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# Mapping Spatial Relations, Their Perceptions and Dynamics

The City Today and in the Past

 Springer

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# Preface

Cities have been producing their own maps for purposes such as representation, control or orientation, right from the beginning of the fifteenth century, if not before. The introduction of geo-information systems and Google-maps has given rise to the firm belief that it is possible to represent, in an objective way, our spatial environment, especially with regard to the cities we live in. While mapping and representation technologies have been constantly changing, the results have mostly remained the same, i.e., static and objective (or misleadingly objective) images of a city. These kinds of maps would seem to fail to take two major aspects into consideration: first, the evolution of urban form for which a dynamic map, a film, or a dynamic 3D-model might provide more adequate means of representation and second, socio-spatial relations, i.e., the significance of forms and places, including perceptions of cities (as well as their perceived changes) which will always differ according to social, gender-based, internal/external factors, or other points of view.

Current research into historical and cultural studies on people's perceptions of sites and spatial arrangements, together with their discourses and interpretations, has proved to be essential for a deeper understanding of cities. If we take these findings into consideration, i.e., concerning the diversity and evolution not only of urban morphology itself, but also of spatial relations and people's perceptions of these relations, the following question arises: how should we design maps? Are geo-information systems the road ahead or are they a cul-de-sac?

The volume's focus is, therefore, not on the mapping of (static) urban space (past and present) but on the following topics: the potential mapping of perceived urban space, spatial hierarchies as a consequence of social usages (by a variety of active participants) and spatio-temporal changes as a result of factors such as demographic urban growth and decline, urbanization projects especially in the peripheries, shifts in the center-periphery relationship, destructions, and, finally, subsequent reconstruction, etc. (both in the present and in the past).

The recent debate in space and spatial theory in geographical as well as in social and cultural sciences has shown that we can no longer reduce space to concrete, built space such as houses, but that we should distinguish different space types, their constitutional processes, order, use, and representation. Twenty-five

years ago Bernard Lepetit, a French historian, had already suggested that we should consider space as a configuration according to which a society, by ignoring or by believing to know what it does, still makes a choice among the past spatial organizations (Lepetit 1986).

As we assume that space is not a pre-set, given entity but something that is socially constructed, we propose to use the concept of “spatial relation” (instead of “space”), which may encompass the formation of spatial configurations and hierarchies arising from social interaction, but also from spatial practices and perceptions.

As this volume contains not only several case studies but also essays on methodology, it is clearly aimed at a wide-ranging readership reflecting a great variety of diverse interests. However, the one element unifying all the various contributions is focused on the theme of towns and cities. Within this historical perspective on cities, the special interest concerns the history of urban transformations with regard to the city’s demographic and social aspects, but, most importantly of all, however, with regard to spatial factors. The subdiscipline, the history of urban planning, will be touched upon in cases such as when the question arises as to how certain urban forms came about. Topics concerning the perception of these forms together with practices involving the appropriation of urban spaces belong to the historical anthropological or media science disciplines. Topics concerning the possibilities of visual presentation of past and present urban spaces involve data-based cartography and geoinformatics. Taken as a whole, the papers in this volume also contribute to the problem as to how space–time changes can be adequately presented graphically and/or visually. However, this does not imply that we are concerned merely with a simple visualization or illustration of spatial or space–time phenomena, but that we are more concerned with the visualization of social phenomena, which are difficult to portray even via a textual medium. The great advantage of using data-based maps or generally computer-based methods is that social phenomena in the past or today can become visible by these methods. At the methodological level, this volume sees itself as a contribution to an epistemology of spatial change. The considerations presented here may result in the production of a new model for mapping urban changes and spatial relations referring to the past, present, and future. This new model would, therefore, be an appropriate reaction not only to the fact that the majority of the world’s population will be living in towns and cities but also to the consideration that cities are social spaces as well as being both perceived and represented spaces.

Half the contributions in this volume are based on papers given at a workshop at the University of Erfurt, which took place on the 18th May, 2012 and which has provided the title for this collection of essays, involving the following authors: Bernard Gauthiez, Manel Guàrdia Bassols, Richard Rodger, Leif Scheuermann,

Ekkehard Schönherr, Wolfgang Spickermann, and Olivier Zeller.<sup>1</sup> Representatives from various disciplines were brought together to discuss new methods of spatial analysis and modes of representing changes in perceptions. Additionally, the volume has been supplemented by contributions given by Urška Perenič and Benjamin Vis who also participated in the conference, and by Susanne Rau, the project leader in Erfurt. Benjamin Vis's mediation enabled us to obtain contributions from Peter C. Dawson, Shawn G. Morton, Meaghan M. Peuramaki-Brown, Stephen Read, and Jeffrey D. Seibert, who were participants at the “Assembly for Comparative Urbanisation and the Material Environment” (ACUMEN)<sup>2</sup> and were part of the network which grew out of this assembly. These later contributions have enriched the volume by supplementing and extending these themes, yet remaining within the spirit of the original parameters set by the Erfurt conference. Even though some individual contributions were regrouped, this is the reason why we decided in favor of retaining the basically tripartite workshop structure: 1. Maps and Technology, 2. Mapping Cities: Lyons and Barcelona as Case Studies, and 3. Mapping Humanities.

The first part of this volume is mainly concerned with the technological aspects of projects already in existence which deal with the cartographical representations of cities and their development as well as with urban social space and its uses. In addition, the volume contains discourse on the methodology involved in presenting socio-spatial relationships.

Richard Rodger's presentation of the *Visualizing-Urban-Geographies* (VUG) project gives an example, which shows how historians and geographers can successfully work in collaboration with each other. This project enables the public to have online access to georeferenced historical maps and to be able to make comparisons of the maps with one another and with present-day geographies. Using Edinburgh, the Scottish capital, as his example, he explains how new historical insights can be gained by integrating additional spatial data.

Leif Scheuermann adduces theoretical considerations to the general themes on how to design and develop a co-productive spatio-temporal information system. Its central focus is on Webble technology, which can take the first step toward enabling a computer-based historical science to develop. Both the potential and the limits of the input of this technology do not seem at the moment to have been fully established.

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<sup>1</sup> Georg Gartner, Professor for Cartography and Geo-Media techniques at the Vienna University of Technology and President of the International Cartographic Association—ICA, was also a conference participant. In Erfurt his paper was on the EmoMap project concerning the emotional spatial perception in navigational systems for pedestrians. Further information on EmoMap can be found in the ‘Infonetz’ of the Österreichische Forschungsförderungsgesellschaft: <http://www2.ffg.at/verkehr/projekte.php?id=754&lang=de&browse=programm>. Accessed 1st September, 2013.

<sup>2</sup> University of Leeds, UK, 12–13th December, 2012: “Digital methodologies for social research on processes of urban landscape development”.

In the third contribution, Shawn G. Morton, Meaghan M. Peuramaki-Brown, Peter C. Dawson, and Jeffrey D. Seibert present a method to enable the visualization of socio-spatial interactions to take place in cities, which can only be investigated by archeological methods. Taking Copan, a Maya city in Honduras, as their example, they show how, despite the lack of archival material, it is possible to gain information on the spatial practices concerning the movement of actors as well as their social constitution and control.

The final contribution of the first part also arose from an archeological context. Benjamin Vis proposes the application of Boundary Line Types to investigate and categorize urban spaces which have wide variations in their social connotations and functions. In the first instance, he takes Chunchucmil, a Maya city in Mexico, as his example. However, this process can be generalized and thus be applied even to archivalized western cities such as the southern English city of Winchester, which Vis takes for his example.

With the help of studies on Lyons and Barcelona, the second part deals with the transformation of point-by-point localizable evidence (which historians have found mainly in early modern community, church, and court acts) into spatially referenced cartographical presentations of historical urban and socio-spatial questions.

From their studies lasting over several decades, Bernard Gauthiez and Olivier Zeller present their results for the early modern city of Lyons (France). The authors evaluated extensive series of municipal archives and then transferred the results into a geo-information system. As a result, the system led to a new perception of the historical city; in addition, this also meant that the spatial distribution of economic factors could now be compared with social milieus, thus providing greater clarity for the understanding of political processes.

Manel Guàrdia Bassols has compiled the research results of his investigations on medieval and early modern Barcelona (Spain) with the support of Sergi Garriga's mapping. As with the investigations of Gauthiez and Zeller, Guàrdia's results are also based on archived sources. His main interest concerns movement and stability in the city's population, but he also focuses on the influence of architectural changes on the city's general direction of development and on the relationship between social grouping and spatial differentiation.

The third part of this volume concentrates more on cultural science-based perspectives and topics. Here, the main concern is on constructions and concepts of space on the one hand and concrete urban spaces on the other, the mapping of which is connected with the specific demands of individual cases.

Susanne Rau's focus is on the subjective spatial aspects of Barcelona as experienced by travelers, who described the city in their travelogs. This also involves different techniques for capturing urban space and the various notions of its structure. Finally, the problem arises as to how far both subjectively perceived spatial relations and urban spatial transformations can be mapped.

Stephen Read's contribution takes a more philosophical stance as he is interested in the phenomenology of space and the subject-object relation in the world. Read argues against bipolar concepts, which emphasize a strict division between a subjective mind-based world on the one hand and an objective physical world on

the other and in opposition to this dichotomy, he proposes an argument which allows for a reciprocal interpermeation of the two worlds. This has led to new insights into our understanding of social space and its potential for mappability.

Urška Perenič's contribution introduces a literary geographical research project entitled "The Space of Slovenian Literary Culture" to the volume. The investigation and mapping of the places of birth, life, and death of Slovenian writers has led to a broad perspective, which is more focused on interurban reference points and networks than on internal structures within cities. The result, among other things, has highlighted the spatial conditionality and dependency pertaining to the literary production of Slovenian authors.

Ekkehard Schönherr's essay is the third and final contribution on Barcelona in the present volume. He presents diverse structurizations of urban space varying according to functional requirements, which can be found in early modern sources. These results have led to some new considerations on how to map historical urban perceptions.

As so generously promised at the Erfurt workshop of May, 2012, Wolfgang Spickermann has offered his commentary on this volume. As highlighted by Spickermann, two points also seemed to be of particular importance to the editors: first, that the so-called eHumanities involve far more than the electronic evaluation of texts; second, that data-based dynamic maps have great potential for historical cultural sciences.

Finally, we are delighted to express our thanks to the Deutsche Forschungsgemeinschaft (DFG) (German Research Foundation) without whose funding of travel costs for guests from other countries, the international workshop would not have been possible. We would also like to express our gratitude to the editors of "Lecture Notes in Geoinformation and Cartography" for accepting us into their ranks, which has enabled us to present our research results to a wide readership in both a printed and in digital form. A second debt of gratitude is owed to the DFG for an extra fund to cover the publication costs. Last but not least, thanks are due to John Gledhill who, with great élan, took over the task of proofreading the English contributions and of translating individual essays. The whole project was made possible not only by an additional grant from the University of Erfurt but also because of the University's support in many other ways.

Now it is left up to the readers interested in these fields to decide how the collaboration between historical cultural sciences, cartography, and geo-information systems can be continued in the future.

Susanne Rau  
Ekkehard Schönherr

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