Digital narrations of urban history

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The introduction of new information and communication technologies for the documentation, cataloguing, analysis and interpretation of the built heritage offers the possibility to integrate traditional investigations with new research dynamics and to propose useful solutions in the various research stages. It represents a support for the experimentation and the application of methods that involve multidisciplinary skills, which find in this context the possibility for integration.

Research that targets historical studies using new information and communication technologies continues to develop worldwide. This discussion is on the transformations introduced by the introduction of digital tools and methods in the urban domain of historical research.

Over the last decades, urban historians have acknowledged the benefits of digital techniques for describing and analysing urban heritage content in its various forms. The "spatial" approach to urban history has grown stronger as well, also due to the increasing awareness towards digital cartographic supports. New insights, concepts, models, have found application in numerous urban history GIS and Web-GIS projects. The use of these technologies enables us to manage, compare and share huge amounts of information about the city. The possibility of integrating into a single digital platform historical sources of different nature and origin implies the need to adopt innovative solutions. Discussions on the impact of all this "digitization" and on its effective usefulness have multiplied with the proliferation of projects resulting in digital outputs such as websites, interactive exhibits, museums or any form of mediated digital heritage content. In addition, digital approaches to urban history entail problems related to the reliability, accuracy and precision of the historical investigation "product", obtained with the use of digital technology. Such problems require the responsible exploitation of the analytical tools and a profound knowledge of the historical sources, in order to prevent jamming and discrepancies that are, in most of the cases, difficult to assess.

The scope of the session "Digital narrations of urban history" was to compare at international level different approaches of the use of new technologies in historical research, focusing on methodological questions and efficiency aspects. The presentations that composed the session were a starting point for a consistent discussion on digital technologies and their interfacing with the historical sources (cartographic, documentary, iconographic, and so on) as well as their capability to comprehensively characterize urban landscapes, which are considered as a unifying and overarching concept, whose historical reconstruction enables the knowledge of the city and the transmission of its memory.

The session was structured around broad research lines that illustrate the ways in which digital technologies may be of particular use to city historians, that include: digital processing, (data collection, their storing and sorting); digital analysis and interpretation (the use of Geographic

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Information Systems as a tool for analysis and interpretation); digital communication (map collections, digital map libraries, archives, web).

Eleven case studies illustrated digital narrations of urban history according to three main arguments. A first group of essays focused on methodological aspects of the use of digital technologies in different domains of the restitution of townscape and landscape history. In particular, scholars pointed out the fact that currently available digital technologies, such as augmented reality or virtual visualization, give to the historian the opportunity to express and represent the outcome of the research through innovative ways which can be used to improve the awareness of places and to transmit their meanings through explicit forms of representation: the results of these experimentations are definitely very interesting and effective.

Analytical tools such as Geographic Information Systems (GIS) enable for new ways of integrating historical maps with other geographical and descriptive information. A growing range of geo - referenced maps, digital elevation data and relevant software has allowed technologies for 2-D and 3 - D visualization to become much more impressive, accessible and realistic. These relatively recent developments, lead us to discuss the on the importance of "scientifically supervised" use of new technologies.

To this regard, some applications of virtual rehabilitation carried out in the historical centre of Rome were illustrated by specifying the historical-analytical reconstruction methodologies and the "principles of authenticity" followed to ensure reliability to the work, so that in virtual recreation projects it will be clear the difference between elements derived from historical documentation - with proper distinction between the various sources used - from those modelled in analogy with the context. The opportunity to set up and validate a methodological protocol that would lead to a uniformity of resource utilization and expression of the research content was discussed in this occasion.

The analysis of the urban space, highlighting the existing connections between the data obtained from different historical sources, in order to develop new insights, was illustrated through a case study on the city of Catania in the 19th century. The thematic rendering based on descriptive cadastral data sources showed how the transposition in cartography of space data of a historical nature, in order to produce useful and readable maps, can be also undertaken through technological instruments other than those of the Geographic Information Systems (GIS).

Another case study addressed from the methodological point of view digital methods for the history of landscape in the middle ages. This diachronic research carried out in the area of Subacio, in central Italy, experiments a tool for the rehabilitation of the history of landscape, correlating toponymy and notarial sources with the morphological analysis conducted on historical and contemporary cartography as well as with archaeological data. The study showed how praedial place names originate, through successive transcriptions, from republican and imperial land ownership.

An interesting analysis of historical cartographies, taking into account the specific mapping criteria and its embedded political background, was offered in a case study on the diachronic analysis of the history of the military landscapes of Skopje and Bitola (Republic of Macedonia). The study analysed the interaction between the military and civil society in the two study areas across the centuries, by making use of archival sources as well as through the creation of novel interpretative maps whose building criteria were discussed.

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Another group of essays focused on how specific digital technologies are influencing the methods of integration and analysis of historical data through a range of techniques including new forms of data handling and representation based on digital cartographic supports. From a purely practical perspective, the community of urban historians is already well served by GIS techniques and similar applications.

Information on landscape transformation and the factors influencing it is contained in many historical sources – cartographies, manuscripts, aerial imagery, old photographs, historical books, people's memories, and so on. Papers were presented illustrating methods of integration between different data types in unified information systems that are able to offer to the user high quality end products. Case studies pointed out the growing opportunities for dynamically integrating maps with other information using the web, the new ways of visualizing and presenting historical cartography, as well as questions related to the metadata. Case studies concerned the atlas of the ancient Ostiense area Harbour, the GIS of the historical cadastres of Parma, the GIS of the historical cadastre of Rome, and a Project on the vanished Czech towns and villages.

The last group of essays brought insights on digital technologies providing access to historical research contents. The focus was placed on the audience, those who receive and experience the resulting digital output such as in a museum or gallery, website, interactive exhibit or any form of mediated digital heritage content. The impact of digital heritage was discussed in relation to the mobilization of heritage content for diverse audiences.

Papers were presented on the growing opportunities for dynamically telling the history of the territory through multimedia and interactive tools, developing new ways of visualizing and presenting memorial and imaginative knowledge. This was the case of the Museum of Archaeology and the territory of Mamoiada (Sardinia). Another example was the project of narrating the history of the built heritage in the city of Indaiatuba (San Paolo – Brasile), through a smartphone application that includes a web-GIS and the management of a number of QR Codes placed on buildings of historical interest.

As might be expected, the topic of this session inspired a mixture of papers, most of which presented reports of specific projects and techniques or the results of applied research. The city and the territory were described from many viewpoints, processing complex historical information through IT tools. The usage of digital technologies was not limited with any historical period, as there were contributions dealing with ancient and medieval territory as well as with early modern towns and cities or landscape transformations in the XX century. Research topics went across different disciplines, encompassing the fields of history, urban history, archaeology, cartography, geomatics and engineering.

While it could be argued that perhaps most of this content could have been presented at specialized colloquia, including those devoted to professional cartography and surveying, the history of cartography, GIS, and so on -, the ability to unite disparate fields through a clearly articulated focus on digital technology in the context of the urban heritage was uniquely valuable. The urban history and digital technology are both large and growing fields, and their synthesis at this workshop provided not only a unity of purpose, but also new ways of invigorating the numerous research interests. Although most of the theories underlying modern computerized approaches have long traditions in the history of cartography and geography - let us think of, for example, cartometric techniques, the empirical analysis of map content, and the

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use of choropleth mapping in examining spatial distributions - the new digital technologies allowfor innovative and easier methods of pursuing the established lines of enquiry.

Nevertheless, "spatiallization" of historical phenomena puts on the discussion table a number of questions. Many digital technologies are not intended to be primarily of value to the urban history, but rather are formulated for other disciplines, such as archaeology, geography, urban planning and so on, having practical non academic applications. Therefore we should ask ourselves which would be the margins of adaptation of these technologies in order to meet the specific needs of historical analysis in urban and territorial contexts. We also should ask ourselves what would be the theoretical and methodological impact of the recurrent use of the information technology on the work of the historian of the city and the territory. Over the last decades there has been been an evolution in the relationship between the city historian and the data used for analysing spatial phenomena. Undoubtedly there is great enthusiasm about the availability of large amounts of data, produced and managed trough digital technologies. This is witnessed also by the increasing number of applications and conference papers, which would allow for a "top-view" survey and classification of case studies in digital methods of urban history.

There is no need any more to explain the reasons why it is useful to use digital technologies, create map portals or publish on-line. The effort from now on should be that of producing results that contain methodological innovations, in order to acquire scientific credibility and academic visibility both in the fields of urban historical studies and information technologies.

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