

Exploring Ontologies of Historic Landscape Characterisation: Towards an approach for recognising the impact of incremental change to historic legibility in urban areas

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Abstract. Historic Landscape Characterisation is a GIS-based mapping approach for documenting the character, time-depth and degree of historic visibility present in the modern landscape. It is an approach that was pioneered by English Heritage in the mid-1990s and is currently over halfway through completing full coverage of the English landscape. Philosophically its aims are in accordance with those expressed by the European Landscape Convention (the Florence Convention 2000) as the programme of characterisation recognises that all landscape has history and the fabric of the past is interwoven with every aspect of the present. Obviously the degree to which this is visible or 'legible' varies greatly from place to place and the depth of time that is represented may be relatively short, but the subtle influence of underlying spatial patterning and land-use still can have a significant influence on the character of the environment that we live in today.

If we are to consider that all landscape has historic character and that the legibility of the past is an important resource, to be respected throughout the process of modern change and new development, then we need to ensure that planners, developers and architects have the necessary tools to treat historic legibility with sensitivity. Historic Landscape Characterisation is a mapping method that has been influenced by other characterisation practice common in Europe, such as Landscape Character Assessment and is designed to be complimentary. Information regarding the presence and visibility of historic character in all parts of the landscape provides an important tool and, whilst this has been developed over many years for rural areas, its application in urban environments is relatively new. There is also a relative lack of critical research regarding its use in anticipatory planning and the design process and very little technical research into its full potential as a modelling tool in GIS.

This paper aims to theoretically explore an ontological framework for the attribute of legibility in HLC and proposes possibilities for creating a 'legibility matrix' across urban areas for use in planning and development. The traditional 'buffer zone' approach for protecting the overall context surrounding 'special' historic remains is less applicable when considering the general concept of legibility since this is intrinsically part of all modern surroundings. By exploring the relationships between historic features and their legibility, it may be possible to create a GIS-based tool to illustrate impact on the matrix as a whole if one or two of its parts were to be removed through development.

stakeholders (planners, architects, designers) have the responsibility not only to plan and design landscapes of the future but to do so sympathetically and with consideration to our inherited historic landscape. Historic Landscape Characterisation is explored here as a possible means of providing additional categories and relationships so as to support axioms of impact assessment and resource management.

The problem with creating tools that help define capacity for change is that value judgements will inevitably be required, with regard to the historic environment, in order to form the basis for decision-making. This need for a system of ranking will often favour the oldest, rarest, most important and ‘the best’ which obviously results in specific sites, monuments or remains being favoured over others. This process is at risk of devaluing the wider historic landscape and subsequently provides one of the main drivers for change present in the landscape philosophy of the European Landscape Convention and in the programme of Historic Landscape Characterisation. This leads to the questions of; ‘how might the holistic treatment of historic environments work in practical terms?’ and ‘can a domain-specific ontology for archaeology be linked to and therefore used by future-oriented stakeholders assessing the contemporary past?’

The contemporary past

Acts of recognition and understanding create two parallel contexts for historic remains. The first is relict and regards its original place in time and its meaning to the society that created it. The second is as an appropriated, contemporary existence that now belongs to modern society and thus has new and alternative (or additional) meaning.

“Material culture of past societies which, by virtue of being appropriated by archaeologists in the act of discovery, becomes their material culture too” (Edgeworth 2003, 108)

In this case, whilst landscape features will have their various origins in the past, they are now appropriated by us as modern, contemporary features that may take on new meaning through their existence in a modern setting. Architectural features, spatial alignments of streets and boundaries will all point to the land use and architectural decisions of the past and it is the interplay between these and more recent architectural and spatial forms that can define the historic character of a city.

Historic Landscape Characterisation

Historic Landscape Characterisation (HLC) is an approach that aims to record the past in its contemporary setting and to document historic landscape features as parts of the modern environment. Characterisation as a general tool for managing change in the landscape was originally derived from Conservation Area Legislation (Clark, Darlington and Fairclough 2004) which came into being from the Civic Amenities Act of 1967. This was originally introduced as listed building legislation was deemed inadequate for the protection of character in areas of urban development. A

importance of all elements equally, but also the means of their creation – the diversity of human agency. When we experience the remains of the past we are primarily looking at the products of change and so it is important that we continue to facilitate change but in a sustainable manner that neither fossilises context-less ‘special’ places nor erases heritage all together simply because it fails to match a particular set of criteria based upon levels of national importance.

Legibility then can provide a temporal anchor and sense of transition without which we would effectively create a continual present that is forward looking but has no link to the past. This is not to value nostalgia but is a much more functional perspective that recognises the need for temporal orientation and respect for the historic environment as a resource. In this sense, the presence of historic legibility is a characteristic in the landscape that can be valued above its absence and so provides us with the logical basis for assessing capacity for change. The preservation of legibility will require further categories and relationships to be added to the archaeological ontology presented by Chunxia Zhang et al and will focus on describing how time-depth is *perceived* and so what are the characteristics of spatial forms that enable the urban landscape to be ‘read’ as to its varied historic origins. By mapping such relationships ontologically it is feasible that the removal of one relationship will alter the state of others and so highlight where landscape change may affect our continued ability read the past.

A conceptual influence on how this may be achieved is the early, experimental use of Time-Depth Matrices which were explored in the pilot HLC project conducted in Cornwall (Herring 1999). Matrices were used to here to illustrate the primary form of evidence that may be expected when regarding various archaeological periods within the landscape. The attribute of legibility in this case is supported by the expected form that it would take, such as; extant landscape features, subsurface archaeology, circumstantial evidence, documentary evidence or palaeo-environmental (figure 2). Matrices were not openly adopted by all subsequent HLC projects but stand as a generic and potentially useful tool for the non-specialist stakeholder when assessing the nature of legibility within particular historic character types. By exploring the concept of time-depth matrices further, but increasing their scope to map the way in which legibility can be determined for a specific (rather than generic) historic feature then we potentially create a tool for urban designers to assess the historic impact of their actions on the ‘readability’ of the past in the present.

Returning to the work by Chunxia Zhang et al, an additional ‘Legibility’ category could be related to ‘Archaeological-Culture’ through the ‘part-of’ relationship class of: ‘Component’ (figure 3). ‘Collection/Member’ (‘part-of’) related categories for ‘Legibility’ then define how legibility is constructed. For example:

1. *Spatial* – Legibility of the past through form rather than fabric (ie modern road alignments)
2. *Material* – Legibility through recognition and interpretation of fabric
3. *Contiguity* – Legibility based on the close spatial proximity of evidence

the ‘readability’ of the past as an important resource we must protect it through additional means to the more traditional and ‘fabric-based’ evaluation that is often applied to archaeological and architectural features. In the example of the ‘Crofts’, preservation of historic legibility was achieved, albeit somewhat serendipitously, through development that followed a pre-existing grain or footprint of the past. By employing the suggested ‘part-of’ categories presented in this paper with a more traditional domain-specific ontology, we might begin to model the process of interpreting the past in the present. For example, the legibility of these medieval croft enclosures could be described as being reliant on a combination of ‘contiguous’, ‘spatial’ forms that are experienced in ‘plan’. The ‘perspective’ category is rejected since modern buildings hinder our reading of time-depth at the street-level as is ‘material’ since the alignment of boundaries are retained only by modern fabric rather than medieval. In this simple example, building height and style might be assumed to have less impact on the preservation of medieval legibility of the ‘Crofts’ than changes to street layout or the renaming of streets.

Summary

To the urban designer, the knowledge that an ancient field boundary, for example, is visible through a combination of streets and walls is vitally important to the assessment of capacity for change. The boundary may not physically remain, but its *form* may still be present in the alignment and configuration of modern fabric. In this case it may be perfectly acceptable to change the fabric of the streets and walled boundaries, but arguably, it would be beneficial to the historic character of the area to preserve the legibility of the past by retaining their spatial alignment. Building heights, for example, may also be influenced by the extent to which historic legibility relies on perspective or ‘street-level’ perception rather than aerial or plan views. A formal ontology is proposed here as a method for structuring and managing the inherent complexity associated with the various means by which we perceive the past in our contemporary surroundings. This is presented as a tool to aid the preservation of our very means of reading the past in a living, urban landscape. By linking legibility categories to an existing HLC GIS, the proposed ontology would theoretically support an ability to search for areas where the modes of perceived historic legibility might be compatible with the type of planned change. By examining the ‘Crofts’ we may appreciate that change brought about by industrial expansion was ultimately responsible for preserving the footprint of a medieval past and therefore helps retain a region’s ‘lines of life’ (Cullen 2006, 111). It is hoped that this paper provides some indicators as to how the process of archaeological and historic interpretation may be linked to existing characterisation map resources for assessing not only the impact of change but also to help influence its design.

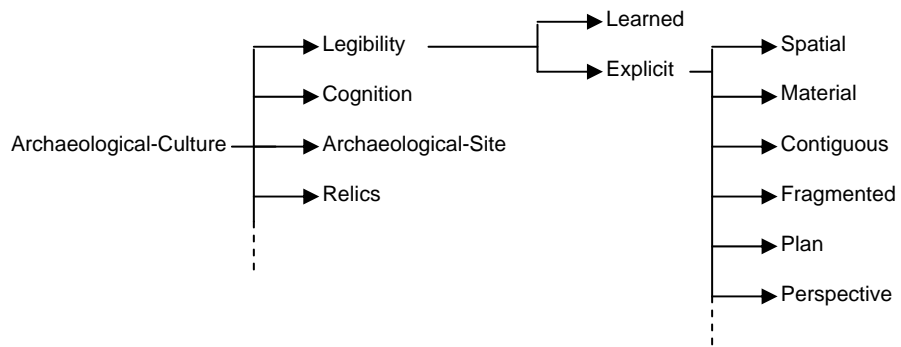


Figure 3: 'Legibility' in the Backbone Structure of Archaeological Categories. Based on: Chunxia Zhang et al (2002, 219)



Figure 4: A typical street-scene of The 'Crofts' in the 19th century (Source: Sheffield Local Studies Library)

- Perring D, Roskams S & Vince A 2001 *New approaches to post-excavation on complex sites: the Project Design*
(http://www.york.ac.uk/depts/arch/napex/napex_intro.htm)
- Rippon, S. 2004 *Historic Landscape Analysis: Deciphering the countryside* Council for British Archaeology