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The 44th European Conference on Visual Perception (ECVP) 2022, Nijmegen, The Netherlands

The ECVP is a yearly European Conference in which researchers from all parts of the world convene. As its name implies, the conference centers around visual perception research and fields that connect to visual perception such as multisensory processing, attention, decision making, artificial intelligence, aesthetics etc. The overall goal of the meeting is to provide a forum for presentation and discussion of new developments in our understanding of human, animal and machine vision. Empirical, theoretical and applied perspectives are all encouraged.

The ECVP is a unique and lively conference, which travels through Europe and mostly takes place in a European university city, organized by a local team. Due to the Covid pandemic the edition of 2020 was skipped and in 2021 the conference was held online. See https://ecvp.eu for an overview of all past ECVP locations. In 2019, we pitched the Nijmegen proposal at the ECVP in Leuven, but we decided to really push forward just about a year ago (August 2021). We were really happy that we could organize an in-person meeting in 2022. So, that also our youngest colleagues could taste the pleasure and benefits of being together under one roof.

Planning a conference like this while the virus was still very much around was only possible because we could move almost completely to the Radboud University campus. We decided that the presentations (talks and posters) were, in principle, to be given on site in Nijmegen, but we also opened up science and intensified discussion, also for those who could not be in Nijmegen, by online postings during the conference (by using 'Slack') and by posting recordings of the lectures (made available at a later moment). We had approximately 650 participants from 43 countries. Over 5 days, we had a line-up of 3 keynotes, 6 tutorials, 26 talk sessions, 14 symposia, more than 300 posters, and a social program (like a welcome reception; an open 'illusion and demo' night, a conference dinner, a farewell party etc.). In addition, we had a grant-program to stimulate young scientists who were not able to travel because of financial reasons, special green travel grants, daily poster prizes and some extras like vegetarian lunches and a BBQ for all, and the choice between a university bicycle or a 5-day Nijmegen-area bus ticket. Of course, the core business of the ECVP is vision science, but we felt that especially this year, being able to socialize and to create time and space to meet up with our fellow scientists after so long was a big surplus.

As organisers we are thankful for the helpful cooperation of the Radboud University and the Donders Institute in getting things done. Organising is team work and we were able to built a team of enthusiastic staff members; the 'ECVP22 team'. Beside the ECVP22 team there were many other people who helped us out. We would like to thank people from the university catering, the media technique, the doormen, the cleaning team etc. We are also thankful to all our volunteer students, and we thank our sponsors who supported this event in a financial way. Last but certainly not least we got lots of help from colleagues in the field and participants by taking up various roles: as a reviewer, a symposium organizer, a tutorial teacher, or accepting a role as chair, or simply by sending in all abstracts (and paying the fees). As we all know, the presentations are the building blocks of a good scientific conference. It is all about communication, about exchange, connectedness. We will always remember the mere pleasure (and, yes, some stress ;-)) we had in organizing this event with our great team, but even more so we remember the pleasure that we noticed among participants in a vibrant, creative, fantastic and wonderful atmosphere. Thank you all!

Rob van Lier,
on behalf of the ECVP'22 team

ECVP'22 team

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More Information @ https://2022.ecvp.eu
In this ECVP supplement you find all abstracts of authors who gave their consent to publish their abstract.

Contents

Keynote lectures

Object-based attention effects are often explored with adaptations of the classical two-rectangles paradigm (Egly et al., 1994). Participants respond faster to a probe presented within a cued object than to a probe presented equidistantly within a different object. This response-time advantage is one of the most common behavioral measures of object-based attention, but it is hard to transfer to real-world scenarios and exploration behavior. In search of measures that allow for testing object-based selection in realistic scenarios, we designed two adaptations of the two-rectangle paradigm and investigated whether the kinematics of saccades executed across these objects reflect object-based selection. In both experimental adaptations, we used a double-saccade task: The first saccade target was instructed by a central cue pointing to one of the ends of an object; the second saccade was always directed to a neighboring target location, either in a clockwise or counterclockwise direction. The dependent variables were parameters of the second saccades, half of which were executed within the object, while the other half targeted a different object. We found a significant object-based effect on saccade kinematics: Within the same object, latencies were shorter, landing positions more accurate, and peak velocity higher. However, these effects were limited to stimuli with clearly distinguishable object features: Previous object motion history, realistic textures, colored outlines, and uneven polygon shapes. With a simplified two-rectangle design, saccades did not reveal same-object effects. We will discuss the benefits of enriched experimental displays for measuring object-based selection using alternative measures such as visual sensitivity.

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Cross-cultural differences in strategies of complex images visual search

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This paper compares the features of the visual search for the target symbolic image in the cross-cultural perspective using eye movements analysis. The subjects were introduced to a target stimulus (a website icon), which they were then to find in a 9x9 matrix filled with similar images. The matrix was shown 32 times, each time with new images. The study involved two groups: Russian students (n=26); Azerbaijani students (n=24). The search time for the target stimulus and the indices of the subjects' eye movements were recorded with the SMI Gaze & Eye-tracking System. Differences in the search time were insignificant, although the Russian sample was somewhat faster. Differences in the oculomotor activity were highly significant ($p<0.001$). The search in the Azerbaijani sample featured shorter fixations (198.8 vs 260.6 ms), and higher amplitude (4.9 vs 3.1 deg) and high-speed saccades (126.8 vs 93.5 deg/s) compared to the subjects from the Russian sample. A possible interpretation is that representatives of Azerbaijani culture tend to use the ambient mode of visual processing, while representatives of Russian culture rely more on the focal mode of visual processing. The ambient mode provides a wider coverage of the space or context of the search. The focal processing mode allows one to focus more on individual objects. In general, the results obtained are within the framework of the R.Nisbett and T.Masuda (2007) model, which describes differences in the perception and interpretation of information in different types of culture. [The research is supported by RFBR project # 20-013-00674]

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Investigating non-verbal bids of attention with a virtual human: an online study of gaze.

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A key to building social relationships is the alignment of mental representations through joint attention, but the details are poorly understood. We investigated the role of eye-contact and collaborative gaze between real and virtual (VH) humans in a series of seven online experiments. Our task required participants to work with a VH to complete two puzzles. On each trial, a puzzle piece, hidden from the participant, was presented to the VH and the participant observed the VH's gaze behaviour derived from human recordings. In a 2x2 design for (i) collaboration and (ii) eye-contact, this behaviour (i) either directed the participant's attention to which of the puzzle boards the piece belonged or was uninformative, and (ii) either did or did not involve eye-contact. Participants responded to these behaviours as quickly and accurately as possible by indicating to which board they were being directed. In experiments 1-4, VH speed and construction (with or without body) were manipulated but had no effect on the general pattern of results. Later experiments (5-7), aimed to address limitations by increasing trial numbers, using computer-controlled gaze, and re-defining the sequences. For the data collected (1-4), responses were faster and more accurate for collaborative trials, but slower for eye-contact revealing an unexpected aftereffect of time-consuming cognitive