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## What new insights can the combination of the historico-geographical and configurational approaches to urban morphology offer?

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One of the key challenges facing urban morphology today is to coordinate and combine different approaches (Whitehand, 2012, 2015, 2017). Larkham (2006) has suggested that considerable opportunity exists for exploring the complementarity of the historico-geographical approach and the configurational approach (space syntax). However, establishing a dialogue between them has proved neither easy nor straightforward, and this has been largely hindered by their different disciplinary traditions and theoretical propositions. In the past decade there have been some efforts to combine these two approaches (Griffiths *et al.*, 2010; Kropf, 2017; Oliveira *et al.*, 2015; Pinho and Oliveira, 2009). Our knowledge as to what new insights that the combination of these two perspectives could engender remains unclear. This is despite the understanding of the shared theoretical focus that the structure of the urban grain embodies and explains, its socio-economic and cultural process (Griffiths *et al.*, 2010), and the common object that the street as one of the built form elements is essential for both the recognition of morphological regions and accessibility distribution identification (Kropf, 2017; Oliveira *et al.*,

2015). This Viewpoint contributes to this debate by beginning to map out some possible ways in which the two approaches can be used complementarily in research and practice.

Research endeavours to date have focused largely upon how the historico-geographical and configurational approaches in combination can help to better elucidate the historical process of urban form. The principal proposition can be summarised in two perspectives: from the historico-geographical one, place-specific knowledge about the change and continuity of urban form can be brought to bear on, and then enhance description and explanation of, its generic properties; from the configurational point of view, features of the generic street network can be used together with other built form elements to inform identification and definition of characteristic areas (for example morphological regions). However, existing studies primarily revolve around the former, whereas investigations on the latter are only in their infancy.

This largely unexplored area potentially provides an ample opportunity, where different configurational types and measures of the street network could be identified and calculated to define areas

that are useful for historico-geographical analysis. In their simplest form, patterns can be captured as distinct and discrete aggregates of similar types of streets (for example Kropf, 2017). More often than not, patterns can emerge as a result of quantitative measures of specific configurations of the street network. In this case, they usually uncover some intrinsic spatial structures of urban areas that are more likely to be associated with historical urban processes. For instance, the integration (as in space syntax) or centrality (as in multiple centrality assessment) patterns of street networks have been identified and proved to be correlated with the spatial distribution of economic activities in different cities (for example Al-Sayed *et al.*, 2009; Porta *et al.*, 2009; Sevtsuk and Mekonnen, 2012; Yang and Hillier, 2007). In view of their potential to inform plan unit or morphological region recognition, testing and applying these methods could be a focus for future historico-geographical studies.

Another neglected opportunity is that combining the two approaches can shed new light on the transformation processes of urban form. By systematically examining and comparing urban form across different morphological periods, on the one hand, knowledge about the changes and continuities of street configuration can be applied to explaining the growth of, and the interrelationship between, morphological regions or plan units. This is premised on the fact that the configurational approach, in particular ‘space syntax’, sees street configuration as encapsulating generative rules of space (Hillier, 1996a; Hillier and Vaughan, 2007) and, to a large extent, accounts for the spatial distribution of pedestrian movements (Hillier *et al.*, 1993) and subsequently different land uses (Hillier, 1996b). On the other hand, the place-specific knowledge about the formation and transformation of morphological regions or plan units can be employed to evaluate the role that street configuration plays in the formal changes of a city – for instance, to what extent the spatial-functional relationship dominates and to what extent it subordinates to other forces in the locality.

Moving to consider practice, specifically urban conservation practice, combining the two approaches can generate a constructive negotiation between preserving historicity and enhancing sustainable use of urban spaces (UNESCO, 2011). Morphological regions have been regarded as appropriate units for urban landscape management because of their capabilities of retaining historicity at its fullest sense (Whitehand and Gu, 2007, 2010; Whitehand *et al.*, 2011), but conservation

merely on this basis would be largely blind to potential threats to economic viability. In contrast, street configuration, as mentioned above, has been repeatedly proven to be associated with, and therefore can be used as an indicator of, concentration and dispersion of urban activities. Coincidentally, recent space syntax research has also emphasised that spatial networks of connected space, especially its formative processes, which could potentially inform conservation area delimitation, contributing to a synergetic view between heritage and development (Palaiologou and Griffiths, 2019).

This gap can be bridged by overlapping the maps of morphological regions and configurational patterns of street networks. In this way, not only can those areas to be preserved because of their distinct historical expressiveness embodied in the physical environment be identified, but also which areas tend to have comparative advantages for conservation, especially in terms of economic viability, and which areas are more likely to be confronted with decline that may lead to rapid deterioration of the physical environment and consequently loss of historical expressiveness. In addition, it can also provide an understanding of how different morphological regions or plan units are spatially and socially connected, and evaluate how changes to one may affect another. In other words, the integration of the two morphological analyses can enable a fine-grained, cross-scale examination of urban form, laying out and making more explicit both the opportunities and risks across the urban grain.

These insights then provide a sound foundation for conceiving, comparing and evaluating conservation proposals. For a specific urban area, it can enable a more balanced consideration, which could then lead to better-informed decision-making in order to achieve a more sustained continuity of historic environment. Across the entire urban grain, it potentially allows for sharper identification of conservation priorities and insightful anticipation of inter-area influences, in order to achieve smart distribution and allocation of limited resources. From this perspective, it can be argued that the combined approach paves a new path for addressing the recent challenges to urban conservation and management – synergising the heritage preservation and socio-economic development in a sustainable way (Bandarin and Van Oers, 2012; Rodwell, 2009; Van Oers, 2006).

Complementarities between the historico-geographical and configurational approaches have yet to be extensively investigated. There are

potentially many more insights that the combined approach can offer on urban form. It is hoped that this Viewpoint can serve as a starting point for developing a fuller agenda for systematic exploration of combining these two approaches in and beyond urban morphology.

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