

2:44 PM **Karen L. Hollis, Amber Hayden, & Margaret McDermott (Mount Holyoke College)**

Learning in Antlions: Anticipating a Long Wait

Antlions, the larvae of an adult winged insect, capture food by digging pits in sand and then lying in wait, buried at the vertex, for prey to fall inside. The sedentary nature of antlions' sit-and-wait predatory behavior and, especially, their innate ability to detect prey arrival, do not fit the profile of invertebrates that possess learning capabilities. However, we show that learning can play an important, heretofore unrecognized, role in this insect's predatory behavior. Once each day for 16 days, individual antlions received either a brief vibrational cue presented immediately before the arrival of food or that same cue presented independently of food arrival. Signaling of food enabled antlions not only to extract food faster, but also dig more efficient pits and molt sooner than antlions for which food was not signaled.

2:58 PM **Paula Roy, Carrie Blakeslee, & Jean Geary Boal (Millersville University)**

Conditional Discrimination Learning in Octopuses

Conditional discrimination, the ability to selectively respond to a stimulus based on a contextual cue, would be of clear utility for animals that use learning to navigate. Demonstrations of conditional discrimination in cephalopods have suffered from the difficulties of obtaining unambiguous behavior from subjects. Clear evidence for conditional discrimination in octopuses was obtained by providing prolonged (18h) exposure to two alternate maze configurations. Each maze configuration included two potential burrow sites, one open and one closed, and a variety of landmarks. No aversive conditions, other than the open maze itself, were provided. Within five exposures to each maze, each octopus (n=6) traveled directly to the open burrow upon entry to each maze, providing clear evidence for conditional discrimination. (Presented by Jean Boal)

3:05 PM **Kristy Lindemann, Colleen Reichmuth Kastak, & Ronald J. Schusterman (University of California, Santa Cruz)**

Exclusion Procedures Can Be Used to Assess Emergent Cross-Modal Matching in a California Sea Lion

The process of exclusion is demonstrated when a subject, in the presence of an undefined sample, chooses an undefined comparison as opposed to a familiar defined comparison. In the field of psycholinguistics the term fast-mapping is used to describe the same phenomenon and is often used to study early word learning in small children. Exclusion can be demonstrated both within and across the sensory modalities. Our current research with a California sea lion (*Zalophus californianus*), investigates cross-modal exclusion by using an auditory-visual matching-to-sample procedure. Following acquisition of auditory-visual associations using exclusion procedures, the presence of spontaneous learning outcomes were evaluated. The subject's transfer performance was significantly higher than expected by chance and generally not different from performance on familiar trials. This finding illustrates that training associations with an auditory-visual exclusion procedure can lead to successful and spontaneous cross modal transfer performances.

3:12 PM **Sarah A. Michalek, Marco Vasconcelos, & Peter J. Urcuioli (Purdue University)**

The Effects of Partial Reinforcement on the Ambiguous Cue Effect

The ambiguous cue effect refers to low accuracy on a two-choice simultaneous discrimination in which the S- in one task appears as the S+ in another, concurrently run simultaneous discrimination task. When selection of the S+ in the former task was partially reinforced, the ambiguous cue effect was enhanced to the point that pigeons' accuracy dropped below chance. By contrast, when selection of the S+ in the latter task was partially reinforced, it virtually eliminated the effect by producing high accuracy on the other simultaneous discrimination. These findings support the notion that value transfer from the S+ to the S- in simultaneous discriminations also plays a role in the ambiguous cue effect.

3:21 PM **Withdrawn**

3:28 PM **Marco Vasconcelos, Sarah A. Michalek, & Peter J. Urcuioli (Purdue University)**

"Work Ethic" and the Anticipation of Effort

Pigeons reportedly prefer stimuli preceded by greater effort. This "work ethic" effect has been attributed to a greater hedonic improvement in the shift from high effort to the stimulus that follows it, a contrast that can supposedly also arise from the anticipation of high effort. We tested the latter hypothesis by training pigeons on different simultaneous discriminations following high-effort (80 pecks) and low-effort (1 peck) work links that, in turn, were signaled by different stimuli. Differential effort expectations were evident in substantially longer latencies to peck the stimulus signaling high effort than to peck the stimulus signaling low effort. However, when given a choice between the S+ following the high-effort link and the S+ following the low-effort link, pigeons did not show a preference for the former. Likewise, no work ethic effect was evident in a group for which the high- and low-effort links were unsignaled.