
37th European Conference on Visual Perception Belgrade, Serbia 24 – 28 August 2014

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1988 Bristol (GB)

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Tuesday

we present data from a gaze contingent object recognition paradigm where objects to be recognised are presented such that the participants are constrained to look only at specific image locations that could be either (i) a region that was, or (ii) was not previously fixated during the preceding learning phase. The results demonstrate a significant behavioural advantage when participants view previously fixated image regions compared to viewing image regions that were not previously fixated during the learning phase. These results suggest a functional role of eye movements to extract high resolution information from image features in the recognition process.

◆ **Looking at planar views during active object visual learning: moments of stability**

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The planar bias in active object learning is a well-documented viewpoint selection preference: in adults, and infants, the proportion spent looking at planar views – viewpoints where flat surfaces are shown perpendicular to the viewer – deviates strongly from random selection. One hypothesis of the planar bias' functional role is that dynamic viewing around them is more informative – movements around planar views reveal more of the objects' structure; this hypothesis predicts more exploratory behaviours, for instance measurable in higher angular velocities of the main axis of elongation. We asked adults to manipulate 3D objects on a computer, using a mouse, for twenty seconds each, and recorded the object's 3D orientation and eye fixations (60Hz). We computed, per contiguous frames of dwell activity, inside a bin of the object's viewing sphere: duration, proportion of time with object not moving, mean angular velocity of the main axis, and number of saccades. Results show that counter to the initial prediction, viewing periods around planar views are more stable: duration is higher, time not moving is higher, main axis speed is lower, and there are more saccades. Put together, these findings suggest focused attention to planar views and learning of a static view.

[This research was funded by Fundação para a Ciência e Tecnologia (FCT) with Portuguese Government funds under the project PTDC/PSI-PCO/121494/2010 “Visual Object Recognition and Children's Self-Generated Object Views: Developmental Changes in Active Viewing“ and under the project Scope: PEst-OE/EEI/UI0319/2014. AFP was also supported by a Marie Curie International Incoming Fellowship PIFI-GA-2011-301155.]

◆ **Scene priming and location priming in scene-object consistency effects**

115 N Heise, U Ansorge (Faculty of Psychology, Universität Wien, Austria; e-mail: nils.heise@univie.ac.at)

Object recognition within scenes is better for semantically consistent objects as compared to inconsistent ones (for example: Biederman, Mezzanotte, & Rabinovitz, 1982): This might be due to the fact that visual search is more efficient for consistent objects as they occupy expected places. If solely visual search is responsible for consistency effects, they might be weaker (1) with repeated object locations, and (2) with repeated scene backgrounds. In Experiments 1 and 2, locations of objects were varied within a scene to a different degree (one, two, or four possible locations), and consistency effects were studied as a function of progressive numbers of repetitions of the backgrounds. Because repeating locations and backgrounds could facilitate visual search for objects, these repetitions might alter the consistency effects by lowering of location uncertainty. We a significant consistency effect, but there is no clear support for a modulation of location priming or scene priming on consistency effects. On the other hand our data indicates that the consistency effect might be strongly depended on the eccentricity of the target objects.

◆ **Model for the categorization of bottled soft drinks using their silhouette**

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In our daily life, we use our senses to acquire information about the objects that surrounds us. However, the information processing that allows the recognition and consecutive classification into categories of those objects remains unclear. In this study, we analyzed quantitatively and tested experimentally the visual properties of bottles silhouettes responsible for categorization in soft drinks. First, we took pictures of all personal bottles of soft drinks available in the local market. Then, we extracted the silhouette and analyzed its physical characteristics using a cluster analysis. The silhouette image analysis revealed the physical characteristics that separate the categories according to the real market.