Lyudmyla Kovalenko

Winner of the Katharina-Heinroth-Preis 2013

Congratulations to Lyudmyla who was awarded the Katharina-Heinroth-Preis 2013 by the Gesellschaft Naturforschender Freunde zu Berlin (GNF) for her Master thesis on "The Role of Thalamus-mediated Corollary Discharge in the Perisaccadic Localization". The award is given annually for students of the three Berlin universities for their outstanding research in natural sciences with a biological focus (Bachelor, Master, and Diploma theses).

Lyudmyla's project in the research group 'Brain and Behavior' (Prof. Christoph Ploner) focused on the interplay of two internal reference signals, corollary discharge and visual reafference, during perisaccadic spatial localization. Our subjective visual experience is spatially and temporally continuous. In reality, vision is neither; it is fragmented into two phases: fixation when the eye is stationary and fast saccades that move the eye. Vision occurs at fixations and is actively suppressed during saccades. Although vision consists of discrete fixation images, we retain an impression of visual continuity, a phenomenon called perceptual stability. A key element in the maintenance of perceptual stability is the intention to make a saccade, which triggers an internal signal called corollary discharge (CD). CD represents a copy of the motor command sent to sensory centers. There, it serves as an internal reference, informing other brain areas about impending movements. CD also interacts with other internal references, such as visual reafference. For saccades, CD originates in oculomotor centers and is relayed, primarily via medial thalamus, to cortical areas such as frontal eye field. Using eye tracking, a patient with a focal ischemic lesion in the medial thalamus was tested. His deficit was homologous to lesions induced in monkeys, which were shown to selectively impair CD. Notably, despite his previously demonstrated CD deficits, the patient's ability to locate objects shown briefly (8 ms) around saccade onset did not deviate systematically from that of the control group. It was concluded that around saccade onset, CD is not the only reference signal at work, but likely interacts with other visual reference signals, in particular with visual reafference.

Further Information
http://www.gnfb.de/

News from the Open Access Front-Line

By Nikolas Karalis, MSc Student Medical Neuroscience

It has been a year since the launch of the Cost of Knowledge campaign, which we covered in a previous issue of the CNS Newsletter (vol. 5, issue 2) [1]. As of February 2013, the number of signatories has exceeded 13000, including some of the world's most prominent mathematicians.

In response, Elsevier dropped the support for the Research Works Act, a bill introduced at the US House of Representatives that threatened the open-access principles stated by the NIH's Public Access Policy. Additionally, they are now allowing free access to older issues (articles older than 4 years) of some journals. The major success of the boycott has been raising awareness regarding academic publishing and the open access movement.

In the aftermath of the boycott campaign, a lot remains to be done in order to establish alternatives that will allow the move towards a free and open academic publishing system. Along these lines, some of the mathematicians behind the Cost of Knowledge campaign have joined Cambridge University Press in a venture to launch the 'Forum of Mathematics', a new set of open access journals. The first issue is expected to be published in the next few months [2].

At the same time, eLife, a novel joint initiative of the Howard Hughes Medical Institute, the Max Planck Society, and the Wellcome Trust, aims to establish a new, open-access venue for the most important advances – from basic biological research to applied, translational, and clinical studies. The first issue of the eLife Journal is already out and it is expected to evolve into a high-caliber academic journal for the life sciences [3].

Another initiative currently in its infancy is the EpiSciences Project. This platform aims to set-up arXiv overlay journals that will provide the editing and refereeing process, while dropping the expensive processes of copy-editing and typesetting. The first journals are expected to be launched in April [4].

As a final note, this article also serves as an obituary for Aaron Swartz (1986-2013), the American open access activist. He was facing up to 35 years of prison time for downloading and releasing academic journal articles from the online repository JSTOR. His death was highly publicized and generated a number of waves in the public discourse regarding the topic of open access.

References

[1] http://www.thecostofknowledge.com
[2] http://goo.gl/TR5AB
[3] http://elife.elifesciences.org/
[4] http://episciences.org/