

possible pre-Anglian stage. It is suggested that the *burgage* pattern of the medieval period around what is now the central market triangle may have formed along the bypassing routes of the central nucleus, which was later to become a market. The military control function would have become assigned to the Norman castle, significantly situated midway between the bridge and the Anglian village. The central triangle's three routes would thus have formed lineaments of Alnwick's oldest inner fringe belt. This interpretation accords with one of the fundamentals of Conzenian theory: the explication of present forms in terms of their sequential development from initial human imprints in the landscape. In combination with the shared principles of the Muratorian school, this hypothesized revision of the origins of Alnwick could provide a spur to working towards a more unified theory of urban morphology.

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What is urban morphology supposed to be about? Specialization and the growth of a discipline

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Michael Conzen's keynote address at last year's ISUF conference in Delft triggered a vibrant discussion on what urban morphology is about. The trigger was the definition of urban morphology that Conzen gave in his address: 'urban morphology is the study of the built form of cities,

and it seeks to explain the layout and spatial composition of urban structures and open spaces, their material character and symbolic meaning, in light of the forces that have created, expanded, diversified, and transformed them' (Conzen, 2012).

That urban morphology deals with the built form

of cities is probably an acceptable starting point for most purposes within the discipline, but such a statement should not be misunderstood as circumscribing the proper scientific object of urban morphology. What urban morphology strives to disclose is not the built form of cities as such, but the 'genesis' or 'engendering process' of this form. Yet there is a puzzle in the claim that urban morphology is concerned with 'morphogenetic processes' when the built form of cities is generally considered to be the result of human agency. This is the crux of the matter. Does the shaping process of cities include both human agency *and* a kind of causal (or structural) determinism, which remains to be explained? If so, urban design could no longer be considered as an expression of 'free will' but should be explored as a transaction with a range of 'natural laws' of which at present we fail to be fully aware. If it is the business of some more general study such as urban history or urban geography to understand the whole interaction of human agency and morphogenetic processes, we suggest that it is the task of urban morphology to specialize in the analysis of morphogenetic processes. In so doing, urban morphology would assume the role of an auxiliary discipline to urban history or geography. It would not tell us the whole story about the ways in which cities became what they are, but it would shed very specific light on some structural conditions for the creation and transformation of built forms.

Some difficulties arise in Conzen's definition when he speaks of 'explanation'. It is not clear whether 'explanation' here has the strict meaning of 'disclosing the causes' or is a synonym for 'understanding'. One needs to distinguish between (1) the *explanation* of a fact or an event in relation to its causes or certain regularities or 'laws' and (2) the *understanding* of it in relation to the purposes of individual or collective agents (Stegmüller, 1983). The definition proposed by Conzen becomes ambiguous, when summarizing, on the one hand, the *explanandum* as being 'the layout and spatial composition of urban structures and open spaces, their material character and symbolic meaning' and, on the other, the *explanans* as being 'the forces that have created, expanded, diversified, and transformed them'. The 'forces' may include non-human agents, constraints on human agents or unconscious acts of human agents, but 'the symbolic meaning' necessarily requires human agency or, to be more exact, human intentionality. Thus, Conzen's definition compels urban morphologists to mix explicative and exegetical methods with the result that they turn back to the general

historical approach and fail to deepen the specific concern to which they first wanted to commit themselves. The question at issue here is not whether symbolic meaning plays any role in the shaping of the built form of cities, but whether urban morphology as a specialized discipline should include meaning within the aspects of urban form on which it focuses. It is not the core business of urban morphology to analyse the relationship between built forms and the symbolic purposes of builders, but precisely to disclose those aspects of urban form that escape the awareness of the agents that influence such form. For instance, 'burgage cycles' (M. R. G. Conzen, 1960) or 'insulization processes' (Caniggia and Maffei, 2001) are not consciously shaped. Such processes cannot be taken as having been sought intentionally. Despite this, it remains a great achievement of urban morphology to have identified the various stages of the morphogenetic process of such configurations. The issue of meaning in the shaping of built forms belongs rather to urban semiology, semiotics or urban iconography, because the only category of signs with which urban morphology should operate are 'indices' as opposed to 'icons' or 'symbols', to use Peirce's terminology (Atkin, 2010). To be clear, indices are signs with a causal relation with their objects, such as physical traces or animal tracks. In this respect the built environment is an enormous set of indices of the human activity that created them. One of the tasks of urban morphology is to aid us in our attempt to read those indices.

Our attempt to focus narrowly on the specific topic of urban morphology should not be misinterpreted as a lack of sensitivity toward the complexity of the 'forces that have created, expanded, diversified, and transformed' built forms. It is an attempt to neutralize the current vagueness of the topic of urban morphology. We feel it is important to make the leading hypothesis of urban morphology as explicit as possible in order to allow a constructive debate. To exclude meaning and symbolism from urban morphology is categorically *not* a refusal to acknowledge their importance as aspects of urban form. It is more a kind of 'division of labour' for the advancement of knowledge. We fear that a definition of urban morphology as wide as Conzen's seems to impede the emergence of a constructive exchange of ideas more than it serves to integrate the variety of points of view.

In responding to Conzen's view that meaning is integral to understanding urban form it is helpful to refer to morphology in linguistics. In linguistics,

morphology *excludes* meaning. It is concerned not with the *content* of language but with the formal characteristics of the system of sounds and/or symbols, the elements of the system and how they combine to provide the *means* for expressing content.

By implication, if linguistics offers a useful parallel, urban morphology should not be concerned with meaning but with the formal characteristics of the elements of urban form. It should establish what the elements are and to which categories they belong, as well as to identify the patterns of relationships between the elements, considered both as individual entities and instances of general kinds. What are the common, underlying regularities in the construction of urban form that provide a means for accommodating human needs? Are there different regularities in different cultures at different times?

It remains open to discussion whether urban morphology can maintain this kind of abstract analytical approach and still incorporate meaning. A possible solution may be to look at it in terms of the processes of formation and transformation. In principle, perception, intention and interpretation are fundamental elements in the socio-cultural processes that lead to the creation and growth of the built environment. To understand the generation of urban form it is crucial to understand the underlying ideas that *inform* it. The study by Joseph Rykwert (1988) of *The idea of a town* shows how the physical form of Roman towns and the process of their formation are deeply rooted in specific cultural content – conceptions of cosmic order. In a slightly different way, for Caniggia and Maffei (2001) the organic conception of a building as an intuitive idea is essential to the typological process and the evolution of urban form.

As another example, the diversity and local persistence of building types as explored by Scheer (2010) also illustrates the central role of ideas and perceptions in the process of development and the resulting character of urban form. The choice of particular types (for example, the Boston triple decker, the suburban office building, the English terraced house or the suburban villa) is driven in large part by the cultural content of the types – what they mean to people. So, anecdotally, in rural England it is often difficult to get planning permission for ‘flats’ if they are labelled as such (irrespective of the physical form they take) because ‘they’ are considered to be urban and so inappropriate in rural locations. It is almost enough to use the word ‘flat’ to set communities and planning officers against a proposal. The word

conjugates up images in people's mind that affect their judgement.

However, from the perspective of linguistic morphology, this is to drift into the realms of narrative and meaning and so beyond the scope of morphology. It is the equivalent of talking about connotation and cultural bias in the composition of a particular story. Those issues are not central to the underlying structure of the language.

To be more precise, the fact of meaning – signification – *is* central to morphology in linguistics but at a *generic* level. For example, the specific cultural content of the words ‘cat’, ‘dog’, ‘pig’ and ‘politician’ is not relevant to morphology. We only need to know enough about meaning to determine that they are all substantives or nouns. From there we can begin to work out their role within the system, for example their typical relationships with verbs and adjectives. We can also work out various regularities of construction. For instance, the morpheme ‘s’ is used to form plurals: cat, cats; dog, dogs; and ‘politician’ is composed of two morphemes, ‘politic’ and ‘ician’, as in magician. The fact that it might be possible to communicate meaning about dogs, pigs or politicians by juxtaposition is irrelevant to morphology.

Another point in the comparison of urban morphology and linguistics is the distinction between meaning and use. The primary role of words (and morphemes) in language is to convey meaning. As Wittgenstein (1967) would say, for language, meaning is use. By contrast, the primary purpose of built form is to provide physical shelter and otherwise physically accommodate human activities. That puts meaning a further step away as a consideration for morphology. To test this point, one might ask, is it the job of urban morphology to explain the meaning of the Forbidden City in Beijing, the Alhambra in Granada or Washington DC? Or is it rather to explain how those forms have been generated in terms of the elements of which they are made, the internal relations between the elements, the relation of the whole to the larger structures of which they are a part and the generic processes involved in their formation? We might then go on to ask the equivalent of how the plural is formed in each case. How are elements put together to accommodate some particular generic function or other, for example separation of public and private space?

Is this issue then more about our expectation of what urban morphology is supposed to be about? Is it that we have assumed urban morphology should cover a much wider remit than linguistic

morphology? Should urban morphology be equally limited in its scope? Alternatively, it might be said that we need to identify more clearly sub-disciplines within the field of urban morphology, as argued, for example, in Kropf (2011). One way or another it is worthwhile testing how 'true' the analogy is between linguistics and urban morphology. It seems clear that what is lumped together under the term urban morphology includes a much wider range of 'subjects' than linguistic morphology. The main field of linguistics is traditionally divided into three sub-fields: syntax, semantics and pragmatics, though these have broadened over the years into more general areas of structure (including syntax and morphology) and meaning (including semantics and pragmatics), as well as extended to include the evolution of language and its relation to socio-cultural context. This subdivision is, of course, the basis of our initial point. Meaning is dealt with in one sub-field of linguistics and morphology in another.

So if linguistic morphology is a sub-field within linguistics in the same way that biological morphology is a sub-field within biology, the comparison begins to beg the question of which larger field urban morphology is supposed to be a part. There seems to be no equivalent to the general fields of linguistics or biology for the built environment. Geography is far too broad, while architecture, archaeology and urban history are too limited. Efforts at neologisms in this direction have not fared well. It might be said that the lack of an obvious 'home' for urban morphology explains why pioneers such as M. R. G. Conzen, Muratori and Caniggia sought to cover so much under one umbrella.

From whichever direction it is viewed, however, the common feature is that broad subjects such as biology, linguistics and the built environment benefit from specialist investigation and the formation of specialist sub-fields (Toulmin, 1972). If urban morphology is to grow and thrive it is our view that we must foster and promote the formation of those sub-fields. The first step in that direction is to identify what the sub-fields should be and consolidate current understanding around them. An initial suggestion based on the focus of existing research and comparisons with both linguistics and biology is that the sub-disciplines might be:

- The generic aspects and elements of form and

their specific properties

- Generic and specific structure and relationships
- Regularities of development
- Evolution and diversification of form
- Socio-physical performance
- Meaning

In the same way that even linguistics does not say all there is to say about language, it should be obvious that this list in no way encompasses all there is to say about the built environment. To reinforce the point, our aim is not to narrow down the subject but to recognize that specialization is a sign of maturity. We are at a point where we face the growing pains of separating out the specialisms. The challenge is to do so without losing track of the connections between them so that we can always reintegrate their findings around the unifying aspect of form.

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Substance, method, and meaning in urban morphology

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My immediate purpose in offering a specific definition of urban morphology at the Delft ISUF conference¹ was to attempt to place discussion of the problems of comparative study in the field on a reasonably sound footing, or at least one that itself could be open to scrutiny (Conzen, 2013). There was an underlying curiosity, of course, to see if anyone would take issue with it as a definition *per se*, and perhaps even offer radical alternatives. The Viewpoint by Karl Kropf and Sylvain Malfroy (2013, pp. 128-31) is therefore welcome for expressing some reservations about parts of it and raising matters fundamental to the way the field is viewed and practised.

All knowledge is ultimately indivisible. We specialize (and compartmentalize) its acquisition simply for the gains in understanding that systematic and technical analysis of parts of it can yield, holding all other parts not directly connected to them constant. This is the basis of scientific 'disciplines'. Yet analysis must lead to synthesis to have value, and synthesis eventually requires transgressing disciplines. Their boundaries are fluid (if not sometimes chimerical), and their locus lies in the eye of the beholder, or, in the interest of collective understanding, in agreement among beholders. And agreed-upon boundaries too are notoriously fluid. In this context, Kropf and Malfroy argue for a minimalist, if not an outright 'puritan', view of urban morphology.

The conceptual definition of the field – discipline, if you will – offered at Delft aims at implicit inclusiveness and explicit succinctness. Clearly, that is asking for trouble. Kropf and Malfroy find lurking ambiguity in the definition. In part, the disagreement seems to be over a definition *sensu lato* (mine) versus one *sensu stricto* (theirs). Yet possible ambiguity in the former is not an automatic quality, nor necessarily a disqualification of it. Most succinct statements run the risk of having thorny ambiguities laid bare.

It is hard to argue with Kropf and Malfroy's assertion that urban morphology should approach the built environment as 'an enormous set of indices of the human activity that created it', and that it should highlight 'those aspects of urban form that escape the awareness of the agents that influence such form'. But to advocate excluding the cultural meaning of such indices, intentional or otherwise,

from the thoughtful practice of the field is nothing short of remarkable. Certainly semiology is particularly well equipped to probe symbolism, but surely in pursuing 'the relationship between built forms and the symbolic purposes of builders' there is fertile ground on which the two, for example, and even some other fields, can meet, overlap, and assimilate relevant insights?

The key complaint about including symbolic meaning in the definition of urban morphology seems to be that it appears to mix explicative and exegetical methods. Without question, such a methodological distinction is important to make, but which sciences embody only one to the rigid exclusion of the other? Would Kropf and Malfroy have urban morphologists limit their work simply to measuring – in the language of statistics – the 'dependent' variable, while leaving the identification and interpretation of the 'independent' variables to other disciplines? Is urban morphology to be reduced to mere pattern-recognition as a self-imposed end in itself? They justify this on grounds of a 'division of labour', but should not the field aspire to as holistic an interpretive synthesis as the immediate topic at hand requires? Not for a minute does the Delft definition imply that all studies in urban morphology must, for example, *necessarily* include semiotic or quasi-semiotic analysis; simply, that a rounded approach to explaining, and, yes, understanding the morphogenesis of the built environment might well on occasion profit from doing so. Thus, in practical terms a divorce between measurement and meaning seems untenable, and limits interest and applicability. Citing the role of morphology in linguistics as a parallel for the entire scope of urban morphology itself seems of questionable value. Language forms exist almost entirely within a social system, except for their physical expression in loose, engraved, stamped and digital materials, and are materially far less dependent on environmental circumstances than are the multitude of built structures in cities and their spatially-rooted arrangement within them. The analogy is no more helpful than the flawed idea that cities can be equated with 'organisms', since the latter reflect no endogenic choices made in their behaviours, however produced, whereas cities represent an almost infinite and cumulative plethora of such choices on the part of their