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Looking for a Perceptual Schema: Effects of Changing Letters and Fonts on Recognition. THOMAS SANOCKI, *University of South Florida* (sponsored by Douglas L. Nelson)—Schemata have slots for representing details of instances, and a schema for letters may have slots for details of a font of letters. If so, then experience with some letters of a font may instantiate the schema for other letters of the font, but not for other letters of a new font. Instantiation processes were examined by measuring the speed and accuracy of perceiving short strings of unrelated letters.

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The Effects of Familiarity on Perceived Nonrigid Motions of 3D Objects. DALE S. KLOPFER, *Bowling Green State University* (sponsored by Kirk H. Smith)—Subjects watching a video of a rigid, 3D mask (of a face) rotating in one direction report nonrigid, illusory reversals of motion despite the availability of information for the object's correct direction of motion. The number of reported reversals with other objects decreases with familiarity. There were significantly fewer reported reversals with an inverted mask than with an upright mask; none of the other objects tested showed this asymmetry. This orientation dependent perceptual coupling seems best explained by familiarity.

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Subjective Work Load in Simultaneous and Successive Type Vigilance Tasks. JONATHAN P. GLUCKMAN, JOEL S. WARM, WILLIAM N. DEMBER, JUDITH A. THIEMANN, *University of Cincinnati*, & PETER A. HANCOCK, *University of Southern California* (presented by Joel S. Warm)—The NASA TLX was used to assess subjective workload in the performance of comparative discrimination (simultaneous) and absolute discrimination (successive) vigilance tasks with high and low discriminability signals. Overall workload was greater in the context of weak signals. Consistent with findings that vigilance tasks are stressful, overall scores indicated that subjects found the tasks to be taxing. A subscale analysis showed different components to be critical in contributing to the workload of the two tasks.

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Abruptly Appearing Clutter and Peripherally Precued Covert Attention Shifts. GARVIN CHASTAIN, RUTH WOHLWEND, CATHY DOHERTY, & CARL LANDOWSKY, *Boise State University*—Clutter density, similarity between the shape of clutter characters and that of targets, and whether clutter appeared in the paths between fixation and target locations were factorially combined with the delay between the appearance of a location precue and the target with clutter varied within each combination. Identification accuracy was the dependent measure. Results are related to those of other studies, as well as to early and late selection models of attention.

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Eye Movements of Developing Readers: Where Kids Look in Words. DAVID ZOLA, GEORGE W. McCONKIE, & JOHN GRIMES, *University of Illinois* (sponsored by George W. McConkie)—Thirty-nine first grade children read narrative text while their eye movements were monitored and recorded. Landing site distributions for words of different lengths were derived from the eye movement records. The data patterns conform to recent findings from adult oculomotor research. Such results suggest that the oculomotor system of first grade children is as well-developed as adults for the task of reading.

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Reaction Times to Simple and Complex Gratings. FRED KITTERLE & JOHN THOMAS, *University of Toledo*—Reaction time distributions were obtained to the presentation of a range of spatial frequency gratings presented either singularly or in pairs. Analysis of the reaction time distributions to the compound gratings indicated that they reflect the independent contribution of spatial frequency channels responding to the components in the compound stimulus.

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Fourier Descriptors for Shape: Effects of Adaptation on Discrimination Thresholds. JOHN UHLARIK, *Kansas State University*, & GEORGE GERI, *University of Dayton Research Institute*—Fourier descriptors (FDs) have been used by investigators in computer pattern recognition to discriminate and/or identify planar shapes. These descrip-

tors provide for both the analysis and synthesis of closed curves by obtaining Fourier coefficients of chain-encoded contours. Discrimination thresholds were obtained for FD stimuli for *shape* in a manner similar to contrast sensitivity functions for grating stimuli. Adaptation to a specific FD harmonic frequency produced a selective elevation of thresholds for the adapting frequency and closely related *even* harmonic frequencies.

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Relations Between Endogenous and Exogenous Control of Covert Visual Orienting. R. M. KLEIN, *Dalhousie University*—Exogenous control of attention toward peripheral cues completely overrides endogenous control in response to probabilistic information. "Spotlight failure" (choice RT with unlikely stimulus/response pairs may be insensitive to location information) is observed with endogenous but not exogenous orienting. A model including encoding and decision level mechanisms reconciles these findings. The model attributes "spotlight failure" with unlikely S/R pairs to masking of an encoding benefit at the cued location by a bias for the likely stimulus.

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The Face Detection Effect: Effects of Positional Uncertainty and Contrast. DEAN G. PURCELL, *Oakland University*, & ALAN L. STEWART, *Stevens Institute of Technology*—The Face Detection Effect (FDE) occurs when the detection threshold ISI for a normal face is shorter than that for either inverted or rearranged faces. The FDE is found even though subjects cannot report the type of face presented. The present study demonstrated that, when comparing Normal to Inverted faces, the magnitude of the FDE was directly related to positional uncertainty and inversely related to target contrast.

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Visual Size Constancy in Newborn Infants. CARL E. GRANRUD, *Carnegie-Mellon University* (sponsored by David Klahr)—Two experiments showed that newborn infants (1 to 5 days of age) possess visual size constancy: the ability to perceive an object's constant physical size despite changes in its distance and retinal image size. In addition, they found evidence that newborns can perceive objects' distances. These findings challenge strict empiricist theories of depth perception and perceptual constancy.

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Shape Generability: Cognitive Mediation in Maintaining Form Perception. MARY A. PETERSON, *University of Arizona* (sponsored by Julian Hochberg)—Cubes with patterned edges were used to examine whether structural knowledge (the degree to which the interpretation assigned to one shape component generates the interpretation assigned to another) influences perceptual organization. Faces of Cube A were constructed of different elements, providing differential knowledge regarding the two interpretations. Both faces of Cube B were constructed of the same elements. Using opposed-set procedures, Cube A was more stable than Cube B, reflecting more effective cognitive mediation.

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Visual Object Identification, Image Foreshortening, and Monocular Depth Cues. KEITH HUMPHREY, *University of Western Ontario*, & PIERRE JOLICOEUR, *University of Waterloo* (sponsored by Pierre Jolicoeur)—Recognition was disrupted in depictions of elongated objects in which the axis of elongation was foreshortened, despite the fact that object parts or components were not occluded. Viewing the foreshortened depictions on a texture gradient receding in depth improved recognition. Such depth cues may influence the selection of the major axis of the object and assist in mapping from a viewer-centered to an object-centered description. The results are discussed in relation to current theories of object representation and recognition.

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Are Frozen Metaphors Literal? Sentence Comprehension Measures. CATHY DENT & PAMELA OROSAN, *Miami University*—This study develops measures of sentence comprehension that distinguish frozen from novel metaphors. Items were puns, novel metaphors, frozen metaphors, idioms, and literal sentences; 12 of each. 120 undergraduates participated; half paraphrased sentences, half identified in sentences phrases with two meanings. Frozen metaphors and puns were often *identified* as containing phrases with two standard meanings. Novel