Cognitive Visualization Commission Business Meeting Notes – 16.12.2021

Attendees:

1. Pyry Kettunen, co-chair, leading Geospatial Representation and Interaction research group, Finnish Geospatial Research Institute
Specialized on spatial cognition of map reading, landmarks and wayfinding, web maps, and cartographic user interfaces and visualization.

2. Merve Keskin, post-doc researcher, Geospatial Representation and Interaction research group, Finnish Geospatial Research Institute.
Specialized in cognitive cartography, cartographic user experiment design and neuroscientific user testing methods (i.e., eye tracking, EEG).

3. Liqiu Meng, ICA Executive Committee liaison person, vice president (Chair of Cartography Department of Aerospace, Aeronautics and Geodesy Technical University of Munich)

   Expertise on cognitive experimental studies & visual analytics, sensor-based mapping. She works on the inter-connectivity and the communication within the outsider society of the ICA's 28 commissions with the aim of extending the scope of traditional cartography. She is involved in the working group of ICA research agenda in which they update the current research agenda, therefore, conducting further surveys on what has happened in the last 20 years so that projections can be made for the next 20 years – The issue is planned to be released by ICC 2023 ICA.

4. Florian Ledermann, researcher & lecturer, PhD Candidate, Research Group Cartography, TU Wien
Experienced in AR and information visualization and developing web applications

5. Jan Brus, Assist prof, Department of Geoinformatics, Palacký University in Olomouc
Working on eye tracking, 3D models and user issues, VGI, spatial analyses and modelling, cognitive aspects of uncertainty visualizations, and cartography

Some remarks from the meeting:

- Pyry Kettunen opened the meeting by mentioning the mission of the commission and its collaborative efforts with ICA Commission on User Experience and Visual Analytics. He presented the past events of the commission and mentioned that the new proposals for the workshops are welcomed.

- Liqiu: "Cartography might be geo and earth-oriented science and we deal with a lot of geodata but also increased amount of user data which makes our position advantageous." She is working on establishing an open-platform for user tests which is sustainable and ethically reliable – publishing datasets to convince larger audience whether our experiments are statistically significant. It is important to provide incentive when we recruit volunteers to convince them, organize user studies in a standard way, and better outreach to the whole world especially Africa.

- Although there exists a research agenda there is no standardization for our user experiments. For the transparency, reproducibility, and credibility of user studies, preparing some benchmark for datasets is essential, also guidelines on how to apply emerging methods (e.g., breaking down the process into several steps that are fully transparent)

For building standardized user experiments, we can publish online as a commission on topics such as (i) what the best practices are and (ii) how to contribute through open-source system to run online user experiments: e.g., There is an ongoing effort: Remote eye tracking benchmarking – best practices

Maybe we can start with a common pool and first, we can make the datasets available.

We can publish a resource on "Doing Cognitive Research on Cartography: A Text-book " dedicated to educational/teaching purposes – maybe around 20 contribution (and can be updated every 10 years): Long-term project

Challenge: Finding a funding to make the book open-access

We also need education about experimental design such as statistics and scientific power.

- It is important to think the ways on how we can get the students start quickly with the research.

- It is very hard to get funding for cartographic research, therefore interdisciplinarity is essential for funding applications. We can start with creating a common pool of working together and to overcome technical issues, a little workshop can be organized on how it would happen, what is the best way for everyone. In this context, website https://cogvis.icaci.org/ (resources) can be updated.

  In this funding proposals/ideas pool of the commission or even a pre-consortium, the research challenges can already be on the table and when we see a relevant call, we can apply the call with the ideas from the pool (also advantageous for other continents to be involved)

  What is important to get funding is expertise. Collaborating would also be essential for young researchers.

  Applying for EU Horizon projects collaboratively within the commission, therefore, first, building an efficient process of preparing such proposal so that each partner share roles equally. On the hand, actively searching and finding the correct calls and communicating them within in the commission.

  Creating a globalized network where we share some daring dreams, new ideas and emerging technologies, lessons learned (e.g., what does not work and what actually works), legislations, calls, grant topics within all regions in the world to open up our minds and eyes.

- UN and ICA are partners: We have to discuss what items can be shared with UN, they might be help for our visibility within the countries outside of our reach.

- Notification on Special Focus Issue of the International Journal of Cartography on the State of the Art & Science in Cartography: https://viz.icaci.org/2021/07/¨

- Concluding remarks: We need an action plan to scale up and accelerate these processes.