March 22, 2018

Personal GPS-based navigation devices have firmly substituted the use of paper maps, public signage, and occasional advice from local residents. The time and effort saved through this shift is unquestionable. However, computerised wayfinding support yielded problems uncommon before. Users fail to remember a route followed repeatedly. Navigators face complete disorientation when the device suddenly malfunctions. Tourists do not recognise scenes from the routes they have travelled. And yet, users trust this new technology even when they are being led into life-threatening situations amid common-sense knowledge suggesting otherwise.

Computerised wayfinding support relies on offloading cognitive activity onto an external aid and delivering the minimum of required information at the right place and time. Self-localisation and spatial updating are skills intrinsically involved in solving wayfinding tasks but are not required by the GPS-based devices. As a result, support provided by computerised wayfinding assistance is incompatible with the natural ways in which humans explore, learn, and interact with new spaces.

This workshop aims at exploring the possibilities for embedding wayfinding support systems in human everyday experiences. In order to achieve that, functional features of wayfinding support need broadening: guiding the user to efficiently and successfully navigate their body is barely the first necessary requirement. The main variables distinguishing between more and less successful systems will be their compatibility with spontaneous cognitive strategies, and integration with context-dependent tasks tied to wayfinding.

This also requires rethinking the performance metrics used to evaluate such systems. Users' efficiency, speed, and number of mistakes are important, but not without considering what they learn, how they incorporate new information into their spatial knowledge of varying certainty, how flexibly they are able to use this knowledge in alternative contexts, and how independent of the wayfinding aid they become as a result. Of crucial importance is the task-related context in which navigation is embedded, since rarely (if ever) navigation is performed for navigation's sole sake.

We hope that the following papers accepted to the workshop proceedings are indicative of the growing appreciation of the aforementioned issues. They represent different methods with which researchers explore in-the-wild wayfinding behaviour and spatial cognition of the users, as well as the focus shifting onto variables indicating learning that happens with support of the wayfinding aids.

Four papers were accepted. Credé and Fabrikant's contribution explores the benefit of visualising global landmarks in a wayfinding aid, focusing on the working memory of the navigator. Bauer and colleagues studied the use of orientation information in sketchmaps that were drawn after an indoor navigation task. Ooms and Van de Weghe describe a crowdsourced set of indoor route instructions and an approach with which they aim to automatise the generation of human-like path descriptions. Closing this book section, a contribution by Wang and colleagues focuses on wayfinding aids that already exist in the environment but remain omitted by the visualisations and instructions produced by personalised technology. We hope the reader will find this selection informative and inspiring.