

10 Bucks Eye Tracking Experiments: The Hungarian MapReader

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This paper presents the latest results of the first cartographical eye tracking experiments at the Department of Cartography and Geoinformatics, Eötvös Loránd University (Budapest) in Hungary. For our research experiments we have developed a special software, called the MapReader, which is able to record input data provided by our self-made, low cost eye tracking system. In March 2013 we used simple thematic maps made with two different GIS softwares to examine difference of the mental process of free and task-related map reading. From the fixation data gathered from 120 sessions of 40 research subjects we made various visualizations, including so-called 'heat maps' and experimental, 3D models. Although widely used, both the methods of the creation and the term itself was the subject of some discussion during and after the ICA Dresden eye tracking workshop. Reconsidering our visualization method and using historical cartographic models we developed various color coding and enhanced 3D visualization of fixation data. In the second series of research, in the autumn of 2013, we displayed data visualizations to examine and compare the efficiency of various 2D and 3D visualisations. We will also present the latest version of our research equipment and introduce the second, improved version of MapReader software.

Key words: Eye tracking, Cognition, Visualisation, 3D maps

Comparing Paper and Digital

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Maps are not limited anymore to the paper medium media are still frequently used, it is interesting to study presented on these two media. In total, 32 participant paper and digital maps, and are familiar with the symbols. Each participant saw the topographic map on 1 : 10 000 scale. Each participant would not know the region by heart. Four participants saw the map on a digital screen. Deviating behaviour while studying the map. The digital and paper maps saw the same region twice.

On each of the six stimuli, the participants had to locate the executed 'in real life' on a (topographic) map: finding the location of the executed movements are recorded, using a remote eye tracking system in front of a 50inch TV screen.

Because the eye tracker was not used in its standard way, we conducted extensive analyses. The selection and a visual analyses regarding potential translations of the map. Comparing the user's attentive behaviour on the two maps found on the digital maps, but that the distributions of the digital and paper medium is a first step to be able to compare the map user (effectiveness and efficiency).

Key words: User study, Eye tracking, Digital maps, Paper maps

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