ERPs separated earlier for search after ellipses than after animals. Category conjunction produced ?tws› longer reaction times than the corresponding 'one-category' condition. Accordingly, we observed later target–distractor separation in the ERP for conjunction of ellipses with colour. Surprisingly, this was not the case for the corresponding condition with animals: based on electrophysiological findings we conjecture that subjects here tended to first categorize animals and then judge their colour. Our results indicate that category conjunctions delay ultra-rapid categorization.

◆ **How strong is a car's brand from a visual perspective? Searching for an objective measure**
C C Carbon (Faculty of Psychology, University of Vienna, Austria; also Faculty of Industrial Design, TU Delft, The Netherlands; e-mail: ccc@experimental-psychology.com)
Brands are one of the most valuable assets a company has. Successful branding means fast and accurate recognisability of the brand identity. Brand strength, however, is hard to measure. Several attempts to measure the recognisability of a brand already exist, mainly based on questionnaires and subjective measures. Here, I present an objective measure of visual brand strength based on similarity ratings of blended images of different products representing different brands. Via morphing technique, competing brands are blended in steps of 5%, which participants have to rate by similarity. The stronger the visual recognisability of a brand ie the visual brand strength, the longer it resists overlaid information from competing brands. The BBSI was tested within a simultaneous matching and a recognition task for measuring direct visual and memory-based brand strength demonstrating once again that research on basic research in psychophysics can stimulate applied research and consequently can create concrete applications in form of an objective visual brand strength indicator.

◆ **Recognising the actions of others is as fast as recognising objects**
S de la Rosa, A Chatziastros (Department of Psychophysics, Max Planck Institute for Biologial Cybernetics, Tübingen, Germany; e-mail: delarosa@kyb.tuebingen.mpg.de)
Visual recognition of object, faces, and animals is done with ease and speed (eg Thorpe et al, 1996 *Nature* **381** 520–522). Similarly important for human life is the visual recognition of social interactions (the physical interaction of an individual with others). Little is known about social interaction recognition and how it compares to visual object recognition. One prediction is that social interaction recognition, unlike object recognition, requires the recognition of how objects/humans are related to each other (eg, is the arm reached out for hitting or hand shaking?) in addition to the recognition of individual objects/humans. Hence, the visual recognition of social interactions might take longer. Here we compared the time course of visual object and social interaction recognition. We measured the presentation time thresholds to recognise static images depicting objects or social interactions with 80% certainty. We found the same presentation time thresholds for object and social interaction recognition. We conclude that social interaction recognition is as fast as object recognition.
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◆ **Attractiveness of faces of different age**
E Nikitina (Institute of Psychology, Russian Academy of Sciences, Moscow, Russia; e-mail: e.nikitina@psychol.ras.ru)
The colour photos of newborns, 7-year-old children, and 20-year-old students were used as stimuli. The observers were asked to categorize sex and estimate attractiveness level of each face. The experiment showed the high concurrence of observers' judgments of attractiveness of stimuli faces. Unlike the experiments with adult faces, no correlations was found between attractiveness and level of sex expression in faces. Girls' faces were estimated as more attractive than boys' faces in all ages. The images of girls (and newborn and 7-year-old) with probability of sex categorization at about 60% were called the most attractive.

◆ **The (un)usefulness of interactive exploration in building 3-D mental representations**
F Meijer, E L van den Broek¶ (Department of Cognitive Psychology and Ergonomics [¶ CTIT], University of Twente, The Netherlands; e-mail: f.meijer@utwente.nl)
The generation of mental representations from visual images is crucial in 3-D object recognition. In two experiments, thirty-six participants were divided into a low, middle, and high visuospatial ability (VSA) group, which was determined by Vandenberg and Kuse's MRT-A test (1978 *Perception and Motor Skills* **47** 599–601). In the experiments, the influence of four types of exploration (none, passive 2-D, passive 3-D, and interactive 3-D) on building 3-D mental representations was investigated. First, 24 simple and 24 complex objects (consisting of respectively 3 and 5 geons (Biederman, 1987 *Psychological Review* **94** 115–147) were explored and, subsequently, tested through a mental rotation test. Results revealed that participants with a low VSA benefit from

interactive exploration of objects opposed to passive exploration. This refines James et al's findings (2001 *Canadian Journal of Experimental Psychology* **55** 111 – 120), who reported a general increased performance with interactive as compared to passive exploration. Our results underline that individual differences are of key importance when investigating human's visuospatial system or visualisation techniques.
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◆ **Early visual areas anticipate load and location; the fusiform gyri differentiate task demands and grapheme status**
G Plomp, C van Leeuwen¶, A A Ioannides§ (Laboratory of Psychophysics, Brain Mind Institute, EPFL, Lausanne, Switzerland; ¶ Laboratory for Perceptual Dynamics [§ Laboratory for Human Brain Dynamics], Brain Science Institute, RIKEN, Wako-shi, Japan; e-mail: gijs.plomp@epfl.ch)
Functional specialization and flexibility to changing task demands are key characteristics of visual processing. Using magneto-encephalography (MEG) we studied pre-stimulus and evoked activity while subjects classified letters and pseudo-letters into prearranged response categories. Each response category consisted of a letter and a pseudo-letter, but in one task variation, classification was according to global stimulus shape (shape task) whereas in the other fine shape distinctions were relevant (identity task). The identity task increased pre-stimulus bilateral V1 activity and evoked larger responses in the right fusiform gyrus (FG) between 150 and 350 ms after stimulus onset. Implicit grapheme selectivity was restricted to the left FG, between 300 and 400 ms after stimulus onset. The results demonstrate that early visual areas can organize their activity according to expected task demands and predicted stimulus location. Furthermore, the results differentiate the dynamics of functional specialization for graphemes in the left FG from the evoked effects of task-dependent fine shape processing in the right FG.

◆ **A dynamic face-inversion effect**
I M Thornton, E Mullins, K Banahan (Department of Psychology, School of Human Sciences, Swansea University, UK; e-mail: i.m.thornton@swansea.ac.uk)
The face-inversion effect (FIE) refers to increased response times or error rates for faces that are presented upside-down relative to those seen in a canonical, upright orientation. Here we report that this FIE can be greatly amplified when observers are shown dynamic, rather than static faces. In two experiments observers were asked to assign gender to a random sequence of un-degraded, static or moving faces. Each face was seen both upright and inverted. For static images, this task led to little or no effect of inversion. For moving faces, the cost of inversion was a response time increase of approximately 100 ms. Importantly, this slowing occurred in the presence of form cues, cues that when shown statically, led to much faster responses. In control experiments, a difference between static and dynamic inversion was not observed for whole-body stimuli or for human-animal decisions. These latter finding suggests that the processing of upside-down movies is not always more difficult for the visual system than the processing of upside-down static images.

◆ **A computational model for shape classification**
J D Wilder, J Feldman, E Briscoe, M Singh (Cognitive Psychology, Rutgers University New Brunswick/Piscataway, USA; e-mail: jdwilder@ruccs.rutgers.edu)
We created a computational model for the representation of 2-D shapes, allowing shapes to be classified into broad natural categories, such as 'animal' or 'leaf'. Many shape models make implicit assumptions about the shapes in the environment that are not based on real-world measurements. To better connect shape theory to real-world shapes, we collected shape statistics from databases of leaf and animal shapes. An extension of the probabilistic shape framework of Feldman and Singh (2006 *Proceedings of the National Academy of Sciences of the USA* **103** 18014 – 18019) was used to construct probabilistic 'prototypes' corresponding to natural shape categories. These prototypes were then used for classification via the identification of the prototype most likely to have generated a given shape. The classification process depends on the topology of a shape's skeletal structure as well as the skeleton's metric properties, both of which are modeled probabilistically. The model effectively classifies novel shapes, and its performance also corresponds closely to data collected from human observers. The model enhances our understanding of the computational processes underlying natural shape classification by the human visual system.
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