43rd European Conference on Visual Perception (ECVP) 2021 Online

Welcome Address

Welcome to the 43rd European Conference on Visual Perception (ECVP2021)! The tradition of holding an annual European Conference on Visual Perception has its origins in the "Workshop on Sensory and Perceptual Processes" that was held in Marburg, Germany in 1978 and organised by Dick Cavonius, John Mollon, Ingo Rentschler and Lothar Spillmann. The following year, a second meeting was held in Noordwijkerhout in the Netherlands and that established the practice of holding an ECVP meeting in a different European town or city and organised by academics and researchers in the local University. Uniquely, ECVP has no permanent organisation and, as a consequence, each meeting has been different and reflective of the ideas and interests of the local organisers. But the underlying goal has remained the same: i.e. to provide a forum for the presentation and discussion of new developments in our understanding of human, animal and machine vision, and an occasion where empirical, theoretical and applied perspectives of visual processing are presented and open for lively discussion.

At those early meetings, most of the presentations were from researchers in the UK, Germany, Belgium, France, Italy and the Netherlands but very soon ECVP became a truly international meeting with participants from all over the world. As a result of Richard Gregory's friendship with Adam Gelbtuch and his publishing company Pion, ECVP established a close link with the journal Perception, and the journal has published the ECVP Abstracts from nearly every meeting since the 1980's. There have also been many changes to ECVP in the 43 years since that first meeting - changes in the topics of greatest interest as well as changes in the technologies that have allowed us to study perception in different ways.

However, the Covid-19 epidemic created possibly the most significant challenge that ECVP has ever faced - the decision of whether to hold the 2021 meeting ONLINE. At the end of March 2021 (just five months before the start of the meeting), a group of ~40 individuals (including many who shared their experiences as past organisers of ECVP) met on Zoom to discuss the pro and cons of holding an online ECVP. There were many different opinions but one thing became obvious - no single individual could possibly organise such a meeting in such a short amount of time. The result - a group of 11 of us (the "Team") offered to plan and organise an online ECVP2021.

As none of us had previously organised an online meeting, there were many challenges. One of our first decisions was to restrict the timing of the talk sessions to just three hours in the afternoon (CEST) so that these could be heard live by attendees from the west coast of the USA to Australia and New Zealand. Second, we wanted the talk presentations to be given live (rather than recorded) in order to make the meeting more like the friendly and positive atmosphere of previous ECVP meetings. Third, the decision not to charge conference fees meant that the website (www.ecvp2021.org), registration and abstract submission systems, Zoom channels, online poster platforms etc., had to be created and maintained directly by members of the organising team and their respective institutions.

We initially thought that the conference might attract ~500 Abstract submissions and we thought that there would be some 800-1000 registrations. As it turned out, there were nearly 650 Abstract submissions and over 1900 registrations. After an extensive review process conducted by the session chairs and scientific

a greater deleterious effect of noise in older people compared to young people and suggest that the SR-like phenomenon could arise at a lower level of external noise in older people.

Smooth Pursuit Eye Movements Alter the Contrast Sensitivity for Drifting Achromatic Gratings

Didem Alaşhan[1], Dilce Tanrıverdi[2], Mustafa A. Ekinci[2] & İnci Ayhan[1,2]
[1]Cognitive Science Program, Boğaziçi University, Istanbul, Turkey
[2]Department of Psychology, Boğaziçi University, Istanbul, Turkey
Email: inci.ayhan@boun.edu.tr

The detectability of a low-contrast luminance-modulated sinusoidal target abutting a high-contrast drifting inducer is impaired when the two gratings are out-of-phase. This suppression is stronger at the leading than at the trailing edge of the inducer motion. Besides retinal motion, how smooth pursuit eye movements, which are intrinsically linked to motion perception, interact with this motion-induced contextual effect is yet unclear. Here, we investigated the phase-dependent modulation of contrast sensitivity in both fixation and pursuit conditions using a luminance-defined low-contrast target (width and height: 1x1deg, drifting at 5deg/sec) centered 1.5deg above or below the fixation, the envelope of which was either static or moving horizontally (4.29 or 10.56deg/sec) across the screen. Two high-contrast inducers (width and height: 6.67x1deg) drifting at the same speed were presented at the right or left side of the target. Observers indicated whether the target, which was either in-phase or out-of-phase with inducer, had been presented above or below the fixation. The results showed that while eyes and the grating envelope were fixed, the phase-dependent modulation occured at both leading and trailing edges but in different magnitudes. However, during pursuit, the magnitude of the phase-modulation at the leading edge increased with the pursuit velocity when the gratings drifted in the same direction as the pursuit, a pattern which was reversed when they drifted in the opposite direction. These results indicate that the phase-modulation at the leading and trailing edge are modulated via different mechanisms and that the effect of pursuit on the phase-modulation is direction-selective. [This work was supported by the Scientific and Technological Research Council of Turkey (TUBITAK), Grant no: 218K282.]

Differential Eye Movements During the Autobiographical Recall of Places, Events, and Thoughts/Emotions

Paolo Bernardis[1], Michele Grassi[1] & David Pearson[2]
[1]Department of Life Sciences, University of Trieste, Trieste, Italy
[2]School of Psychology and Sport Science, Anglia Ruskin University, Cambridge, UK
Email: paolobernardis@units.it

Recent research has suggested an important role of eye movements for spatial scene construction during autobiographical recall. In the current study we asked 18 students from the University of Trieste to retrieve recent or distant autobiographical events in response to 6 cue words. Participants sat in front of a blank screen and eye movements were recorded while they described the place and event associated with each memory. Memories were classified using the Autobiographical Interview procedure in recall periods corresponding to the event, place, and thought/emotion descriptions. Comparison of fixations and saccades across these recall periods showed statistically significant differences in the following parameters. The duration of fixations during place descriptions was longer than that of event descriptions and thought/emotion descriptions. The number of fixations per second and saccadic amplitudes were lower during place descriptions in respect to the event descriptions and thought/emotion descriptions. Finally, the number of consecutive saccades in the same direction was higher during place descriptions in respect to the event descriptions and thought/emotion descriptions. This pattern of results is compatible with an exploratory behaviour produced during the recall of places characterized by sequences of short saccades in the same direction and longer fixation periods. Instead, remembering details about thoughts, emotions and events is characterized by larger and random saccades, and short fixations. These results support the hypothesis that autobiographical memory triggers specific eye movements associated with the reconstruction of visuo-spatial layout of scenes.

Eye movements reveal the role of attention in change blindness for shadows

Frouke Hermens[1] & Sunčica Zdravković[2,3]
[1]Open University of the Netherlands, Heerlen, The Netherlands
[2]Department of Psychology Faculty of Philosophy, University of Novi Sad, Novi Sad, Serbia
[3]Laboratory for Experimental Psychology Faculty of Philosophy, University of Belgrade, Belgrade, Serbia
Email: frouke.hermens@ou.nl

In a change blindness paradigm, participants are presented with two images (alternating or side-by-side) and are asked to detect a change created with digital image manipulation. A recent study has suggested that changes in cast shadows are more difficult to detect than changes in objects (Ehinger, Allen, & Wolfe, 2016). Research has also suggested that when judging faces, observers show reduced attention to cast shadows (Hermens & Zdravković, 2015). A plausible reason for change blindness for shadows is therefore that observers fail to attend the relevant areas in an image. We here test this hypothesis by measuring eye movements while observers freely view the images from Ehinger et al. (2016). To compare eye movements with change blindness in the same set-up we also asked participants to perform a change detection task where we presented images side-by-side and balanced the number of object and shadow changes. During free viewing, observers paid little attention to the relevant shadows and objects, but significantly more