psychological Science

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

Behavioral Sensitivity to Reward Is Reduced for Far Objects

David A. O'Connor, Bernard Meade, Olivia Carter, Sarah Rossiter, and Robert Hester

Does spatial distance affect the ways people respond to rewarding objects? Participants received a reward for correctly identifying red, green, or blue squares and spheres presented in near or far space using a 3-D screen. They received a reward for correct responses, and the magnitude of the reward was linked to the color of the object. Responses for high-reward objects were more accurate and faster than were responses for low-reward objects, but only when the objects were presented in near space. This suggests that spatial distance influences people's sensitivity to rewards even when it is irrelevant to the task.

Separate Mechanisms for Perception of Numerosity and Density

Giovanni Anobile, Guido Marco Cicchini, and David C. Burr

Do humans detect number directly, or is number derived from the texture density of displays? Participants viewed a display that depicted two circular groups of dots located on either side of a fixation point. The group on the right contained a constant number of dots, and the group on the left contained a variable number of dots. The dot clouds varied in diameter, and participants had to indicate which dot cloud was more numerous or which was more dense. The pattern of responses indicated separate mechanisms for estimating number and density, suggesting that number is sensed directly and not derived from density estimations.

The Thatcher Illusion Reveals Orientation Dependence in Brain Regions Involved in Processing Facial Expressions

Lilia Psalta, Andrew W. Young, Peter Thompson, and Timothy J. Andrews

The authors examined the neural underpinnings of the Thatcher illusion — an illusion used to examine how faces are processed — by collecting fMRI data while participants viewed two pictures of the same face or different faces. The faces were normal or Thatcherized (eyes and mouth inverted), and the photos were presented upright or upside down. The observed differences in the activity of the superior temporal sulcus, which is involved in processing facial expressions, in response to changes from normal to Thatcherized upright — but not inverted — faces provide evidence that neural regions involved in the processing of facial expression are sensitive to orientation.

Unconscious Processing of an Abstract Concept

Zhicheng Lin and Scott O. Murray

Research has recently shown that certain visual features and objects can be processed unconsciously. To examine whether abstract concepts can also be processed unconsciously, the authors showed participants two objects that were the same or different shapes. The pairs of objects were presented quickly (outside of conscious awareness, nonvisible) or slowly (causing them to be visible). Participants were asked to press a button when the shapes were both visible and the same or when they were not visible. Responses to nonvisible stimuli were slower when the two objects were different than when they were the same, demonstrating unconscious processing of the abstract concept of same-different relationships.