function as neighbourhood centres and identifying routes and pathways immediately around them that seem to have poor connectivity; and examining clusters of activity spaces or other places that should have a high degree of interconnection.

A second example involves the urban design idea that sometimes it is important for neighbourhoods to have centres – places that provide a common, centrally-located destination that not only provides needed services for people, but also functions as tangible evidence of the common bond that people living in the same area share. Such places may, over time, promote a sense of shared responsibility.

Again, an urban morphology-inspired analysis might involve characterizing the different kinds of centres already known to exist (schools, libraries, road intersections), and understanding how their character, functionality and design requirements vary along dimensions of use, physical condition, public access, and the character of surrounding thoroughfares. Is there good building frontage for a sense of enclosure around the space, or are there weaknesses that need to be mitigated? Is there one side on which to focus, and others to leave as they are? Should some frontages be lined or wrapped with more permeable, pedestrian-friendly frontage? Is there a good mix of uses at the centre (especially public as distinct from commercial)? Are there uses that should be added, such as facilities or commercial spaces, or even parking? Could existing uses like parking lots be given dual purpose? Are there well-designed entrances and gateways to the centre? How do people from all points around the centre get to it? Are the surrounding street crossings appropriate? What design elements might be added on the site to improve its function as a plaza, square, green, or other civic space?

These are but two examples of how urban morphology is central to urban design that advances sustainability and is incremental and pragmatic in spirit. I believe that planners who use the intellectual and pragmatic tools of urban morphology will be the ones who help ensure that, in the design of human settlements, fundamentals do not get lost – like how to make a neighbourhood function well, how to support social diversity through design, and how to make a place more civic-minded. With an urban morphology orientation, they can be the ones ensuring that the creative process of urban design does not obfuscate fundamental considerations in favour of fashion.

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Consolidating urban morphology as a discipline

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When I gave a lecture to the Urban Design Group (UDG) in London on the subject of urban morphology, I started by stating my unapologetic determination to use the term urban morphology. I felt that statement was necessary – confirmed by the audience's response – because of the number of people who either stare blankly when I say what I do or who suggest it might be better to find another term. The latter group includes urban design professionals who value the contribution urban morphology makes to urban design practice.

Comments over the years in the Viewpoints in this journal reinforce the perception that urban morphology is not well understood or actively used in planning and urban design practice. Indeed the ISUF Task Force on Research and Practice was set

up to address this point (see Barke, 2013; Samuels, 2013).

In support of the work of the Task Force and with the prospect that a similar situation might apply in other fields in which urban morphology is relevant, it is worth asking the question, 'how is urban morphology perceived?' How big a task do we have to raise the profile of the discipline in urban planning and design and how might we go about it? Central to the task is being clear what urban morphology is about.

This to me is the essence of the discussion that has ensued from Michael Conzen's reflections on the role of meaning in urban morphology (Conzen, 2013, 2014; Kropf and Malfroy, 2013). The question of meaning *in* urban morphology is just as much about the meaning *of* urban morphology: the label and its contents. One of the points I take from Conzen's passionate arguments in his Viewpoint in the previous issue of this journal – and a point with which I strongly agree – is that 'unbundling' urban morphology as it has come to be constituted would be a profligate waste. Too much effort and energy would be lost, too many insights would be dissipated and stirred into the soup of larger fields.

But, at the same lecture that I gave to the UDG, one of the comments at the end was this. Having described the broad range of topics that fall within the remit of urban morphology, someone asked, 'isn't that claiming too much ground for urban morphology?' As if to say, is it not hubris to suggest that urban morphology on its own can fully explain something as complex as a city? And what about the other individuals and groups who use different concepts and methods under the label of urban morphology: for example, Michael Batty, Bill Hillier, Philip Steadman, Serge Salat, Christopher Alexander and Nikos Salingaros. And if we keep a broader conception of urban morphology, what should we call the specific focus on the basic elements of built form, their structure and relationships – a common definition of morphology in other fields? We could start by reflecting on the fact that geomorphology is the study of landforms and the processes that shape them. But I find it difficult not to return to the source: Goethe and his original conception of morphology – keeping some flexibility of mind in carrying over the core principles from 'living forms' to built form.

> The man of science has always evinced a tendency to recognize living forms as such, to understand their outwardly visible and tangible parts in relation to one another, to lay hold of them as indicia of the inner parts, and thus, in contemplation, to acquire a degree of mastery over the whole. How closely this scientific aspiration is bound up with the creative and imitative urges need not be dealt with in detail.
>
> Hence several attempts are found in the progress of art, learning and science to establish and develop a theory to which we should like to give the name 'morphology'…
>
> When we study forms, the organic ones in particular, nowhere do we find permanence, repose or termination. We find rather that everything is in ceaseless flux. This is why our language makes such frequent use of the term 'Bildung' to designate what has been brought forth and likewise what is in the process of being brought forth' (Goethe, 1952, p. 23).

Goethe's version of morphology, with which Conzen accords, is profoundly synthetic. And it is explicitly a mental discipline – a way of looking at and organizing phenomena. Strangely, that side of morphology seems to have been lost in the transition from natural history to biology. So we have Goethe's synthetic, inclusive, holistic method; the analytical, exclusive, ancillary methods of current biological and linguistic morphology; and the heterogeneity of actual practice. Some claim too much; some claim too little. I personally do not think that it is a choice between one or the others. We need them all.

The way to integrate that broad church is through some degree of specialization. It has its risks but it is the way forward for growth and development of the discipline. That should include returning to and setting out in more detail the synthetic methods so that they can become a shared, community practice subject to scrutiny and debate.

The principle behind this position is both Goethe's identification of utilizers, fact-finders, contemplators and comprehenders and the concept of differentiation as applied in education and teaching (Gardner, 2006). This principle starts from the accumulated evidence that different people learn in different ways, and is rooted in the fact that different people have different cognitive strengths and weaknesses. Some people find it easier to understand numbers, others three dimensions, text or kinaesthetic experience.

If we want to attract as many people as possible to make contributions to the discipline of urban morphology we need to provide opportunities for them to do so. That means providing different ways into the subject – sub-disciplines – and

making contributions in different ways. It also means being clear what ties all the sub-disciplines together – which takes us to theory. What is the mutual role of the different aspects of form in the formation and transformation of human settlements?

Malfroy and I have suggested that there are benefits in seeing meaning as a distinct aspect dealt with in a sub-discipline (Kropf and Malfroy, 2013). We maintained, however, that meaning is central to the social process that results in the formation and transformation of settlements, not least in the *ideas* that are the basis for the creation of form. In order for those ideas and meanings to help reinforce and extend the discipline of urban morphology as a whole, they need to be seen not in terms of an isolated narrative but in terms of the common concepts of the discipline. Local histories, for example, need to be investigated to see if they might be instances of a more general recurring process using the categories, terms and identified regularities of the discipline. That means shifting the focus from the specific meaning of a particular object or set of objects to the role of the elements and agents in the process.

Knowing the meanings of the shapes used in Queen's Square, the Circus and the Crescent in Bath, as understood by their builders, helps us to understand how and why they came to give that part of Bath the form and character it has. For that knowledge to contribute to a wider understanding of morphological processes and regularities, we also need to shift to looking at the more general act of borrowing and using forms for the purpose of signification and the recombination of elements from different sources. To use somewhat old-fashioned language, there is a balance to be struck between a focus on particulars and a focus on universals. That is to say, in addition to acknowledging that there might be distinct sub-disciplines within urban morphology, it is worth acknowledging that there are different levels of abstraction.

In the end the goal of this discussion is to consolidate and strengthen urban morphology as a field. Far from seeking to impose strict separation of sub-disciplines, I strongly advocate a catholic, inclusive and collaborative approach – something that is not in principle exclusive of specialization. Such an approach necessitates adopting an abstract and flexible view of borrowings and analogies but at the same time requires rigour in putting them together for different purposes. In Goethe's words:

> Morphology may be regarded both as an independent science and as an auxiliary physiological science. As a whole, it is based upon natural history, from which it extracts phenomena for its own purposes; it likewise rests on the anatomy of all bodies and especially zootomy (Goethe, 1952, p. 88).

In this light, urban morphology may be regarded as both an independent discipline and an auxiliary one. As a whole, it is based on urban geography and urban and architectural history, from which it extracts phenomena for its own purposes (where would we be without, for example, the periodization of architectural history?). It likewise rests on typology and configurational analysis of individual elements. Each sub-discipline uses a slightly different set of methods, making use of developments in related fields, rather than seeking to invent them all from scratch. All these then contribute to the broader aims of the synthetic theory of built form and the discipline that seeks to explain built form in terms of the processes of its formation and transformation.

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