

Commentary

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The fact that eHumanities together with digital Humanities can generally be put onto an equal footing with computational linguistics is reflected in the allocation pattern of institutional funding in Germany during the last few years. In line with this new direction, almost to the exclusion of all others, only those projects which are concerned with the assessment and analysis of texts in the very broadest context were being and still are being supported. Numerous representatives from the humanities such as the German Association of Historians (Verband der Historiker und Historikerinnen Deutschlands) have called for a radical re-think in their subjects and have highlighted the fact that eHumanities are by no means solely concerned with textual analysis.

This is also the direction taken in the present volume. In this book, the enormous value (historical) maps have as a re-source will be demonstrated by a mixture of theoretical argumentation and concrete case studies; it will also be shown how mapping can be linked to textual sources and finally, to what other uses intelligent GIS-systems can be applied outside the field of the historical sciences.

If the so-called “linguistic turn” and “cultural turn” have brought about an interdisciplinary awareness opening up humanities to linguistic and cultural studies, then this has manifested itself with the topics of time and **space**, which has further led to a very valuable new direction for the Geographical Sciences. In his contribution, Richard Rodger shows the enormous range of possibilities for historians which emerge from the “historical mapping” of Great Britain by using “open source mapping”. Rodger defines this process as a “spatial turn”. This approach opens up completely new perspectives for the use and evaluation of well-known source material by setting this data into a direct, spatial context. Amongst other things, his project “Visualising Urban Geographies (VUG)” has presented a GIS-based social history of the Edinburgh of the 19th and 20th centuries entitled “Mapping Edinburgh’s Social History (MESH)” which impressively demonstrates the advantages to be gained (not only for the humanities) from combining digitalized source materials with GIS-based map layers.

During the last few years, the introduction of WEB 2.0 together with the possibility of working alongside voluntary data suppliers has led to a rapid increase of geo-data in the Internet. Projects such as Open Street Map or Wikipedia are impressive results of this “crowd sourcing”. However, for the academics, the use of

this kind of data constantly gives rise to questions of quality and reliability and, on the other hand, there is a need to be able to bring together data gathered from a variety of heterogeneous web sources onto one platform. In this context, Leif Scheuermann's contribution shows how the Webbletechnology developed in Japan is extremely useful as a platform for the combination of the most diverse data systems and as a technology for the cross-referencing of digital analytical methods. For this process, the so-called webbles (web-based lifelike entities) can be introduced and then developed. Webble technology is based on the idea that digitalized visual objects can be "crossed" with one another and thus produce functionally viable new objects so that this creates the ideal platform for the combination of diverse analytical procedures. Webbles enable users to process and distribute encapsulated or – "wrapped" – existing data resources and to combine individual media objects by the direct manipulation of processes such as "drag", "drop", "copy", and "paste", so that new objects can be combined and created without having to possess any special programming skills. Scheuermann also describes meta-data models and ontologies which allow for a more or less automated quality management. As a technological platform, Webble has opened up a wide range of possibilities to the scientific community, which is why this technology should be developed further on account of its applicability to eHumanities. For this wide-ranging enterprise, the "Interdisciplinary Center of eHumanities in History and Social Sciences (ICE)" was founded at the Max-Weber-Center of the University of Erfurt in order to become a research association involving academics from various universities and research centers.

In the first instance, maps and atlases provide the visual means for presenting geographical information. On the one hand, they serve to store, organize and construct geographical data, but this medium can also give visual form to more geographically locatable information taken from various fields such as history, politics and economics. Traditionally, maps have always been purely static objects; however, a dynamic visualization of processes depending on periods in time is an absolute desideratum not only for historical research but also for research purposes in both the social and political sciences. A variety of serially-based data covering longer periods of time obtained from a wide range of similar spatial sources is needed for a better understanding of the processes of long duration in historical societies, which cannot be adequately portrayed merely in a linear-based statistical evaluation (as in time-lines). By allocating a specific period of time to each object, a great variety of processes can be visualized in such a way that the numerous connections stretching over a long period of time can become both visible and tangible. The more recent GIS-based technologies are attempting to follow these paths even though these routes cannot always be pursued systematically as is, however, the goal of the "Adaptive Interactive Dynamic Atlas (AIDA)", (which is also being researched at the ICE in Erfurt). These technologies are also being used to be able to describe pedestrian movement in the ceremonial centers of the Maya culture in Honduras at various periods in time (Shawn G. Morton, Meaghan M. Peuramaki-Brown, Peter C. Dawson, and Jeffrey D. Seibert); and working

within a space-time relationship, they have been impressively applied to the urban development project carried out by Benjamin N. Vis of the University of Leeds.

The case study dealing with Barcelona's urban development over a long period of time demonstrates in a most impressive way the advantages of a presentation of geographical sources covering the demographic, economic and political development of the city from the 15th to the 19th century as in the analysis carried out by Manel Guardia Bassols and Sergi Garriga. On the one hand, only in this way the dynamic processes of urban development can be given a visual form and thus allow for 'presentability', but, on the other hand, it can also be shown how people (the actors) perceived their surroundings at various points in time. The contribution on the urban development of Lyons (Bernard Gauthiez, Olivier Zeller) in the 18th and 19th centuries is on similar lines, but covers a shorter 'distance' in time. Here, with the aid of a data bank of dated archive materials such as tax registers, census materials, planning applications, ownership changes etc., GIS-based mapping layers can be generated for any chosen point in time within the whole area of the city so that the social, architectural and political changes in the city can be rendered visually. These case studies are able to demonstrate the enormous advantages dynamic maps produced from data banks have over what up till now have been the usual static theme-based maps.

Ekkehard Schönherr's contribution shows that it is absolutely essential for this enterprise to work out generally accepted standards for dynamic maps. Maps are basically dependent on their respective databases. The source material needs to be sufficiently informative and to be suitably adaptable to a proper database so that it can be visualized. It goes without saying that there should be a spatial component (or in other words, be locatable) and finally, there must be enough material to provide sufficient relevantly informative material. The two case studies referred to document what a daunting task it is to work through huge quantities of materials, but, in that case, the long-term gain is much greater. Similarly, the example of Barcelona (Susanne Rau) shows that, whereas the two models of urban history just referred to result in clearly definable space concepts and structures, this clarity no longer applies when movement in space together with the perception of space and its concomitant changes are taken into consideration. All this implies that particular demands are now being made on processing data for dynamic GIS-based maps, all of which still needs to be validated in concrete projects.

Maps are always interpretations of a space based on subjective experience. The GIS technology leads to the immediate supposition that an apparently unquestionable geometrically and mathematically objective analysis needs to take place. However, Stephen Read's critical essay shows that the boundaries between "subjective" perceivable space and quantifiable space can be absolutely fluid and that our perceptions of our surroundings can, in turn, be influenced by the application of the new technologies.

To return to the remarks made at the beginning of this commentary: even the literary analyses undertaken by the classical DigitalHumanities can, in certain cases, have a spatial dimension and be given visual form in a time-space relation-

ship. A combination of data mining with geographical or cartographical information systems and network analysis system is still, however, a desideratum for future research. The first beginnings in this direction can be seen Stanford University's project "Republic of Letters" (<http://republicofletters.stanford.edu/>), which, together with other institutions, is working in co-operation with the University of Erfurt's Research Centre based in Gotha. Urška Perenič's contribution offers another concrete example of using cartographical representation and analysis to present the biographies of Slovenian writers.

All the contributions in this volume clearly demonstrate the enormous scope of database-supported dynamic maps using GIS-technologies. If, in the future, a great number of users who may lack background knowledge in this direction should succeed in being able to manipulate this technology, perhaps via the Web-ble platform, so that they could adapt the information made available in this way to their specific research interests, then this would really be a tremendous leap into the future. As long as information can be mappable, the encyclopedia of the future lies with maps that can be generated dynamically and on which the whole the relevant background material is available for both free linkage and visualizations.