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The Outside Inside: Combining Aerial Photographs, Cropmarks and Landscape Experience

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Abstract This paper seeks to make a contribution to current debates concerning the dislocation in landscape research between experiential approaches and quantitative techniques of landscape analysis. It focuses upon a group of archaeological sites that are caught in the centre of this divide: plough-levelled sites recorded as cropmarks on aerial photographs. The application of experiential landscape analysis to plough-levelled sites is explored, along with the value of incorporating information derived from the study of the aerial photograph. It is contended that richer, more rounded, interpretations of landscape are possible when combining aspects of quantitative and qualitative landscape research.

Keywords Cropmarks · Landscape · Experience · Archaeology

Introduction

This paper seeks to make a contribution to current debates concerning the apparent divide in landscape research between experiential archaeologies, focusing on subject-centred interpretations and quantitative, often GIS or otherwise computer-based, analysis and modelling of past landscapes. For some, this is a contrast between working from 'inside' a landscape (the experiential-based approaches) and abstracted 'outside' experiences of landscape, such as those gained from maps, aerial photographs or computer-based approaches (Thomas 1995; Johnson 2007, pp. 89–93; Tilley 2008). In this paper, I will argue that the two are not as incompatible as has sometimes been suggested (Thomas 2008). Instead, richer, more holistic, interpretations of landscape can be achieved by drawing from both sides of this divide and by combining aspects from both 'inside' and 'outside' landscapes. In order to achieve this aim, this paper shall focus upon a group of archaeological sites caught in the

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middle of this dislocation: plough-levelled sites recorded as cropmarks on aerial photographs. I will consider the landscape information that can be derived from the study of aerial photographs themselves, the value of experiential-based approaches to cropmark sites and the potentials of drawing cropmark information into experiential archaeologies.

Before moving on, it is important to clarify the scope of this paper. Although there are many other techniques which aim to understand the landscape and the perception and experience of space, this paper focuses specifically upon aerial photographs, cropmarks and experiential analysis. In part, this is because I would like to deal specifically with some of the issues associated with the use of aerial photographs within experiential analyses, but is also due to the constraints of space. Consequently, I will use cropmarks as one example of the way in which information drawn from 'outside' a landscape can enhance the 'inside' experience. Additionally, this paper will concentrate upon phenomenologically inspired engagements with cropmarks rather than traditional field visits. Of course, it is important not to forget that aerial archaeologists have long sought to incorporate field visits into the study of cropmarked sites (*e.g.* Crawford and Keiller 1928; Crawford 1955; Palmer 1984; Bewley 1994; Cowley and Gilmour 2003; Cowley 2009), and a debt of gratitude is owed to them for their demonstration of the value of visiting 'flat' sites. Yet, relatively few of these have been undertaken from an experiential perspective, underpinned as it is by a distinct philosophical tradition emphasising bodily engagement and experience as a means of accessing and interpreting past landscapes (Bender 1993; Tilley 1994; Thomas 2004, 2008; Gillings 2011). Experiential approaches refer here to research undertaken in the field recording the landscape experience of embodied participants; it is the approaches undertaken from this perspective with which this paper is concerned.

Finally, I will not touch upon virtual reality modelling and other computer modelling techniques as space does not permit a reiteration of the complex issues surrounding their use (*e.g.* Goodrick and Gillings 2000; Thomas 2004, pp. 198–201; Brück 2005, pp. 52–54). Although they have a developing role within archaeological research (*e.g.* Pollard and Gillings 1998; Edmonds and McElearney 1999), such computer models cannot replace a bodily engagement with landscape. Instead, they represent an approximation of the landscape rather than the meaningful spaces and places of human engagement (Chadwick 2004, p. 21; Thomas 2004, pp. 198–201; Brück 2005, p. 54). Of course this does not preclude their inclusion, or indeed the inclusion of any other method of landscape analysis, into the approach discussed below, just that they cannot take the place of a physical engagement with the landscape. Let us now return to the role of aerial archaeology and cropmarks within this debate.

Between the Outside and the Inside: Aerial Archaeology and Cropmarks

Within some quarters of archaeological research concerned with past landscapes and the perception and experience of space, there exists an apparent divide between quantitative, largely computer-based, studies and more theoretically explicit, qualitative or experiential approaches (Gillings 2009). Quantitative studies, often based

upon sources such as maps and aerial photographs, employing computer-based technique such as GIS, and focusing upon critical innovation and the refinement of techniques (*e.g.* Lock 2000; Westcott and Brandon 2000; Chapman 2003), sit uncomfortably alongside a theoretical literature that has increasingly rejected such approaches as flawed methods of looking at the world (*e.g.* Thomas 2004; Tilley 2004).

Although there have been some notable attempts to bridge this divide (*e.g.* Llobera 2000; Hamilton *et al.* 2006; Sturt 2006; Gillings 2009), these remain in the minority, and relatively few researchers have attempted to challenge this dislocation. For some, this division is not problematic, and experiential archaeologists in particular often appear content to keep map or computer-based landscape approaches at a distance (Thomas 2004, 2008; Tilley 2004). Thomas (2008, p. 304) contends that this is because the landscapes that phenomenological and computer-based researchers study are fundamentally different entities—either the experienced landscapes of human dwelling or inert arrangements of matter. Therefore, the two are incompatible and so, by definition, must remain separate. Yet, this perspective does not appear to recognise the strenuous attempts that some computer-based landscape researchers have made to integrate theory within their studies and to move away from landscapes as 'objective', value-free entities (see Thomas 2008, p. 304), the very real strides that have been made to consider some of the theoretical concepts and criticisms raised by phenomenological researchers, and to integrate theories of dwelling (*e.g.* Llobera 1996, 2000, 2010; Gillings 2009; Wickstead 2009). Nor does this viewpoint consider the possibility that some elements drawn from quantitative landscape research may be able to complement, add to and enrich experiential narratives, particularly with regard to landscape change.

This dislocation and the problems with maintaining such a perspective can be illustrated by plough-levelled sites. On the one hand, archaeological sites recorded as cropmarks on aerial photographs, and plans created by mapping these plough-levelled sites, represent the abstracted 'outside' experience of landscape. On the other hand, as the remains of past sites and landscapes, they can only be fully understood through the 'inside', embodied, experience of landscape. If Thomas' (2008) assertion is to be believed, this means that plough-levelled sites must be approached through differing and separate means, resulting in different, and ultimately incompatible, interpretations of landscape. In reality, this cannot be borne out, and it is argued here that both the 'inside' and 'outside' perspectives of landscape have much to add to the interpretation of sites and landscapes recorded on aerial photographs. By taking such a 'middle ground' approach, it becomes possible to move the understanding of cropmarked sites beyond maps and plans, to consider them as real spaces and places and also add data, integrity and control to experiential approaches. This latter point is key considering some of the criticisms directed towards phenomenologically inspired archaeologies (*e.g.* Fleming 1999, 2005, 2006; Brück 2005; Barrett and Ko 2009). In particular, it may help address concerns regarding the limited engagement of experiential approaches with landscape change (*e.g.* Chapman and Gearey 2000; Cummings and Whittle 2003; Brück 2005; Fleming 2005).

For some, however, this division between 'inside' and 'outside' may be too strictly drawn, yet there is an increasing sense in the literature of the inability of experiential researchers and spatial technology practitioners to fully engage with one another

(Thomas 2008; Tilley 2008; Gillings 2009, 2012; Llobera 2012). Although this has predominantly addressed a GIS/experiential divide, the aerial view is not exempt, and the use of aerial photographs and maps in conjunction with experiential approaches has come under similar criticism (*e.g.* Tilley 1994, 2008; Thomas 2004, 2008; Hamilton *et al.* 2006). Indeed, some of those who have employed experiential analyses across plough-levelled sites have felt the need to qualify their use of maps and aerial photographs (see Tilley 1994; Hamilton *et al.* 2006), in effect describing them, along with other forms of 'representation', as a 'necessary evil' that could not be avoided. Such a perspective is further emphasised by the fact that much of the literature dealing with phenomenological perspectives is directed towards employing experiential approaches at upstanding sites where something remains to be experienced (*e.g.* Cummings *et al.* 2002; Tilley 1996, 2004; Brück 2005, p. 62; Barratt and Ko 2009), thereby apparently excluding 'flat' cropmark sites. Therefore, there are issues which require to be addressed—specifically the low regard with which aerial photographs and cropmarks appear to be held by many experiential practitioners and their apparent rejection within phenomenological literature as anything other than a necessary means of recording the presence and character of archaeological sites.

Consequently, cropmark sites and the landscapes identified on aerial photographs have tended to play only relatively minor roles in the approaches employed by phenomenologically inclined archaeologists, most focusing instead upon surviving monuments in the uplands (*e.g.* Tilley 1996, 2004; Cummings *et al.* 2002; Fraser 2004; Cummings and Pannett 2005), although there are some notable exceptions (Tilley 1994; Brophy 1999; Poller 2005; Hamilton *et al.* 2006; Millican 2009, 2012). This imbalance is further emphasised by the contexts within which cropmark sites are most often recorded and studied—as elements of programmes of reconnaissance by organisations such as the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) or English Heritage, where the emphasis is upon recording and classification rather than field-based experiential research. However, even within academic contexts, plough-levelled sites have received relatively little attention from experientially based approaches.

Nevertheless, despite the reservations, a number of experiential studies have been attempted at plough-levelled sites (Tilley 1994; Brophy 1999; Poller 2005; Hamilton *et al.* 2006; Millican 2009, 2012). Those undertaken by Brophy (1999); Poller (2005) and Millican (2009, 2012) employed much more positive views of cropmarks than those indicated by Tilley (1994) and Hamilton *et al.* (2006). All demonstrate that experiential approaches are possible at plough-levelled sites and can enrich the way in which these sites and landscapes are understood. Few of these studies, though, employed cropmarks as anything more than a means of locating sites. Of course it is possible that the interpretation of cropmarks had nothing further to add in these examples; yet, there is little sense that the possibility was explored. It is this additional information, along with the basic archaeological data, that may add to experiential analyses of archaeological sites. I will explore this 'middle ground', drawing in 'outside' data derived from cropmark interpretation into the 'inside' experience of landscape, in the remainder of this paper. However, before looking at the application of experiential approaches to plough-levelled sites, I would like to consider aerial photographs and the information that can be derived from the recorded cropmarks.

Aerial Archaeology and Cropmarks—the 'Outside' View

Cropmarks of archaeological sites are recorded on aerial photographs and represent the abstracted 'outside' experience of landscape. At its most basic, this is because maps and aerial photographs depict a three-dimensional world on a two-dimensional surface, placing the viewer firmly outside the experience and presenting a picture of the world that its inhabitants would not recognise (Thomas 1995, p. 28). Such a perspective is always partial and distanced; to quote Tilley (2008, 272), "the view from an airplane is inhuman". Consequently, such representations are viewed as the antithesis of experiential archaeologies, which seek to gain a bodily engagement with landscape.

There is certainly no denying the fact that aerial photography and the phenomena recorded by this technique represent a detached view (Brophy 2005). Photographs are taken from an aeroplane hundreds of metres above the ground, recording phenomena in modern crops influenced by buried features and studied predominantly from the printed or digital image in the office or lab. The study of the aerial photograph often takes the form of rectification (*i.e.* the transformation of an oblique image into a plan view) and the transcription or mapping of the cropmarks. The end results are plans of cropmark sites, sometimes presented as cropmark landscapes, or, perhaps more commonly, plans of individual sites (Fig. 1). However, despite the reservations of experientially inspired archaeologists regarding the use of aerial photographs and maps of cropmarks (Tilley 1994, p. 21, 2004, p. 218; Thomas 1995, p. 25; Hamilton *et al.* 2006, p. 37), cropmark sites cannot be identified in any other way; they record plough-levelled sites where little or no aboveground features remain. Even if it were possible to identify a cropmark from the ground, the aerial perspective is required to make sense of it (Crawford and Keiller 1928, p. 6; Wilson 2000). Therefore, the aerial

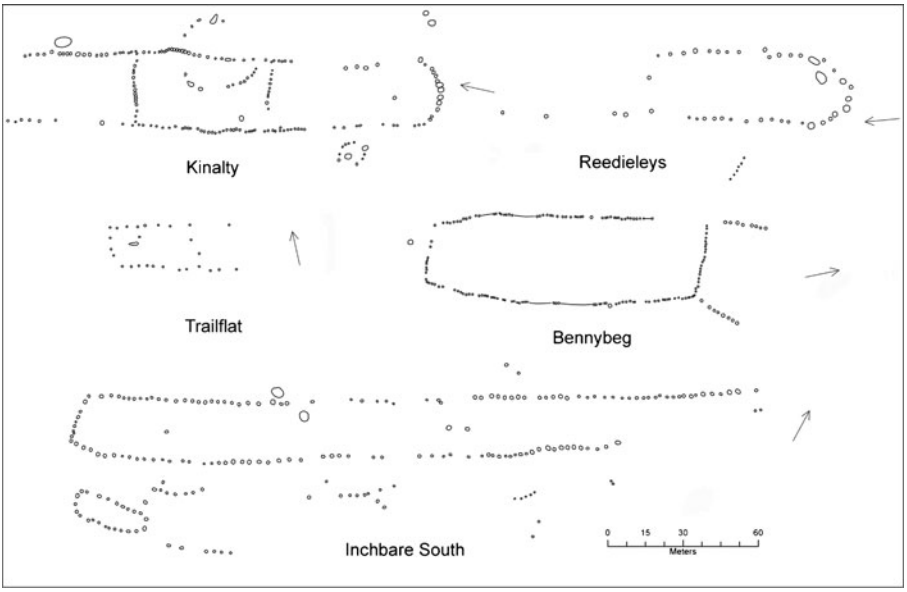

Fig. 1 Mapped plans of cropmark sites, in this case timber cursus monuments, often the final stage of cropmark analysis (image by author)

view is both an important and necessary technique to record and understand such sites. Indeed, few archaeologists would deny the value of aerial reconnaissance, nor the fact that it has served to transform our understanding of lowland archaeology (Maxwell 1983; Hanson and Macinnes 1991). It is when aerial archaeology is used to inform the understanding of past experience and the perception of landscape, rather than just provide the locations and plans of individual sites, that difficulties appear to arise. In this respect, experiential archaeologists could learn from those undertaking more 'traditional' field visits and make more positive use of the wealth of information revealed by cropmark on aerial photographs. It is this additional information that has the potential to inform and enrich experiential approaches.

As archaeological sites usually form the focus of aerial photographs taken for archaeological purposes, the most commonly derived information is that relating to the cropmark sites themselves and the interpretation of the marks in crops. Excavated and known upstanding sites (in other words, morphological parallels) form the basis for these interpretations. Therefore, a ring of small circular marks in crops can be interpreted as the postholes of a later prehistoric roundhouse and linear cropmarks arranged as a long rectilinear enclosure as a cursus monument. Information about individual sites can be combined to provide plans of 'cropmark landscapes' (*e.g.* Stoertz 1997) or amalgamated with information regarding sites recorded by other means (*e.g.* Barclay 2005; Brophy 2007a; Millican 2009).

Aerial photographs can also often provide other information relevant to landscape studies, such as the location of relict stream beds, soil differences, or other geological or geomorphological features (Wilson 2000; Palmer and Cowley 2010; Palmer 2011), potentially providing unique insights into the wider context of the archaeological sites being studied. Due to the levelling effects of modern ploughing, all features, both geographical and archaeological, may be flattened in areas of modern cultivation. This means that, as with cropmark archaeological sites, information regarding such natural features often cannot be derived in any other way. This is of relevance when considering past sites and landscapes as it can detail landscape features that are no longer obvious and may also provide information about landscape change. This is clearly illustrated by the examination of geomorphological features recorded as cropmarks around the Mesolithic pit alignment and Neolithic timber hall at Warren Field in Aberdeenshire (Tipping in Murray *et al.* 2009, pp. 3–4). Here, within what is today a relatively level field, Tipping identified several relict stream beds and a gravel ridge visible in the cropmarks. All are likely to have been much more obvious in the past than they are today and appear to have influenced the choice of location for these sites as well as the way in which they would have been experienced. The Mesolithic pit alignment follows the line of a possible gravel bar between two palaeochannels, whilst another palaeochannel can be seen to curve around the location of the Neolithic timber hall and may have been used to demarcate the location of this site.

The dating of such features, though, can be difficult, and not all geomorphological or geologically related cropmarks may be relevant to the archaeological sites and landscapes being studied. For example, the cropmarks of infilled braided stream channels are a common feature on gravel terraces across Scotland, yet many of these represent outwash after the end of the last Ice Age (Stephens 1990, pp. 107–110; Wilson 2000, p. 177; Huggett 2007, p. 271) and so have little relevance to the archaeological landscapes being studied. Similarly, tree throws (hollows left when a

tree is uprooted and recorded on aerial photographs as small crescent-shaped features) are also a common cropmark feature on aerial photographs, sometimes recording the former presence of forest (Noble 2006). These features may be of any date, and indeed may represent afforestation over a wide range of dates. Nevertheless, although un-datable from cropmarks, their presence in today's treeless arable fields serves to highlight the altered nature of the modern landscape.

Therefore, the recognition and mapping of these geographical and natural features alongside the archaeology (whether this is cropmark or upstanding) provides vital additional information regarding the landscape location of the sites studied. In particular, they can suggest some of the landscape changes that have taken place and remind us that the landscape we encounter today is considerably altered from that experienced by our prehistoric ancestors. Such details are derived from the 'outside' experience of landscape, from the interpretation of aerial photographs. Yet, they have the potential to impact upon and add to experiential approaches to landscape, particularly with regard to an understanding of landscape change. Therefore, it is to experiential approaches and the 'inside' view of landscape that we now turn.

Cropmarks and Experiential Archaeology—the 'Inside' View

As outlined above, cropmarks have made relatively little impact upon phenomenological literature, most of which is directed towards experiencing surviving monuments and their landscapes. One of the main barriers to any field-based research involving cropmarks is the fact that they are plough-levelled and so there is rarely anything of the site or monument left to see. A flat, largely featureless field can be a relatively uninspiring prospect for any experiential archaeologist (Fig. 2)! Indeed, there is a very real difference between experiencing a monument and experiencing nothingness where a monument used to be. The modern nature of the landscape setting is very apparent when dealing with cropmark sites, sited as they are within modern, ploughed fields, where access is restricted by field boundaries, modern

Fig. 2 Typical view encountered at a plough-levelled site. A seemingly uninspiring prospect for the aspiring experiential archaeologist! (photograph by author)

plantations and the presence of crops within the fields. Consequently, details of the mapped cropmarks and accurate coordinates are essential even just to locate such sites.

Yet, approaching cropmark sites from an experiential perspective may not be as far removed from engaging with upstanding monuments as appears at first, and with a little perseverance and some imagination, experientially inspired archaeologies can enrich our understanding of mapped cropmarks and their landscapes (see, for example, Tilley 1994; Brophy 1999; Poller 2005; Hamilton *et al.* 2006; Millican 2009). Firstly, even the surviving monuments that have been subject to experiential approaches survive in only denuded form (Poller 2005, p. 156), and they too are located within the modern landscape. This means that it is not possible to engage directly even with upstanding monuments as they were originally constructed, and consequently, a certain amount of imagination is required in order to appreciate how they may have appeared in the past. Therefore, surviving sites and monuments suffer from a similar temporal detachment as that experienced at cropmark sites, though clearly the degree of detachment is far greater at plough-levelled sites.

Secondly, phenomenologically inspired research emphasises the importance of the landscape setting of sites in the experience and engagement with places (Tilley 1994, 2004; Cummings *et al.* 2002). Sites and monuments are not separated from the locations in which they are built, nor are they imposed upon a place; instead, they are intimately connected with their locations, built out of and through an engagement with place (Gow 1995, p. 47; Ingold 2000). In particular, the specific landforms and micro-topographical features of a location would have served to structure the experience of place, forming one part of the engagement of place influencing monument construction. This would have continued to influence the experience of monuments and landscape after completion. This means that the location of these sites, even without surviving archaeology, may provide insights into the material engagements, values and choices of the builders.

Dealing with cropmark sites on the ground, though, requires a sensitive approach to landscape because of the flattened nature of ploughed landscapes. It forces one to consider and engage with the bones of the landscape on a more intimate level than may be the case when there is upstanding archaeology as, in the absence of surviving features, attention is drawn increasingly to the topographical location, in a sense permitting us to 'see through' the monuments. As such, a field-based study of the locations of cropmark sites may be able to offer new perspectives on the landscape setting of archaeological sites and the material engagements of the builders. Such perspectives may enable us to move away from the viewpoint of building as an imposition of order on the world, a perspective highlighted as problematic by Barrett and Ko (2009) yet implicit in much phenomenological literature, to a consideration of the monuments as the labour of an engagement with material realities (Barrett and Ko 2009, p. 284). They are also one way of moving beyond morphological considerations of mapped cropmarks as they force the consideration of these sites as three-dimensional spaces and real places, a perspective that is very easy to miss when studying plans of mapped cropmarks or the aerial photographs themselves, which tend to 'flatten' the topography.

The application of experiential archaeologies to cropmarked sites and monuments, therefore, clearly has potential to enhance and transform the understanding of these

sites and landscapes despite the lack of upstanding archaeology. Such narratives can be further developed and enriched by carrying in details derived from 'outside' the landscape, such as those from aerial photographs, discussed above.

Combining 'Inside' and 'Outside': Westerton, Perth and Kinross, Scotland, UK

This can be illustrated by the results of the landscape study of a cropmark site at Westerton in Perth and Kinross, Scotland, UK (Millican 2009). My interpretation of this site was built up through a combination of the detailed analysis of the available aerial photography, the rectification and transcription of the cropmarks, and ground-based experiential study. Defined in cropmarks by a series of post-pits outlining a rectangular structure measuring approx. 27×9 m (Fig. 3), it can be assigned morphologically to a group of structures classified as timber 'halls', probably dating to the later part of the Neolithic (Brophy 2007b; Millican 2009). Today, this site is located

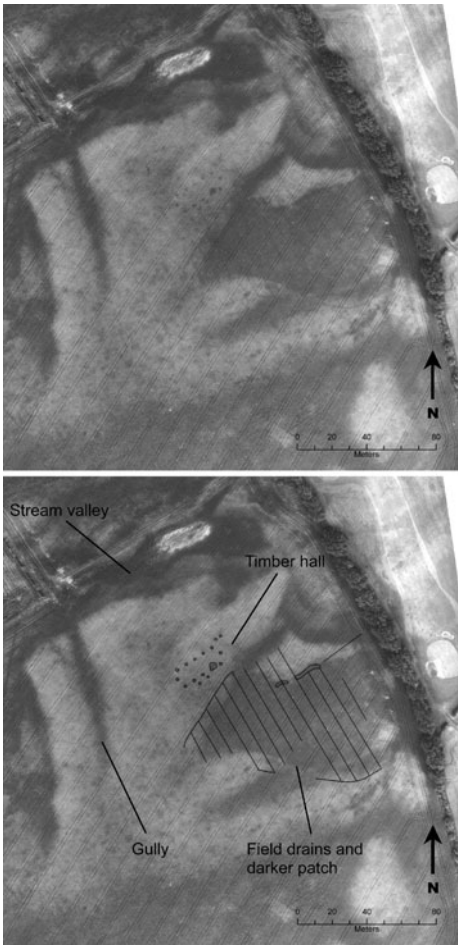

Fig. 3 Westerton. *Top* Rectified aerial image of the cropmarks. *Bottom* Transcription of the cropmarks overlain on the rectified aerial image. The main features discussed in the text are annotated (image: Crown Copyright RCAHMS. C52230. Transcription: author)

Fig. 4 Location of Westerton timber hall from the ground, taken from the southwest (photograph by author)

within a large, open, arable field (Fig. 4) and is situated on a relatively level terrace, on a slight spur, overlooking a stream valley to the north and smaller gully to the west. From the location of the timber hall, the ground slopes away quite sharply to the stream valley to the north and northwest and more gently to the east and west (Fig. 5). Consequently, its location appears to have been effectively defined by the topography on three sides, though the slope to the east is very gentle and may not have provided much definition. Nevertheless, this topography affects both the most practical direction from which to approach this site—if on the same level as the hall, this would be from the south—and perhaps also the impact of this structure on the person approaching. As the timber hall was positioned close to the break of slope to the north, it would have towered above anyone approaching from below, and to a lesser extent to the east

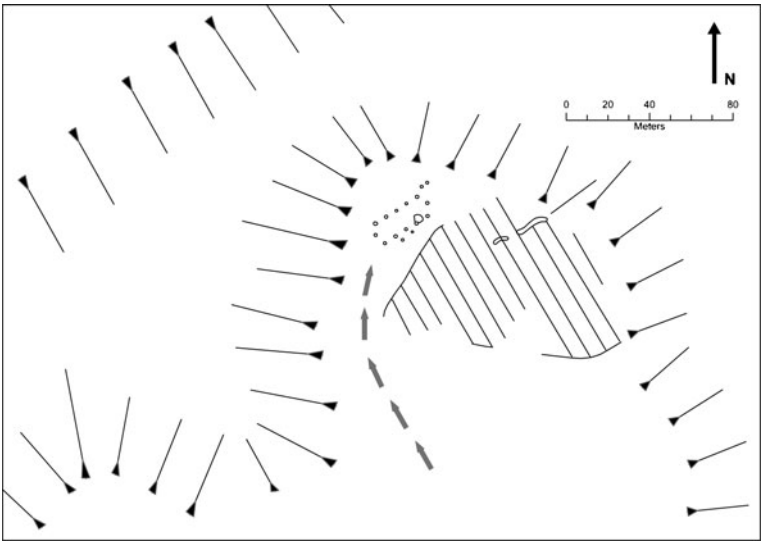

Fig. 5 Sketch plan of Westerton showing the details of its location. *Arrows* indicate the probable route into the timber hall, if the terrace edges and damp hollow were avoided (image by author)

and west where the ground slopes away less sharply. This is an important insight, suggesting that the location of this structure may have been carefully chosen and the topography employed to create or emphasise particular effects and to structure access to the site. However, this is as far as this understanding of landscape can be taken without further detail from elsewhere. Detailed examination of the aerial photographs provides this additional information. When applied to the experiential approach, a more nuanced understanding of landscape emerges.

Of particular relevance is a darker patch visible in the cropmarks, immediately to the southeast of the timber hall, within which are the distinct cropmarks of modern field drains (Figs. 3 and 5). This indicates that this feature represents a poorly drained area, which may have been quite wet in the past; no other areas in the immediate vicinity show evidence of having been drained so intensively. On the ground, a very slight hollow can be discerned in this location, matching the darker area in the cropmarks. Bearing in mind the flattening effect of the plough, and the smoothed nature of the field today indicates that it has been ploughed repeatedly and perhaps over a long period of time, this hollow is likely to have been much more prominent in the past. It is therefore possible to surmise that the location of the timber hall was further defined by a damp hollow to the southeast, thereby constricting its location—and access to the structure—even more. The stream valley immediately to the north and gully to the west are also highlighted on the aerial photographs as darker areas of crop, indicating that they too represent damper areas of ground.

Taken together with observations of the ground, this suggests that the timber hall was almost entirely surrounded by falling ground and the wetter area. If approached upon the level, only one route is possible, from the south moving towards the west side of the wet hollow (Fig. 5). Indeed, on the ground today, this is the easiest direction from which to approach the site as any other direction involves stepping off the relatively level terrace on which the hall was built, and approaching the hall from below. As a person moved closer to the hall, access would have been directed and restricted further, through the relatively narrow passage between the wet hollow to the east and falling ground to the west. Therefore, the natural topography appears to have been employed to restrict and control access. Once through this naturally defined entrance, one would have been confronted with the western end of the timber hall with the surrounding topography defining a wider area around the structure, perhaps demarcating the extent of activity around the monument and also restricting the number of people who could come close. Therefore, by employing the topography in this manner, the builders were able to subtly guide and control movement to and around this structure.

The restrictions created by the natural topography of this place may also have made construction and use slightly awkward. This was a deliberate choice; there are many other areas in the immediate vicinity free of the added difficulties of wet ground and terrace edges, which must have been eminently more suited to the construction of such a structure. Therefore, this suggests a need to build this hall in a location that would restrict, constrain and direct access, and also clearly define both this place and perhaps the area in which associated activity took place, even to the inconvenience of the builders. This timber hall, therefore, encompassed more than just the physical structure; the location and its restrictions and potentials formed as much a part of the construction, functioning and biography of this hall as the timbers used to build it.

Discussion

The success of an integrated approach to cropmarks at Westerton demonstrates that it is possible to move beyond the quantitative mapping of cropmarks and to apply experiential approaches to plough-levelled sites. The transcription of features recorded on aerial photographs is still a very important stage, permitting accurate interpretation and location of the cropmark features, but interpretation (without excavation) need not end here. This example also shows that the interpretation of aerial photographs can be used to inform, add to and enrich any experiential approach. Indeed, some details of the landscape location at Westerton are now largely erased from the ground by modern landscape processes, and so can only be identified from the cropmarks recorded from the air. In turn, their significance can only really be recognised with reference to an experiential approach. Such details are particularly important when dealing with sites in the agriculturally rich lowlands where landscape change is arguably the greatest. Here, many landscape features have been flattened by the plough or at least are now very difficult to discern, and so often the only information of such features can be derived from the interpretation of cropmarks on aerial photographs. As shown above, topographic features, some often very subtle, may have an impact upon the way in which we can understand the landscape context of archaeological sites.

This is a layered approach that is also hermeneutic in nature. In other words, data are layered upon interpretation to reach a more satisfactory conclusion. It need not be restricted to the landscape location of a single site, as in the example given here, but could be applied at wider scales, particularly considering the varying scales at which aerial archaeology can operate. This case study has focused upon drawing details derived from aerial photographs into an experiential approach. However, information from other sources, such as palaeoenvironmental data or historic mapping, are likely to also be of value and add further details to the wider context of the sites being studied and the way in which they may have been perceived in the past. In other words, the 'outside' information drawn into experiential approaches need not stop at the interpretation of cropmarks, but could include any number of relevant datasets. By layering additional information into experiential approaches, it becomes possible to take better account of the changed nature of the landscape and to use this information to add to, inform, refine and enrich the embodied accounts.

This is relevant as the landscape we approach today has been profoundly altered from that known by our prehistoric ancestors (*e.g.* Foster and Smout 1994; Tipping 1994; Smout 2003). This is certainly the case for lowland sites, such as the timber hall at Westerton, located within modern agricultural landscapes, but is also true for sites in the uplands which usually receive more attention from experiential approaches (see, for example, Tilley 1996, 2004; Cummings 2002; Cummings *et al.* 2002). Because upland locations have often been subject to less obvious change than many lowland locations, it is possible to forget the fact that they too have been subject to landscape change. This may often be on a lesser scale than lowland agricultural areas, but is nonetheless significant, particularly when using experiential approaches to engage with the landscape and consider past perception. Most significant must be the removal of vegetation, but impacts such as peat removal or past and more recent marginal cultivation will also have subtly altered today's landscape.

Therefore, I would argue, it is not possible to truly attempt to interpret landscape using experiential methods without some knowledge regarding landscape change. By bearing such information in mind, derived from the 'outside' view of landscape, more informed and arguably richer interpretations can be made from the ground. Here, the interpretation of aerial photographs may be able to make a significant contribution, though other techniques of landscape analysis are also relevant. This does not minimise the value of experiential approaches. Instead, it suggests that without additional information from the 'outside' view, we are missing details that would have been very obvious to past communities, but which have been lost to observers on the ground today.

Conclusion

This paper has focused upon aerial photographs and landscape experience and sets out a view of the intertwining of quantitative information (the 'outside' experience) and embodied, 'inside', experience on the ground. It is contended that valuable information and insights are missed when the two are not employed in conjunction with one another and that a 'middle ground' approach has the potential to enrich narratives of landscape. Perhaps the view from above is 'inhuman', as Tilley suggests, but equally, the landscape we approach on the ground is profoundly altered from that our prehistoric ancestors encountered. In other words, a temporal detachment is as problematic as a spatial detachment. This is doubly so for sites within modern farmland. The aerial view can provide clues to the alterations that have taken place in the shape of the landscape and is important for helping us approach and experience plough-levelled sites on the ground with greater integrity and focus. Therefore, by bringing together quantitative and qualitative aspects of cropmark sites and landscapes, and using a layered approach to data gathering, interpretation and integration, a more rounded, holistic picture of sites and landscapes can be built.

Although this paper has focused on aerial photographs, approaches combining the 'inside' and 'outside' views of landscapes need not be confined to cropmarks. Indeed, the interpretations discussed above could certainly be further enriched by drawing in details from other sources of information about the landscape, such as palaeoenvironmental data, historical mapping or computer modelling. Essentially, there should be no conflict about drawing information derived from quantitative analysis into experiential approaches and *vice versa*. Each is intertwined with the other, and in building up these different layers of information, experience and data, I think we can build together more interesting and richer interpretations of past landscapes.

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