analog to language (HAL) model has been used to analyze language in humans by encoding the complex sequential information in the language stream. Grammatical and semantic regularities emerge using a global lexical co-occurrence learning algorithm (Lund & Burgess, 1996). HAL and a simple recurrent network (SRN; Elman, 1990) were used to quantify contextual relationships in marine mammal vocalizations, primarily that of the bottlenose dolphin (*Tursiops truncatus*). In Experiment 1, the whistle sequences showed internal structure. In Experiment 2, several contextually dependent and meaningful behavioral dimensions are seen in the analysis.

• IMAGERY •

(5098)
Viewpoint Changes in Naturalistic Scenes Produce Automatic Interpolation. MONICA S. CASTELHANO, ALEXANDER POLLATSEK, & KEITH RAYNER, *University of Massachusetts, Amherst*—How do we represent viewpoint changes of a scene? When two viewpoints of a scene are viewed, a linked representation can be formed, so that new viewpoints falling in between the known viewpoints (interpolated) are part of the representation and should be less distinguishable than viewpoints outside the known viewpoints (extrapolated). Alternatively, each viewpoint could be represented independently, so that new viewpoints are easily distinguished whether interpolated or extrapolated from known viewpoints. To test this, two study images were shown from either the same or different viewpoints of a scene. Immediately following, participants indicated whether a test image was identical to a study image. In Experiment 1, there were many more errors for interpolated than for extrapolated views. In Experiment 2, this effect was still present when only the first image was tested. These results suggest a linked representation in memory that may be formed automatically even when detrimental to performance.

(5099)
Altering Test Instructions to Improve Women's Spatial Cognition Performance. MARYJANE WRAGA, MOLLY HELT, & LAUREN E. DUNCAN, *Smith College*, & EMILY C. JACOBS, *University of California, Berkeley*—Women exposed to positive stereotypes make fewer errors on a mental rotation task than do women who receive neutral information (Wraga et al., in press). The present study examined whether altering the context of the stereotype message could enhance performance further. Female participants performed the mental rotation task in one of four conditions. Prior to testing, participants in the general enhancement condition were exposed to a message stating that women's perspective-taking abilities are superior to men's. In the personalized enhancement condition, superior performance was narrowed to "women at all-female institutions." In the female-competitor enhancement condition, inferior performance was targeted to "women at coed colleges." Performance in all enhancement conditions was compared with that of controls, who received neutral information. Although all enhancement conditions showed significantly fewer errors than did controls, the magnitude of the improvement (5%) was constant across all groups. These findings suggest an upper limit to improving spatial cognitive performance via test instructions only.

(5100)
Perceptual and Psychophysiological Correlates of False Memory With Age. SAMANTHA C. OTERO, SAM B. HUTTON, & BRENDAN S. WEEKES, *University of Sussex* (sponsored by Brendan S. Weekes)—We compared false recollection of Deese/Roediger–McDermott lists varying input modality of pictures (color, grayscale, and line drawing) and written words, administered to healthy young and older adults. Semantic categories and list words were derived from the Snodgrass and Vanderwart (1980) set. Ratings were obtained for within list conceptual similarity of critical distractors and visual similarity between list items, using an online validation study. We predicted that structurally similar categories would generate more false memories than would structurally dissimilar categories in the picture condition, but we did

not expect an effect of structural similarity in the written word condition. Experiment 1 found effects of structural similarity between study and test items on false recollection for young adults in both modalities, but effects of structural similarity for older adults on false recollection of pictures only. Experiment 2 investigated these effects using an index of pupil dilation. Results suggest encoding difficulties for older adults.

(5101)
Neural Underpinnings of Individual Differences in Mental Imagery. MICHAEL A. MOTES & MARIA KOZHEVNIKOV, *George Mason University* (sponsored by Maria Kozhevnikov)—Research has revealed distinctions between object and spatial imagery (pictorial, high-resolution images vs. relatively abstract images of spatial relations among objects and object parts, often involving transformations) and has shown that such distinctions characterize individual differences in imagery. We investigated the neural underpinnings of such individual differences in imagery by examining BOLD signal data collected from seven object imagers and seven spatial imagers while they completed a visual memory task. Task trials consisted of encoding a line drawing, imagining the drawing, judging the presence of a global (e.g., vertical symmetry) or local (e.g., T-junction) property, and then resting. When imagining, object imagers showed greater activity than did spatial imagers in parietal regions, and spatial imagers showed greater activity than did object imagers in occipital and temporal regions. The findings are consistent with an efficiency model in which ease at solving a task is related to less neural resource consumption.

(5102)
Phenomenology of Autobiographical Memory in Blind Individuals. ENGIN YILMAZ & ALI İ. TEKCAN, *Boğaziçi University*—Visual imagery is argued to be the most important component of autobiographical remembering (Brewer, 1996). Research (e.g., Brewer, 1986; Rubin & Kozin, 1984) has shown that visual imagery is almost always present when one remembers autobiographical memories. We investigated blind and sighted individuals' recollective experience regarding word-cued autobiographical memories within the context of a basic systems approach to autobiographical memory (Rubin, 2005). Congenitally total blind and sighted participants recalled autobiographical memories in response to cue words. For each autobiographical memory, they filled out measures of recollective experience, belief, and component processes (imagery, narrative, and emotion). Results showed that the blind participants retrieved fewer memories than did the sighted participants. Moreover, autobiographical memories of blind participants were associated with higher auditory imagery and lower visual imagery ratings. Blind individuals' visual imagery was partially accounted for by spatial imagery. Moreover, blind participants reported stronger belief in the accuracy of their memories than did sighted participants.

(5103)
The Dynamics of Fictive Motion. TEENIE MATLOCK, *University of California, Merced*, & DANIEL C. RICHARDSON, *University of California, Santa Cruz*—Fictive motion sentences such as "The road runs along the coast" are interesting because they include a motion verb but describe no motion. In one view, their conceptual structure is static and similar to that of nonfictive motion sentences such as "The road is next to the coast" (Jackendoff, 2002). In another, it is dynamic, involving mentally simulated motion (Talmy, 1996). In two eyetracking experiments, participants viewed spatial scenes and heard descriptions about them while their eye movements were recorded. In Experiment 1, fictive motion descriptions produced longer gaze durations along the relevant trajector (e.g., *road*) than did nonfictive motion descriptions. In Experiment 2, a priming study, the effect was shown not to be the result of subtle differences in sentences. The work provides further support for the idea that fictive motion sentences include mentally simulated motion (see, e.g., Matlock, 2004), and offers novel insights into how nonliteral language influences visual processing.