

in urban research – the historical-geographical approach of the Conzenian school, the process typological approach of Muratori and Caniggia, the configurational approach of space syntax of Hillier, and even the spatial analytical approach of cellular automata, fractals and agent-based modelling (Batty, 2005). Whilst these may be different ways of thinking about urban morphology, and in a broader sense cities, they are all complementary. They *should be* and *need to be* collaborative and not work in isolation. Urban morphology, I have argued here, is interdisciplinary. That means that, as a science, it embraces multiple approaches and reaches out to other scientific disciplines. Wider recognition that schools of thought can learn from each other would help strengthen the connections between practitioners and urban morphological research.

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Urban morphology and World Heritage practice

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Song *et al.* (2016) discuss the conflicts and prospects pertaining to the potential common ground of urban morphology researchers and World Heritage practitioners. They draw on the Chinese experience and emphasize complementary elements found in the concept of the cultural landscape as it is defined and used in academic research and in the practice of heritage conservation (see also Whitehand, 2013). In response to their discussion, a number of matters merit consideration concerning the

potential contribution of historico-geographical methods of studying urban form in the particular domain of UNESCO's Historic Urban Landscape Recommendation.

The concept of the 'Historic Urban Landscape' appeared in the UNESCO World Heritage terminology in the 2005 Vienna Memorandum (Article 7) and acknowledged the value of both tangible and intangible aspects of historic urban areas in conservation practice. The 2011 Recommendation

on the Historic Urban Landscape is a development of the Vienna Memorandum. It was adopted by UNESCO's General Conference in order to establish a sustainable dialogue between the often-conflicting processes of urban conservation and those of urbanization (Bandarin and van Oers, 2012, pp. 65–75). Its goal is to achieve an inclusive, 'landscape' approach to heritage conservation – one that encompasses the extended urban and geographical setting as integral to the diachronic character of historic places.

Whilst the 2011 UNESCO Recommendation develops an instrumental set of guidelines for the planning and management processes in World Heritage urban sites, it is still lacking a coherent ensemble of operational methods for the rigorous assessment of the historic urban landscape (Turner and Singer, 2014, p. 302). The need is not for a static ahistorical understanding of the historic urban landscape, but for a dynamic consideration of the cumulative outcome of complex processes and diverse themes evolving over time within a space-time continuum (Whitehand, 2010, p. 39).

World Heritage and evidence-based assessments

To a significant extent, the UNESCO World Heritage approach is based on lessons learned from 'best practice'. The advisory bodies for World Heritage (ICOMOS, IUCN and ICCROM) have accumulated years of worldwide multicultural experience in heritage management and have a large amount of knowledge to offer. Prior to the decision-making and policy stages in heritage conservation practice, however, there is an elementary basis of understanding the particular and cultural-specific aspects of World Heritage sites. In other words, successful practices in a certain cultural and geographical situation would not necessarily perform equally well in a different context (consider the Chinese cultural landscape and its distinctive character compared to Western cases – cf. Whitehand and Gu, 2007; Song *et al.*, 2016). To configure place-specific sustainable policies, in line with the practices that the 2011 Recommendation calls for, there is a need to deploy a set of systematic cross-cultural assessment methods that is sensitive to the inherent culturally specific histories of World Heritage sites. Targeted, evidence-based assessment of the historic urban landscape is a critical prerequisite to understanding both common and distinct qualities of urban heritage and to maintain policies for

urban futures that relate to the identified heritage values.

Assessment methods require, in turn, careful definitions and tools for scientific evaluation of the basic components of the historic urban landscape and their implications for its character and heritage value. Towards this end, urban morphology as the field of academic research on urban form has much to contribute and at various stages in heritage conservation processes: from their conception, to classification, planning and impact evaluation.

The role of urban morphology

Following its establishment as a field of knowledge in the late-nineteenth century, urban morphology developed descriptions and definitions to classify observable patterns in the form of physical landscapes (Whitehand, 1981). The term urban landscape (as a sub-category of cultural landscape) appears in the work of Otto Schlüter (1899) which displays the seeds of an attempt to depict and map historical built-form change in cities and other settlements. Consolidating the geographical approach, M. R. G. Conzen innovated in the field with methods, concepts and representational tools that enabled the systematic investigation of the historical morphogenetic processes of urban landscapes (Conzen, 1960). He identified the basic components of urban form – plan, building form, and land and building utilization – and combined them in relation to a comparative historical perspective. His historico-geographical approach opens up prospects for constructive dialogue between urban morphology and heritage conservation, both at a conceptual and practical level.

Inscriptions on the World Heritage List are currently organized under three main categories: cultural site, natural site, and mixed site. These categories are far too broad and thus fail to illustrate the diversity of the inscribed sites (either in scale or character) and of the challenges they face. Therefore, within World Heritage practice, the historic urban landscape – as a sub-category – remains for the moment in limbo, both in terms of concept and of management (Rodwell, 2010). In contrast, urban morphological research has established coherence in the concepts and methods it uses for the study of urban form. This is evidenced by the continuously increasing application of its concepts/methods in a great variety of cultural contexts, while it allows for cross-cultural

empirical observations to be interpreted in a consistent and comparative manner (Moudon, 1997).

The effort to establish an intellectual and practical link between the academic study of urban form and the designation and planning policies applied on World Heritage sites is not new to the field of urban morphology. Whitehand (2009) explains that the conceptual and methodological premises of M. R. G. Conzen's analysis of historical townscapes in Britain (Conzen, 1966) provide an exemplary systematic and explanatory research framework within which the landscape – be it urban or rural – becomes geographically and historically situated within the cultural development of human activity (Whitehand, 2009, pp. 7–10). Whitehand reviews a list of studies which have used and further developed the Conzenian method of morphological regionalization in order to identify areas of distinctive morphological and functional character (urban landscape units) within historical urban landscapes. Amongst the studies portrayed by him, there are examples addressing, in particular, the delimitation of World Heritage sites. These include a study of plan-units commissioned to support the World Heritage nomination documents for central Sibiu, Romania; and a comparative consideration of the designated World Heritage site boundary in St Petersburg, Russia and the boundary of that city's inner fringe belt that was identified after morphological analysis.

These examples suggest the prospects of morphological description and analysis in providing evidence-based methods and tools for the designation of World Heritage sites. Moreover, the morphological representations of the built environment can form the basis upon which other layers of the city (social, economic, cultural, environmental, transport) can be mapped and analysed, providing an informed understanding of the urban landscape whereby planning policies can be formulated to address both tangible and intangible features of heritage. In this context, the study of urban configuration with space syntax methods comprises another powerful type of analysis for addressing historic, cultural and contemporary aspects of heritage connectivity. There is certainly room for further exploring the potential of inter-disciplinary studies that combine the historico-geographical approach with space syntax methods in situating the historic urban landscape within its contemporary context and addressing the ways it engages with its wider setting.

The World Heritage List

A review of the inscribed UNESCO World Heritage sites reveals the relevance of urban morphological methods (Figure 1A). Out of 1031 inscriptions (reviewed in 2015), 438 relate to the historic urban

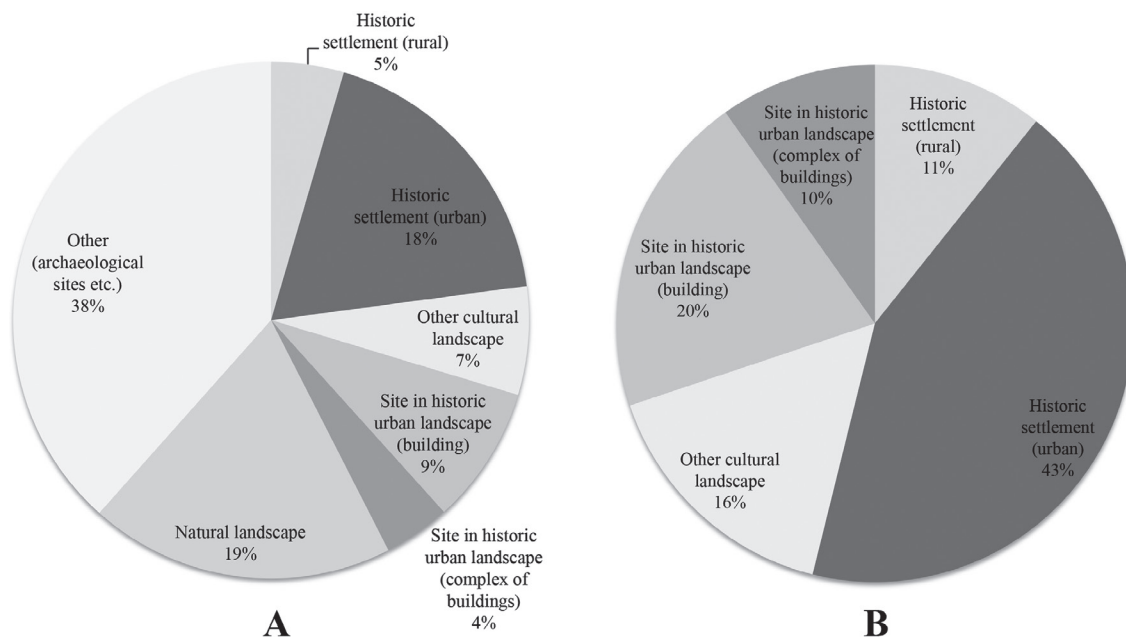


Figure 1. UNESCO World Heritage List: (A) natural and man-made sites; (B) sub-categories relevant to the historic urban landscape.

landscape. Specifically, while reviewing the World Heritage List, the following sub-categories which relate to the historic urban landscape were identified (Figure 1B): historic settlement that remains rural (47 inscriptions); historic urban settlement (towns or urban areas, such as historic centres) (189 inscriptions); historic building within an urban landscape (89 inscriptions); historic complex of buildings within an urban landscape (43 inscriptions); and finally, other cultural landscapes (usually large-scale sites or regions combining natural and man-made heritage value) (70 inscriptions).

A closer inspection of nomination files reveals inconsistencies and deficiencies that the systematic study of urban form could address. For example, as reported by the World Heritage Committee, the lack of townscape description and analysis was one of the reasons that the UK World Heritage site in Liverpool (Liverpool Maritime Mercantile City) was added to the 'List in Danger' in 2012. The problem of the delimitation of buffer zones is another task that remains unresolved in heritage conservation practice, with no clear scientific approach or method to address it (Martin and Piatti, 2009).

Looking forward

Urban morphology needs to overcome challenges within the field itself as well as in relation to other fields engaged with the built environment (Whitehand, 2012). It needs to develop ways to communicate its usefulness to international heritage conservation practitioners and stakeholders, such as the UNESCO World Heritage Centre. Not least, greater attention should be devoted to exploring further and identifying through more case studies the potential multi-dimensional contribution of urban morphology to heritage conservation in general, and to current and future UNESCO World Heritage practices in particular.

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