Visualization of Human Space Appropriation in Urban Public Parks

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Scope/Topics (as per website)

- Visualization of the built environment for planning and decision-making
- Interactive exploration of dynamic processes, models and simulations in cities
- Integration and evaluation of interactive visual representations for city or regional planning scenarios
- Using visualization for various related applications to cities (like crime mapping, transport, etc.)
- Visualization of social and technical networks

Preferred Format

- Oral presentation and discussion of academic paper
- Demonstration of software possible, but not essential

Abstract

In this contribution, I focus on the different visualization methods that were employed during all phases of a case study research project (www.geo.uzh.ch/nfp54/index.html). The research project deals with the usage of small urban public parks and is interdisciplinary in nature, employing both quantitative and qualitative methods. It has the aim to improve the quality of life for urban citizens by fostering socially sustainable space appropriation in those parks.

A socially sustainable appropriation of park space by urban citizens reflects urban diversity and plurality of lifestyles, and thereby strengthens integration and participation. In contrast, processes of exclusion and domination are not sustainable and produce persisting conflicts of usage. We assume that design and management strategies have a significant influence on the patterns and process of space appropriation.

In order to adapt design and management strategies, it is a prerequisite to understand the process of human space appropriation. Therefore, one aim of this research project was to collect representative information on individual park use, in order to extract knowledge on intensity and variability of individual park use. This has already been accomplished in the context of the case study: Over the span of three years, detailed spatio-temporal data of human space use and appropriation in three public parks in Zurich was collected. This data is at a very high resolution. Furthermore, a model of human space appropriation has been developed that allows a quantification and subsequent representation and analysis within a GIS. The collected data was subsequently analyzed with various spatial and temporal analysis methods, using this model of space appropriation.

During all phases of the research, visualization played an important role in facilitating thinking and guiding the work. At the beginning, interactive visualizations helped to explore the large amounts of data to detect interesting patterns, generate hypotheses and guide further analysis. Then, after the quantitative analysis, a visual-qualitative interpretation lead to a synthesis of the results, which were subsequently visualized for the presentation to various audiences.

In this contribution, I will present the various visualization methods employed during the research, and their suitability for different purposes using a simple yet effective evaluation scheme. I also will discuss the possibilities of dynamic versus static representations of the spatio-temporal processes that represent usage and appropriation of park space.

Finally, the aim of this work is also to simulate human space appropriation and guide the design process of new public parks. The research has recently entered this new stage, and I will place emphasis in the presentation on the role the visualizations might play during the design and construction of a park, taking into account the heterogeneous target audiences of researchers, domain experts, and users. Which visualization environment and techniques are especially suited for knowledge construction and decision support?

References

Ostermann, F. and Timpf, S. (2007): Evaluating Sustainable Space Appropriation in Public Parks; in: Proceedings of the 12th CORP Conference on Regional Planning, Vienna

Ostermann, F. and Timpf, S. (2007): Modelling Space Appropriation in Public Parks; in: Proceedings of the 10th AGILE International Conference on Geographic Information Science, Aalborg

Ostermann, F. (under review): Modelling, Analyzing and Visualizing Human Space Appropriation; PhD Thesis, Zürich

Website of the Project: http://www.geo.uzh.ch/nfp54/index.html