Mapping Landscapes in Transformation

Multidisciplinary Methods for Historical Analysis

Edited by
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POSTFACE

Mapping Historical Landscapes in Transformation

An Overview

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In this postface overview of this edited volume, I have been asked firstly to highlight key themes; secondly to elaborate on them from my own experience of approaches to townscape and landscape research; and thirdly to identify areas that were not so prominent in these collected papers but deserve inclusion in a holistic overview of current research in these fields.

Social interaction

We are treated to an insightful chapter analysing mobility in a regional historical environment by Sanne Maekelberg with the sixteenth- early seventeenth-century travels of Duke Charles of Croÿ. His letters reveal political structures, his changing career, aspects of contemporary strategic conditions, and the world of leisure.

Let me try to widen the field to embed this into other approaches to social Interaction in the urban and rural environment.

Anthropologists have demonstrated the importance of face-to-face communities with an upper limit of around 150 people (Dunbar 1996). Many historical rural societies use village fission to preserve this form of society. It requires constant out-marriage to survive (Bintliff 1999). Even in modern urban societies this 'Dunbar' threshold persists; the average number of Facebook contacts is 175!

If a village rises to 500-600 or more inhabitants, it can become mostly in-marrying. Social stability now requires some kind of horizontal or vertical social stratification. On a global level these corporate communities tend to show emergent

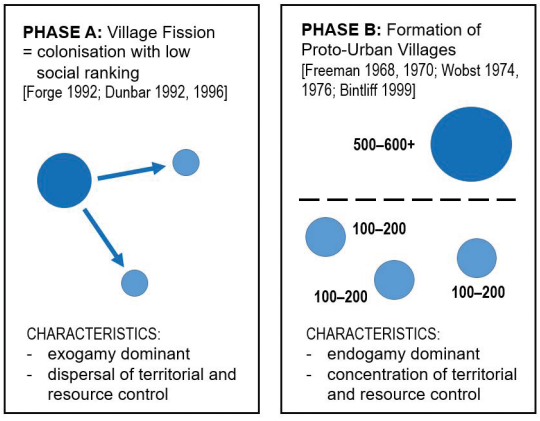

Fig. 1: A model for the transformation from a face-to-face settlement to one largely endogamous and ripe for the development of a corporate community. Numbers refer to population range of settlements (from Bintliff 1999: fig. 4.10).

properties of an urban or even city-state character (Bintliff 1999) (Fig. 1). Wendy Davies (1988) documented this process amongst the Early Medieval villages of Brittany.

It was the historical geographer Ernst Kirsten (1956) who demonstrated that the typical city state or *polis* of ancient Greece had usually arisen in this fashion, calling it a *Dorfstaat*. Eberhard Ruschenbusch (1985) took this further statistically with his calculations for the population and territory range for this '*Normalpolis*': of the 700-800 minimum city-states of the Classical Aegean for which data are available — 80% have populations of 2000-4000 people and maximal territories of 5-6 km radius, thus a mere one hour walk to the city-state borders. Importantly frequently 70-80% of citizens lived in the Polis centre (Bintliff 1997), since territory size was so small, allowing an unprecedented degree of citizen political involvement.

The transition from village to city life brings dramatic cultural changes. Winfried Schmitz (2004) outlines convincingly how the Greek villager Hesiod (ca. 700 BC) represents at the dawn of European literature, in his poem on a farmer's year, the *Works and Days* (Ἔργα καὶ Ἡμέραι), a form of communal peasant morality embedded in a limited range of expected behaviour enforced by group verbal and physical action, and a belief in punishment or blessing by the gods. This is already contrasted with town morals. Modernising societies (as Classical Athens most famously would become), have diverse opinions and lifestyles and open discourse,

so here the old members of society cannot compete, whereas traditional village societies rely on norms handed down across the generations.

Luis Bettencourt's (2013) global analysis of modern urban behaviour likewise found that while the number of our close contacts may stay similar to the Dunbar threshold, we engage with a far wider spatial network and with people of far more varied lifestyles, roles and ideas.

Social network analysis

Sanne Maekelberg's study of historical correspondence also introduces the current vogue for Social Network Studies (Kadushin 2012). This rapidly expanding field, which began in Sociology, but has since expanded throughout the Humanities, focusses on the importance of studying patterns of relationships that connect social actors, using quantitative and graphic approaches.

However, as Hans Beck (pers. com.) reminds us, we must invert the telescope to document how individual settlements, indeed individuals, participate in these wider interactions, with the next house, the next village, the nearest town, out to ever more distant regions, rather than assume that the existence of chains of links to ever-widening communities absorbs most of the thoughts and practices of human agents.

Lieve Donnellan (2016) has carried out such a sophisticated exercise, through a statistical analysis of the grave goods and burial customs of the Iron Age cemetery on the island of Pithekoussai off the coast of Tuscany, supposedly a massive urban entrepôt manned by Greek and Phoenician traders. Her Network Analysis (Fig. 2) clearly showed that the dominant community present was actually the indigenous Tyrrhenian protohistoric population, alongside a smaller immigrant community, but one which was gradually adopting elements of Greek and Phoenician culture.

Space syntax

In a keynote lecture to the preceding conference (not published in this volume), May Yuan introduced the concept of analysing social space in the built environment. Probably the most advanced research programmes in this field are those carried out within the framework of space syntax through the work of Bill Hillier and his followers in University College, London (Hiller and Hanson 1984; Hillier 1996).

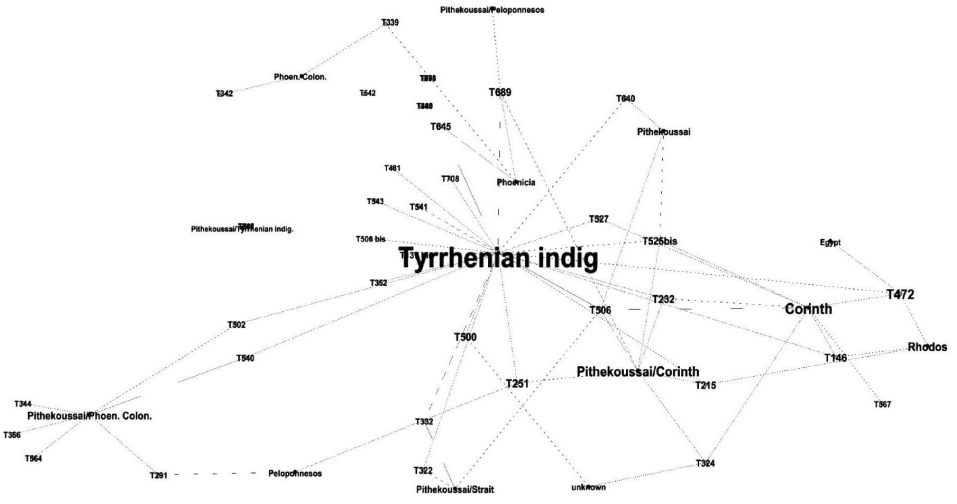

Fig. 2: Network Analysis of the grave goods and burial customs of the Iron Age cemetery on the island of Pithekoussai, Tuscany (Lieve Donnellan, 2016: 139).

Hanna Stöger's (2011) space syntax study of an apartment plot in ancient Ostia, the port of Rome, begins with access graphs. Natural paths of movement can be computer simulated with repetitive avatar agents (Fig. 3).

She adds a visibility analysis through the block. Her wider conclusions link the concept that people make the built environment to the complementary concept, buildings make people. This was a city neighbourhood at the height of its productivity, which was a good survivor in its original planned form over several centuries, because of its spatial structure, since this prevented 'gentrification' which occurred with most other housing blocks (*insulae*). For example a 'two-line logic' pulls people from the street space into the inner space of the *insula*, creating successful interaction inside the *insula*. It was also embedded in a diverse active larger neighbourhood.

Marlous Craane (2013) has analysed the historical development and regional rise of the town of 's-Hertogenbosch in the Netherlands using urban and regional space syntax approaches. Her analysis follows the hierarchy of streets in the historic town ranked by ease of movement, and she also relates the town to the road and waterway routes in its region, ranked by degrees of connectivity and ease of movement.

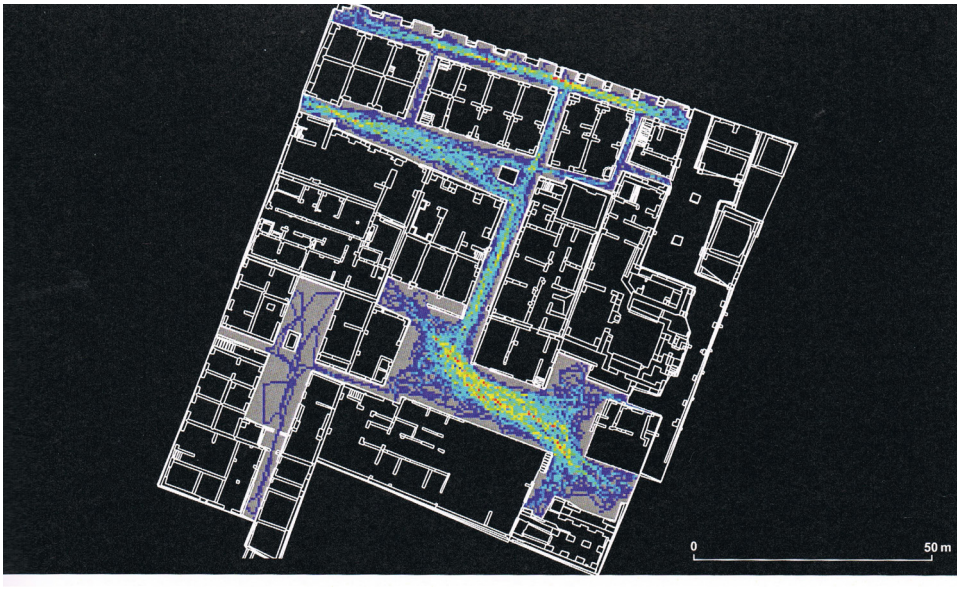

Fig. 3: Natural paths of movement of space syntax in an apartment plot in ancient Ostia (Hanna Stöger, 2011: 195).

Urbanism, central places and the organisation of landscapes

Jeroen Poblome, Frank Vermeulen and their associates have elaborated on the scalar analysis of the structuring of human settlements in town and country in ancient Italy and Turkey, from agents to state-sponsored initiatives, deploying complex multi-scalar GIS reconstructions. Arlo McKee and May Yuan use varied layers of GIS data to present a historic native site in Texas, to illuminate issues of preservation and public awareness of a major monument in their midst. Bieke Cattoor has challenged the modes of mapping modern interventions in the built environment of South-West Flanders. This is in many respects a deteriorating environment, and to counter this she uses maps illustrating the region's development over time across the nineteenth to twenty-first centuries, but also innovatively maps options to offer alternative and more positive futures.

Although no longer popular with geographers after their Post-Modern turn, the empirical study of urban hierarchies remains a very lively issue for those of us trying to understand the city patterns of Antiquity and the pre-Modern world in general. Key questions are: how many cities, where are they, how large, what exactly is their functional role, and how do they interact with one another?

Geographers have long charted the empirical range of influence for traditional villages, regional market towns and cities: thus the market town sphere of attraction or 'human catchment' was commonly 2-3 hours' radius or 10-15 kilometres (Bush and Bracey 1955).

These issues are central to the recently completed ERC project at Leiden University (*Empire of 2000 Cities*) in which all the towns of the Roman Empire have been catalogued and analysed. Norman Pounds' (1974) classic distribution map of official towns in the European parts of the Roman Empire already raised issues with the apparently distorted urban cover. Tønnes Bekker-Nielsen's (1989) urban classification by intercity distance for the Roman Western Provinces showed that towns in his classes A and B were close enough (comparable to Greek polis intercity distances) to fit well into classic marketing radii. But clearly in large areas of the Empire where intercity distances were far larger (his classes C to E), unofficial central places were needed to service local rural populations. Martin Millett's (1995) study of Roman small towns in East Anglia identified such a phenomenon in Roman Britain, of numerous unofficial small towns that must have arisen as 'emergent phenomena' in response to rural demand.

A similar landscape restructuring is seen in Roman Sicily (Bintliff, in press). The Greek period island has a regular network of cities. Roman conquest was followed by a dramatic loss of cities with new towns on the coasts, leaving the hinterland of the island almost bereft of official towns for the rest of Antiquity. In their place developed a series of unofficial central places in close relationship to wealthy estates, probably founded by landowning magnates to service their dependent workforces.

A typical Classical Greek town in the Aegean has: 70-80% urban, 20-30% rural share of the population. A typical Roman town in Italy has: 20-30% urban, 70-80% rural share of the population. We are currently working on the concept that in some Mediterranean landscapes Romanisation meant streamlining towns to more widely-spaced (and at times fewer) urban foci of elite landowners and regional servicing, especially linked to interregional trade. We see this as a form of economic rationalisation linked to a commercialising economy.

Contemporary geographers are deeply suspicious of quantitative, rule-seeking approaches such as space syntax, reminiscent of the passé New Geography, but the subdiscipline is based on empirical studies and incorporates phenomenological perspectives. Even less popular is research into the interaction between cities in an urban network, symbolised by the famous or infamous and also puzzling observations produced by charting city sizes against their hierarchical rank, to

observe agreement or deviations from the Rank-Size Rule. In an ideal urban system following this model, cities when ranked by size would map onto a logarithmic series, or power law, in which the second-largest town would be half the size of the first, and so on. The commonest explanation for such a pattern would be a complete integration of the individual economies of each town into the entire urban system.

This curious model would not be taken so seriously were it not to agree with many Early Modern city systems, wholly or partially, for example the United States since the later nineteenth century. France Guérin-Pace (1995) illustrates the common deviation, for the cities of France over the same time-period where, Paris apart, all cities show an excellent fit to a straight line correlation size versus rank, unchanged for 160 years.

The Leiden Roman Urbanism Project has big data to experiment with on ancient urban hierarchy. Real Roman city data, such as those exhaustively collected for example for the towns of Roman Gaul by Frida Pellegrino (forthcoming), show that the top cities, rather like the single primate city Paris in the nineteenth century AD, are in a group of their own, with several rather equal regional centres. The medium- sized towns show signs of fitting their own rank size line, but to tend to bulge out against the ideal trend, then the smallest towns do not conform to any rule. In fact not only is the same picture obtainable from the entire Roman Empire of official towns (Fig. 4), but nearly all Pre-Modern urban systems look like this graph. The convexity in the middle-rank cities is interpreted as showing that there are many modular towns of similar size forming regional central places for rural communities, while the group of largest cities, also of comparable scale to each other, may represent the top level of several regional pyramids of city hierarchy.

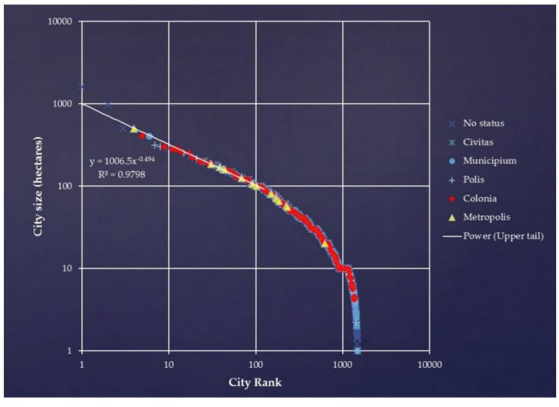

Fig. 4: Rank-Size analysis for the cities of the High Roman Empire (Pellegrino, in press).

Importantly, if we now compare Luuk de Ligt's (2012) study from Northern Italy ca. 1600 AD, nearly all towns except the smallest begin to fit the rank-size line, but two top-ranking towns dominate the graph (Venice and Milan). The general trend from convexity to a power-law, as just mentioned, has often been considered as an example of the invisible hand of economics, with every town constantly controlled in size by its relationship with all the other towns in a network. Paul Krugman (1996) later argued that it marks instead the 'random' variation between town location and resources, historical factors: each town is an independent unit competing for resources and socio-political advantages. The ecological model of Frontier (1976) and de Ligt's Italian cities study more plausibly reverts to the original formulation, by arguing that a mature urban 'ecosystem' sees the emergence of trophic levels with diversity and complexity tied by feedback. Larger towns prey on smaller in a network that has tightened over the last 2000 years.

The structural transformation of cities and regional communications

In Reinout Klaarenbeek's chapter on the afterlife, and often creative reuse, of former convent spaces in several cities of Belgium, we gain insight into historical processes of urban change at the agent and institutional level. From a situation at the end of the eighteenth century when up to 15% of urban space was filled with religious houses, political initiatives dissolved almost all of them by 1860. Urban plots were studied by Klaarenbeek across time in their use of space, with historic maps, archives, pictures and the tools of GIS revealing the progressive remodelling for new purposes of these urban landscapes. Cristina Purcar enriches her analysis of the expanding and innovative railway network in Romania with significant heterogeneous voices and viewpoints, based on photographs, maps and archival accounts. The railway system altered the physical and mental world of the country and its inhabitants, while the maps and photos both aim to promote modernisation and at the same time document the disappearance of a traditional world. Bieke Cattoor deconstructs the creation of new roads and suburbs in Flanders through the introduction of conflicting narratives and the collapse of time. Jill Desimini likewise asks us to release our spatial vision from single cartographic realism to heterogeneous and dynamic alternatives. Standard topographic maps are far from experienced reality, offering carefully selected elements of the landscape deemed significant to map-makers. Google Maps do permit user-modification but remain mediated by restrictions imposed by the media giant. Open Street Map allows users to add data relevant to them, more clearly a communal enterprise. Bram Vannieuwenhuyze

presents us with a potentially fruitful merger of parcel-based urban topographic analysis and the earlier visual representations of towns in the Low Countries. The concept of 'deep mapping' adds aspects of personal experience to cadastral maps, which were usually made for taxation purposes. This new approach deploys archival and visual records to explore households and individuals, wealth levels and occupations, which via GIS can be stacked over each other into interpretive layers for urban plots and whole districts of historic towns. Likewise Cecilia Furlan shows how 'thick mapping' integrates oral history, photos and paintings into the otherwise neutral mapping of time-sequenced changes in the industrial landscape of Charleroi — from its creation to the current post-industrial wastelands.

From at least the Renaissance era in Europe documentary and visual records have allowed us to see the dialectic between the different scales of Braudelian history: the short, medium and long term but also the interactions between individuals, communities and a wider world (Braudel 1972).

In the next figure we see an image of Broad Street, Ludlow in England by Samuel Scott, 1765. Firstly, this is a genuine record of a specific street in a specific town at a specific point in time. The artist lives in this street and moreover the people shown are recognisable historical individuals of his close acquaintance. With the help of archival records we can flesh out their names and lives. So at one level we are looking into the lives and social interactions of unique agents in a defined moment in time, the world of individuals, events and year-defined places. So much for the emic level. But the urban-historian Mark Girouard uses this snapshot to

Fig. 5: Samuel Scott (1765), View of Broad Street, Ludlow, detail (from Girouard, 1990: Fig. 123).

encapsulate a medium-term historical process, the dramatic transformation of English and other contemporary West European towns towards a 'gentry' society dominated by the landed elite — 'polite society', contrasted to what can be shown for preceding centuries. At the etic level then we are observing the culmination of economic and social processes which go back at least to the fourteenth century AD (Britnell 2009).

Urban change and class

This topic did not feature very directly in our conference, with the exception of Karl Beelen's case study in India. In his thoughtful chapter a challenge is made to official maps which display and promote state and local government planning, emphasising modernisation developments and approved forms of settlement. In contrast a new genre of mapping, created with poorer local community members whose unofficial coastal settlements and traditional ways of life are threatened by these developments over their heads, gives an alternative voice to neglected sectors of society. Indeed particularly following classic studies such as David Harvey's *Social Justice and the City* (2009), this topic should be a central theme for our discussion.

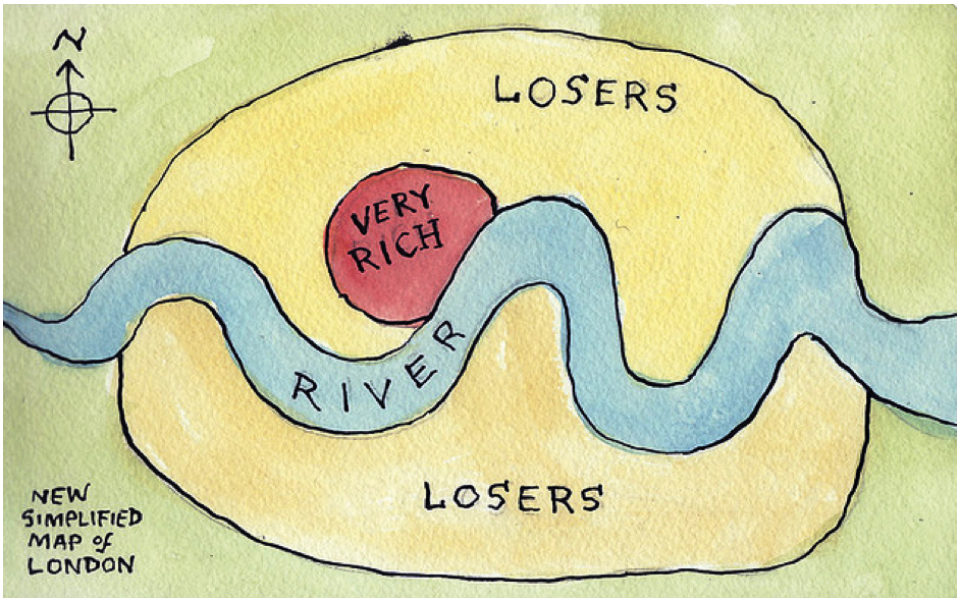

Fig. 6: New simplified map of London drawn from memory. Author Anon (http://www.revue-urbanites.fr/entretien-reparer-des-marches-defaillants-et-apres-la-regeneration-urbaine-par-projet-a-londres-avec-martine-drozdz/).

Social Issues are more relevant than ever in European city studies, and my next illustration, a satirical cartoon on class and housing in London (Fig. 6) is not a foolish exaggeration, when a United Nations survey recently found that one in five children in the United Kingdom live in poverty.

In a sophisticated and wide-ranging study, the urban geographer Erwin Sabelberg (1983) has shown how the role of the elite house (*palazzo*) as a form of Renaissance and Baroque self-presentation differed fundamentally between northern and southern Italy, and this has led to dramatically contrasted townscapes in the modern era.

Palazzi in Florence or Siena in the historic centre are still largely in the hands of the elite, and a high percentage of such families were in power before 1800. Also banks and other institutions of culture and government like to use the palazzi, since they breathe high status. Sicilian palazzi in contrast have been converted into cheap apartments and restaurants. In Tuscany the Renaissance house, a base for industry, commerce and banking, contained and exhibited to the public the means which *made* its resident elite, and this remains the function of palazzi today. In contrast in Sicily the Renaissance and Baroque house merely *expressed* the status of its elite residents whose wealth always lay elsewhere, in great rural estates, and it has been easier to abandon — more than once — unfashionable houses for newer styles built in other parts of the city.

In this context we should mention the classic pioneer study of a contested townscape, the anthropologist Michael Herzfeld's (1991) study of the conflict between the heritage community and the living occupants of the Venetian town of Rethymno in Crete, placed into a wider framework in his recent paper 'Heritage and the Right to the City' (2015).

Deceptions of mapping and townscape views

In Bram Vannieuwenhuyze's chapter we learn of the perils of bias inscribed in newer and earlier historic maps, but also how to rescue information from them using juxtaposition with empirical data and through learning the cultural norms of past map makers. Karl Beelen unravels the divergent forms in which urban bypasses in India can be presented and read in positive and negative ways. Bieke Cattoor challenges the dominant mode of portraying human landscape and townscape interventions as simplistic statements of progressive acts of improvement. Chang-Xue Shu very fruitfully deconstructs official versions of architectural

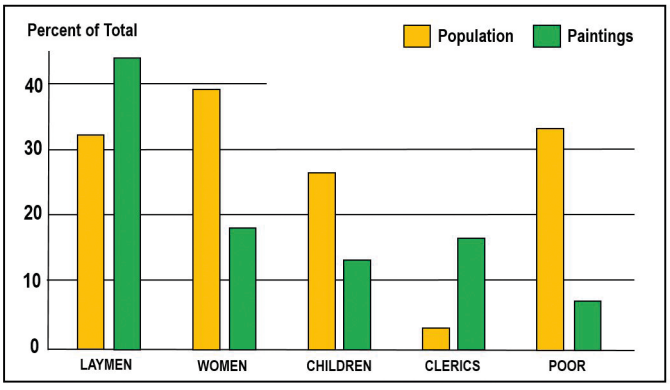

Fig. 7: Comparison of the social structure of the eighteenth-century Modena population in official records an in contemporary street scenes (Nicassio 1991: Fig. 11).

history in China, by exploiting the neglected but prolific archive of local history gazetteers, dating from the tenth to the twentieth century. A bias to certain forms of progressive construction in official histories misreads architectural realities when data-mining and GIS allow more accurate records with grass-roots observations.

My favourite and clever example of a study in the bias of visual representation of past towns is by Susan Nicassio (1991) for a series of supposedly representative contemporary townscapes of eighteenth-century Modena. The underrepresentation of women, children and the poor is clear when compared with contemporary census records (Fig. 7).

Phenomenologies of landscape

A very lively field in Human Geography, and more recently in Archaeology, is that of Landscape Phenomenology, in which a tactile approach contrasts with that of the positivistic mapper of a structured landscape. Ian Gregory in his contribution to this volume captures the ways in which literary descriptions of the Lake District record changing mentalities towards its physical and economic geography, and the varied ways in which writers encounter its constituent districts.

GIS techniques allow exploration of the 'Phenomenology of Landscape': the way past inhabitants saw their world. An example application is that by Phil Howard (2007), part of a survey of an ancient city and its landscape in Greece, the town of Thespiai. We asked, what could you see from the Thespiai city wall of the countryside settlements? Could rural inhabitants see the town they were

citizens of? Surprisingly rural farms and the city were rarely intervisible. The farms were rather located in advantageous positions as the centre of small estates.

Phenomenology as an approach to landscape has been taken to the extreme in what many have considered to be a 'sacred text' of Post-Modern landscape archaeology, the volume by Chris Tilley entitled *A Phenomenology of Landscape* (1994): 'space does not and cannot exist, apart from the events and activities within which it is implicated. Space is socially produced' (*Phenomenology*: 10). I have a passing regret for the occupants of the pre-human Earth. No space for dinosaurs. In a practical application of such ideas, the archaeologists Barbara Bender, Chris Tilley and friends, from the Institute of Archaeology in Central London went to South-West England to prehistoric settlement sites, with the aim of re-enacting the Bronze Age viewpoint on the countryside through an imaginary doorway held up by Bender (Bender, Hamilton et al. 1997).

The excursions of urban academics into the contemporary countryside are coloured by such romantic visions of a pre-modern world where rural life is sensuous, mystical — and unable to make a livelihood. The vast empty spaces produced by modern farming technologies contribute to this unrealistic urban fantasy (Bintliff 2013).

Phenomenologies of townscapes and of globalisation

Bieke Cattoor asks us to fragment and deconstruct the large-scale maps of contemporary and historic built environments in Flanders into humanly-accessible segments of complex, layered, micro-spatial worlds where experience on the ground does not follow the official planning narratives. Reinout Klaarenbeek shows us how the post-medieval towns of Belgium had a townscape dominated by the spires of religious institutions.

In Hellenistic and Roman cities there develops a recognisable 'iconoscape', or 'cité des images', where instead of modern advertising billboards the ancient citizen was constantly confronted with the serried ranks of honorific statues portraying the urban elite (van Nijf, 2011). We need not assume that the public always walked in awe of these watchful powerful. In Oslo the elevated bronze statue of a late eighteenth- early twentieth-century local worthy (Fig. 8) has repeatedly been the object of subversive comment…

Fig. 8: Graffiti adorn a Norwegian worthy in central Oslo (http://www.ekosystem.org/photo/932176).

Neural networks

This theme was not discussed in the current collection of papers, yet it forms a natural complementarity with the importance in most of these chapters of combining the formal mapping of landscape and townscape features with experiential dimensions at the human scale. The billions of memory cells in the brain (neurons) create networks of association, mirroring what we observe in the outer world. What we later observe in the world stimulates these inner unconscious structures to influence our actions and ideas heavily. Each person is unique due to their personal history, but we behave guided by the inner self that experience has made us (Greenfield 2015). We largely think and act *the way the outer world has made us.*

Thus, growing up in a highly dynamic, globalising society such as seventeenth-century urban Holland would have moulded one sort of awareness of the sphere of human action and a specific set of awarenesses of social norms and freedoms (Bintliff 2005).

Heritage and the integration of the cartographic and the experiential approaches

Steffen Nijhuis has addressed the innovative potential of landscape architecture, the teasing apart of layers of action that created contemporary heritage sites over time, such as the famous rural estate gardens at Stourhead in England, both to comprehend

the process of creation and also to inform current strategies of maintenance and preservation. His use of GIS to plot and visualise the regular transformation of this artificial Classical landscape included effective use of viewsheds to elucidate the visual experience visitors were offered at key points of their navigation of this formal park.

Probably the central theme that unites so many papers at this meeting, as I have recently several times pointed out, has been that of integrating the Cartographic and the Experiential modes of studying the spatial patterning of human culture. This theme is part of Cristina Purcar's contribution on railway photography in Rumania, in Ian Gregory's analysis of literary modes in the Lake District, in Cecilia Furlan's study of the industrial landscape of Charleroi, in Jill Desimini's chapter on contrasted layers in alternative cartographies, and in Bieke Cattoor's deconstruction of planning initiatives in Flanders.

Closely related to this field are Virtual Reality reconstructions: they form a major innovative, yet at the same time a controversial, tool. We have developed a digital restored ancient Greek city, that of Koroneia, within my own archaeological project in Central Greece. The virtual reality model is navigable and can be explored on a laptop or also smart phone. We hope to make it available in local schools this year. Another example would be a VR navigable reconstruction of the University of Ghent project in the Roman town of Ammaia in Portugal (Fig. 9), directed by Frank Vermeulen (Corsi 2016).

Fig. 9: Michael Klein (2015), VR navigable reconstruction of the Roman town of Ammaia in Portugal, "Radiography of the Past" project (copyright: 7Reasons/Ghent University).

There is major debate within the VR community about the transparency of reconstructions, especially immersive experiences, but recent protocols demand that VR townscapes allow the (usually considerable) layers of speculative rebuilding to be revealed against the surviving evidence.

Conclusion

Key points for future discussion and elaboration which emerge from the papers in this volume are:

- Social interactions,
- Urbanism, central places and the organisation of landscapes,
- The structural transformations of cities and regional communications,
- Urban change and class,
- Deceptions of mapping and townscape views,
- Phenomenologies of landscape,
- Heritage and the integration of the cartographic and the experiential approaches.

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