

## Vision in motion

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**Abstract:** Mobility and materiality are pervasive and revealing features of professional vision. In this paper I examine how landscape architects assess visual and landscape effects of proposed urban or rural developments. A focus on mobility and materiality reveals a struggle for objectivity and transparency, and the lived reality of Latour's observation that 'we have never been modern' (1993). But it also highlights the emergence of new forms of perception and epistemic practice. Based on work with landscape architects and computer scientists in participatory technology research and design projects, I present an analysis of current practices and some observations on emerging future practices of appreciating and shaping places.

### *Introduction*

Lynda, a landscape architect, is driving through Scottish hills and glens, carrying out a landscape and visual assessment. These assessments are required for all major development applications, ranging from housing to electricity power lines (ODPM 1999), to characterise the existing landscape or cityscape and evaluate how it would be affected by development – visually and in terms of its 'sense of place'. Lynda is taking part in an ethnographic study and describes some of the criteria that guide her judgement: 'Someone decided that forestry would be allowed to change that landscape. Now, because the forestry is there, it has less sensitivity and more capacity'.



**Figure 1** The landscape Lynda is referring to (photograph by Envision, [www.envision3d.co.uk](http://www.envision3d.co.uk))

A blanket of monoculture spruce is evidence of human intervention that has changed the character of the landscape (Fig. 1)<sup>1</sup>, and could pave the way for further change.

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<sup>1</sup> Some projects and places have been anonymized, partly because planning considerations are still in progress. However, knowledge of the location and nature of the developments that are the subject of the professionals' attention is not required for the readers' understanding of their practices.

‘Landscape character’, ‘sensitivity’, and ‘capacity’ are professional terms meant to make assessment as objective and transparent as possible (CA/SNH 2002, 2004, LI/IEMA 2002). They are discussed in more detail below. At this point, it is important to note that they attract much debate within the professional and geographic communities involved in urban or rural change, marking landscape and visual assessment as a complex nexus of environmental perception, policy and experience. There are three tasks. First, assessment requires an understanding of the character of particular places. In the professional literature ‘landscape character’ is sometimes used synonymously with ‘sense of place’. In fact, the official summary guidance on landscape character assessment is entitled *Making Sense of Place* (CA/SNH 2002). But the landscape architects also actively shape a sense of place through design suggestions, and assist others, including the general public, in making sense of place as part of their assessment. This is information intensive, mobile, indoor and outdoor work. It necessitates exploration on the ground, mobility mediated through material and narrative resources (maps, photographs, as well as colleagues’ and stakeholders’ accounts), and face-to-face interaction with colleagues, clients, consultees, and the public in the field, in meetings, public consultations and exhibitions. Mobility and materiality are thus ‘hooks’ for the analysis because they are pervasive features.

But a focus on the mobility and materiality of landscape and visual assessment is also a powerful analytic device. Studies of perception and epistemic practice have often been used to trace the formation of contemporary forms of social order (Rorty 1980, Shapin and Schaffer 1985, Latour 1993). For ‘modern’, ‘western’ societies these studies reveal that the appearance of clear boundaries between humans,

'things' and nature is tirelessly scaffolded by ignored or unnoticed practices. It seems that 'we have never been modern' (Latour 1993), but are, rather, continuously co-opted into 'purification', ways of seeing and categorising hybrid entities as either cultural, natural, or material, active or passive, cause or effect. In parallel, Garfinkel's programme of ethnomethodological studies of work (1986) has inspired an epistemic sociology (Lynch 1993) and a growing number of studies show not only that, but also how, perceiving and sense-making are things we do, not things that happen (for example, Garfinkel et al. 1981, Lynch 1985, Lynch 1990, Lynch and Jordan 1995). Yet, both ethnomethodological and sociological analysis centres on 'rational', scientific practices such as observation, measurement, or experimentation. Imagination and subjective judgement – which are an integral part of making sense of place – receive little attention. Moreover, while many analysts highlight the way in which perceptual and epistemic practices are propagated through mobility within 'networks', they neglect the mobility and materiality involved in actually perceiving, making sense of, and engaging with the world.

This lack of attention extends to the analysis of our experience of environments. Urry (2000), for example, describes the (visual) objectification of landscape as a result of particular modes of travel. He argues that the modern tourist gaze has turned the environments we inhabit into 'landscapes' and has made the appreciation of 'scenery' and series of discrete views an integral part of outdoor experience. Through photography and maps the 'visualisation of perception' is made complete (Cooper 1997, p. 33, see also Crary 1992, Jay 1993). These 'technologies ... reinforce a particular 'western' view of the world' (Urry 2000, p.88-89), and start a

cycle where new technologies and new forms of mobility may co-evolve, but visualism (Fabian 1992) or the dictatorship of the eye (Urry 2000, p. 81) prevails.

Whilst insightful, these analyses accept the facticity of visualism perhaps a little too quickly. We ‘tend to think of motion as if it were made of stillness, ... [and] reconstruct it with the help of moments of stillness’ (Bergson, quoted in Conan 2003, p. 1), but this way of thinking hides important aspects of vision and motion from view. People ‘see as they move, not just in the intervals between movements’ and our ‘knowledge of the environment undergoes continuous formation in the very course of [our] moving about in it’ (Ingold 2000, p. 226, 230). Directing attention to the mobility and materiality of perception and epistemic practice, can be revealing in Heidegger’s sense of exposing the work that produces and sustains modern visualism (1977). But it can also serve as a ‘cloud chamber’, allowing a ‘negative’ of the image brought out through analytical ‘dissection’ to emerge. Seeing non-modern practices and the scaffolding and purification practices that hide them can be a catalyst for the discovery and materialization of alternatives. This aspect of analysis motivates the landscape architects’ and my own engagement in basic research and development of future technologies.<sup>2</sup> Working together with computer scientists, we deliberately cross modern boundaries between technology production and use (Suchman 1994) and seek to design for future artful integrations (Suchman 1999) of technology, material culture and practice through a collaborative, ethnographically ‘grounded’ design process (Büscher et al. 2004). In the next section, an overview of professional guidance introduces core concepts of landscape and visual assessment.

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<sup>2</sup> Our research is part of the EU’s Long Term Basic Research Programme on Future and Emerging Technologies (FET), see [www.daimi.au.dk/workspace](http://www.daimi.au.dk/workspace) and [www.palcom.dk](http://www.palcom.dk).

These are developed in the main part of the paper, where readers are invited to follow landscape architects as they practically accomplish landscape and visual assessments. Two examples from my ethnographic studies highlight the mobility and materiality of perceptual and epistemic professional practices. They also bring alternatives into view and I present some observations from experiments with prototype technologies developed together with the landscape architects.

### ***Instructed seeing***

Landscape has more than aesthetic or recreational value. In the UK, its association with national identities (Matless 1998, Smout 1990) reflects historical, cultural and political differences that still shape different approaches to landscape design and policy. However, Scotland and England, especially, increasingly build on shared assumptions. Professional guidance for landscape assessment is a case in point. In a recent joint paper, the English Countryside Agency (CA) and Scottish Natural Heritage (SNH), spell out the challenge they face:

change in English rural landscapes is inevitable in the next 20 years ... [Yet] ... 91% of English people want to keep the countryside exactly as it is today. Clearly the two are not compatible ... [a] report on change in Scotland ... shows that similar issues also arise there. (CA/SNH 2004, p. 1)

In urban environments, the tensions between conservation and change are different, but often give rise to equally strong feelings. ‘Landscape and visual assessment’ and ‘landscape character assessment’ are put forward as instruments that can assist with the ‘hard decisions’ that are required. Two publications – *Making Sense of Place: Landscape Character Assessment Guidance for England and Scotland* (CA/SNH

2002) and *Guidelines for Landscape and Visual Impact Assessment* (LI/IEMA 2002) – officially instruct professionals how to carry out assessments.

To function well, these guidelines argue, assessment must be objective. At the same time, it is acknowledged that a quality as elusive as a sense of place requires subjective judgements. They are encouraged, provided that they are ‘made in a systematic and transparent way’ (CA/SNH 2002, p. 10). The guidelines then set out instructions on how to achieve objectivity and transparency. A core principle is the separation of characterisation, judgement and decision making. Landscape architects are usually only directly responsible for the relatively ‘value-free’ characterisation of landscapes and subsequent more ‘value-laden’ professional judgements about their ‘sensitivity’ and ‘capacity’ (CA/SNH 2002, p. 15, 52). They are indirectly involved in decisions about change as designers and independent advisors for developers, planning authorities, the public and statutory consultees. Statutory consultees represent key interests in landscape or cityscape change, such as SNH, English Nature, or the Council for British Archaeology. The guidelines equip landscape architects with criteria, definitions, and instructions. Core concepts are:

*Landscape element:* physical, organic or cultural features, for example, landform, vegetation, built elements, animals and people

*Landscape resource:* a combination of key elements that define a landscape

*Landscape type:* generic categories of typical configurations of elements (Fig.2)

*Landscape character area:* specific configurations of landscape elements (Fig.2)

Most of the UK’s landscapes have been surveyed and catalogued (for example in the ‘Character of England Map’ CA/SNH 2002, p. 59).

Characterisation and assessment combine desk with field studies. In the field the task is ‘to move through the study area’, and select, in each character area or zone of

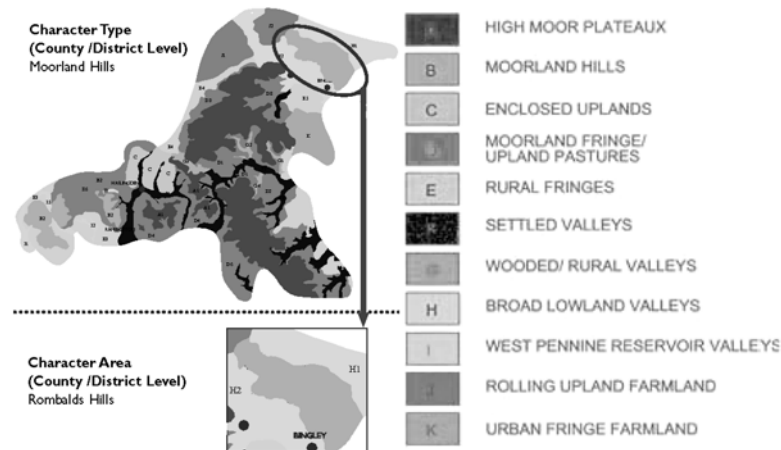


Figure 2 Landscape Character Types and Character Areas. Adapted from CA/SNH 2002, p. 12

visual influence, points that ‘give a representative view of the landscape. Each point should be publicly accessible’ (CA/SNH 2002, p. 30). For every viewpoint the landscape architects complete a standard field survey form that lists visual and aesthetic criteria to assist characterisation (Fig. 3). Note that even though the experience of transient views is recognised as important, the field survey form mentions movement mainly in terms of movement of the eyes of an otherwise stationary observer or movement within the scene, not the observers’ bodies’ movements.

LANDSCAPE AND VISUAL ASSESSMENT FIELD SURVEY FORM – BASELINE

Job Title: Windfarm  
 05-3248-01  
 Viewpoint Location/No: 05034, 01685  
 Date/Time: 19.5.04 Weather/visibility: clear / overcast  
 Assessors: LT, JVV Camera/Focal Length of Lens: green  
 Notes:

**LANDFORM** Mountain (hill) plateaux / Green Upland / heath / cliff / Crag / ridge / broad strain / scree / narrow valley / broad valley / Confluent / rising / hollow / rising / deep gorge / plain / scarp / banks / hollow / basin / tarmac / rock outcrop / scree / gully

**WATER** Loch / river / burn / wetland / marsh / waterfall / stream / canal / pond / reservoir / mudflat / estuary

**ROUGH GRAZING** Heather / moss / grass / moorland / scrub

**FARMLAND** Improved pasture / arable / hedge / dyke / fence / large fields / small fields / fruit growing

**WOODLAND** Coniferous plantation / mixed woodland / broad leaved woodland / park / avenue / smaller belt / isolated trees / haughmow trees / silt / stone / young woodlands

**RECREATION** Carpark / campsite / hotel / golf course / footpath / marina / other / pitches

**DEVELOPMENT/POINT** Village / farmstead / industrial building / new building / castle / estate building / bridge / factory / monument / railway / other man-made structure / telegraph pole / pylons / power lines / pylons / derelict building / water tower / light tower

**LINEAR FEATURES** Transmission line / pylons / road / footpath / access track / railway / motorway / cycle path / footway / railings / telegraph lines

**COASTAL FEATURES** Sea / cliff / beach / rocks / rocks / promontory / dune / mudflat

**VIEWS** Distant / framed / easement / panoramic / hindered / restricted / obscured  
 hill, ... in clear weather  
 ... in mists

Description of the existing visual amenity at the viewpoint

- the extent of view obtainable in terms of panorama and distance
- the visual character of the view *constant*
- the occurrence of existing visual foci in the view
- the occurrence of any existing visual forces in the view ("Visual force" occurs when a static image gives an illusion of energy or movement. Visual forces in landscape draw the eye down convex slopes and up convex slopes.) *leads right to left*
- the nature of the skyline profile *undulating*
- the range of different landscape components comprising the view
- a sense of remoteness *limited quite a few for rural view*
- the presence or absence of man-made objects in the view *presence*
- the potential for change in the future *wind farms*
- landscape condition *good*

AESTHETIC / SUBJECTIVE FACTORS

<b>BALANCE:</b>	Harmonious	Balanced	Complex	Discordant
<b>SCALE:</b>	Inimate/small	Medium	Large	Expansive
<b>DIVERSITY:</b>	Uniform	Simple	Diverse	Complex
<b>ENCLOSURE:</b>	Confined	Enclosed	Open	Exposed
<b>TEXTURE:</b>	Smooth	Textured	Rough	Coarse
<b>COLOUR:</b>	Monochrome	Muted	Colourful	Garish
<b>FORM:</b>	Flat/horizontal	Rolling	Sloping	Steep
<b>LINEARITY:</b>	Straight	Angular	Curved	Sinuous
<b>PATTERN:</b>	Random	Irregular	Regular	Formal
		Organised		Geometric
<b>PRODUCTIVITY:</b>	Barren/Sparse	Productive	Lush	
<b>SECURITY:</b>	Comfortable	Safe	Unsettling	Threatening
<b>STIMULUS:</b>	Boring	Bland	Interesting	Invigorating
<b>PLEASURE:</b>	Offensive	Unpleasant	Pleasant	Beautiful
<b>MOVEMENT:</b>	Dead	Peaceful	Lively	Active/ busy

Figure 3 A field survey form based on CA/SNH 2002 (EDAW Edinburgh, www.edaw.com)

Baseline maps and specific baseline characterisations carried out on the ground capture the existing character of the landscape and provide a starting point for judgements about the effects of change. Here, the following criteria apply:

*Receptors*: landscape elements or resources that a proposed development will affect directly or indirectly, including humans (residents, visitors, passers-through) and hybrid elements (e.g. landform, vegetation, fields).

*Sensitivity*: the susceptibility of receptors to change

*Capacity*: the degree of change the landscape resource can absorb

*Magnitude*: the scale of change

*Significance*: judgement based on consideration of the above criteria

In reports, views and assessments are explained through maps, text, photographs and photomontages (LI/IEMA2002, p. 75). As mentioned above, the concepts described here are subject to debate (CA/SNH 2004, CCN 2004, Turner 2003). They are also negotiated in practice, and a close examination of work on the ground now leads into an analysis of key issues through lived practice.

### ***Professional vision***

A developer has persuaded Edinburgh city council to consider proposals for the re-generation of parts of its waterfront. The developer envisages high quality housing, interwoven with commercial and cultural venues for this prestigious, diverse and difficult site. Currently, there are areas protected for their coastal flora and fauna, light industry, housing, and – right next to a pair of ‘landmark’ gas towers – a privately owned manor house with extensive grounds (Fig. 4). The site is visible from many popular observation points from the water and the city, and in spring 2001 the developer commissions a landscape and visual assessment for a scoping plan (the developer’s own first layout sketch) to be discussed with planners and designers.

There are three conflicting issues:

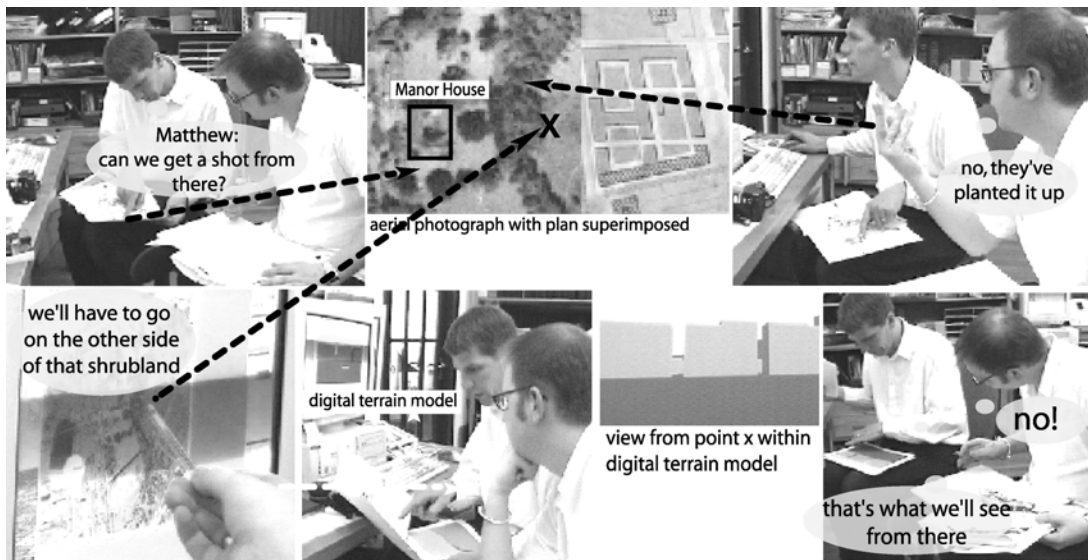




**Figure 4** A bird's eye view of the scoping plan ([www.waterfront-ed.com](http://www.waterfront-ed.com)), and the manor house

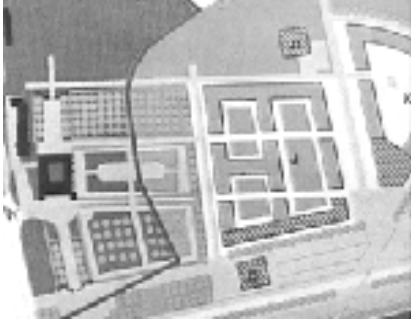
- the developer wants to maximize the number of units by maximizing height
- from afar the development might alter views of the city – for the worse
- from within, a coherent approach to urban design would enhance the area

Eight viewpoints have been identified, and on a day with clear views, landscape architects Ross and Carol visit the five closest. Matthew, a visualization specialist, joins them to take photographs for photomontages. Before leaving the office, Ross and Matthew embark on a series of journeys through visual means and models. Figure 5 captures a typical episode through frames from my ethnographic video:



**Figure 5** Finding out where to go

Ross and Matthew's efforts demonstrate clearly that visual effects are relational, material phenomena. They arise in relation to embodied perceivers, in a multi-dimensional, lived-in and living environment, where professional judgement requires careful emplacement. Matthew initially seeks a view from the drive in front of the house, because the scoping plan envisages a formal garden with low parterres



**Figure 6** The formal garden

that open up views of the house from the development (Fig. 6). For their assessment, the landscape architects need to reverse that gaze, but the visualisations that Ross and Matthew use to travel ahead and plan this reversal only provide uncertain ground. The two are trying to construct a particular view – a ‘view from somewhere’ within the living, dynamic environment – from a set of views ‘from nowhere’ (Ingold 2000, see also Haraway 1991) that claim independence of particular points of view. By assuming and naturalising the notion of objective space, Ross and Matthew’s maps, plans and models seem to support a preparatory delve into the landscape. However, each is deficient in its own way. The scoping plan presents a schematic vision of the future that turns a property boundary into a visually easily crossed line, ignoring its actual material manifestation as ‘shrubland’. The aerial photograph provides a bird’s eye view of recent conditions on the ground, but gives no indication of height, and the digital terrain model into which a model of the development has been inserted shows only ‘bare ground’ – the topography without any existing vegetation or built features. In the face of such deficiencies, Ross’ doubt faced with the ‘virtually emplaced’ view within the model is

no surprise. However, by following the landscape architects on site we will see that it is not just the lack of realism that limits the transporting potential of visualisations.

Travel with visual instruments dovetails into embodied mobility, as Ross, Matthew and Carol drive from viewpoint to viewpoint to carry out their assessment and



Figure 7 In the car

find photographable views on the ground.

On their way to the manor house, they stop and, again, align the aerial photograph and the scoping plan to work out

where to go (Fig. 7). On their arrival, one of the owners, Mrs. M, takes Carol through the calm and sunny grounds and then out into the sea breeze on the other side of the shrubland that currently separates the house from the new development. As she thus demonstrates, the ‘shrubland’ is, in fact, a ‘shelterbelt’ that protects the house and grounds from the prevailing wind. Carol joins Ross and Matthew who are taking photographs (from point x on the exposed side of the shrubland), recounting her experience and the explanation she just heard. She rekindles their earlier discussion: ‘should we take another photograph from the house?’ Ross has changed his mind. Even though it still seems unlikely that the development would be visible from the drive, they should take a photograph. They could use it to illustrate the existing view and juxtapose it with a photomontage of the view of the development from where they are standing. Figure 8 invites the reader to join Ross and Carol as they map and align what they see around them with the aerial photograph and the scoping plan, position themselves and imagine the new development in(to) place. They realise, in fact, experience its effects:



**Figure 8** On site.

Matthew’s photomontage, completed several days later, reveals that matters are worse than imagined (Fig. 9). The buildings are, after all, visible from the drive. The landscape architects conclude that this creates ‘significant major adverse effects’ and propose ‘to reduce the heights of the proposed buildings, increase the distance of the buildings from the house, [and to] maintain and enhance existing shelterbelts’ (from the report submitted to the developer and the planning authorities).



**Figure 9** Photomontage from the drive

In this rich example of lived practice we see that imagination is not just a capacity of individual minds but also a collaborative, mobile, embodied and material activity (see also Büscher 2004). Description is at its heart. The imagined object is a ‘potter’s object’ (Garfinkel et al. 1981) – seen and shaped or ‘formulated’ – through the very words and actions that describe it. Gestures, alignments of, and embodied references and orientations to, visual resources as well as features in the world need to be carefully emplaced for accurate, objective, and transparent assessments. We began to witness the work of ‘emplacing’ with Ross and Matthew’s explorations of photographic affordances around the manor house in the office. The notion of affordances captures the way in which people orient towards the opportunities and constraints an environment offers for engagement (Gibson 1986). Travel with visual instruments only allows for very impoverished perception of affordances, as we have seen. When the landscape architects now explore the site, their activities ‘emplace’ visual and landscape assessment instructions through the collaborative and embodied performance of professional vision (Goodwin 1994) and engagement with affordances found on the ground. An increasingly convincing alignment of scoping plan, aerial photograph, the surroundings and embodied positions emerges, and with delicately coordinated words, gestures, glances, and embodied orientations, Ross and Carol place the new development in front of them. Carol actually enacts her ex-

perience of the scale of the new development by raising her eyes and arm, looking up at what Ross now describes as ‘a massive front’. This is a powerful collaborative formulation, and one that was critically unavailable to Ross earlier, when he and Matthew had virtually travelled to the same spot in the digital terrain model and had seen ‘the same’ view. In fact, the model actually showed the new buildings, whereas Ross and Carol now see nothing but have to imagine things into place. As they begin to draw conclusions and Carol realises that ‘actually the buildings are really close’, Ross turns to the field survey form on his clipboard, visibly and audibly shuffling



papers. Carol responds to this non-verbal cue, picking up on one particular prompt on the field survey form: ‘enclosure’. She says: ‘there’s no view that way’ and Ross responds ‘but it’s the openness that makes the quality of this place’, an assessment that is no doubt also informed by the landscape architects’ experience on both sides of the shrub-belt and the owner’s explanations.

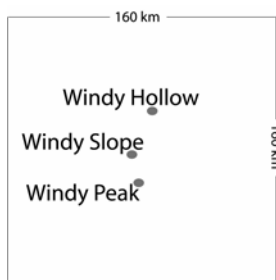
In these few seconds, Ross and Carol take important steps through non-verbal, material and embodied actions and orientations in relation to their information rich environment. Many of these often crucial material methods of practically achieving professional vision are usually taken for granted and remain unnoticed. They are unavailable in explanations and instructions. Moving on to the field survey form on Ross’ clipboard is a particularly delicately organised and economical example. In practice, Ross, Carol and Matthew reverse the sequence, and breach the separation of characterisation and judgement. Through travel with visual resources, models and

later real immersion in the spaces around the manor house they first find a photographable view, and in doing so, are drawn into assessing the effects of change. Then, they carry out a baseline characterisation.

However, this reversal does not compromise objectivity. On the contrary, it helps produce it! The professional guidance on landscape and visual assessment builds on, and reflexively constitutes, the quintessentially modern assumption of a relationship of ‘correspondence’ between descriptions and reality (Latour 1999). Ross, Carol and Matthew’s practices scaffold these assumptions and the notion of judgement as a process of weighing observer-independent evidence, whilst rooting their actual judgement in a quite different relationship between description and reality. Actual judgement is a matter of collaborative, intersubjective and ‘interobjective’ (Latour 1996) formulating, or shaping of reality through talk, gesture and embodied conduct, and engagement with the affordances, conditions and dynamics found on the ground, described by Rammert (1999) as ‘experimental interactivity’. In this case, important elements of this reality are imagined. How can such situated and complex practices be made ‘transparent’? Goodwin shows us how professional vision is ‘instructed action’, and both he (1994, 2000) and Garfinkel (2002) bring out important dualities that also rule here. On the one hand, Ross and Carol orient to instructions through their lived work of following (and reflexively constituting) them. This actual achievement of landscape and visual assessment cannot be inscribed into instructions or the reports meant to explain the landscape architects’ judgements. However, on the other hand, lived instructed action is instructive as well as instructed, making transparency possible in the first place. As we follow the landscape architects, we

begin to see what they see, and begin to understand their judgements. Achieving objectivity and transparency is a matter of proofing professional vision for repeat performances with different actors. In this endeavour the landscape architects rely upon three strategies. First, Ross, Carol and Matthew travel together deliberately, encouraged by the official guidelines (CA/SNH2002, p. 30), and because this approach fosters the intersubjective collaborative negotiation and alignment of descriptions. The aim is to get as close as possible to what ‘everybody’ would see, say, and experience here. Second, professional vision is – inevitably, as Goodwin shows – a matter of demonstration as well as documentation, and presentations, public consultations and exhibitions are an integral part of landscape and visual assessment. Third, professional vision is vision on the ground and vision in motion. An example from a first visual assessment field survey for a windfarm proposal will now provide a deeper sense of the mobility of professional vision.

### ***Vision in motion***



Force 10<sup>3</sup>, a utility company has commissioned a landscape and visual assessment for three windfarms with a study area of 160km<sup>2</sup> (Fig. 10). Assessment on Windy Hollow started earlier, and some visualisation specialists and land-

**Figure 10** The windfarms.   
scape architects have already visited the area and taken photographs. In the office, technicians then used a computer programme to create wirelines – visualisations that show the ‘bare ground’ topography in the photograph in wire mesh, with the proposed turbines inserted (Fig. 11). The *Resoft*<sup>TM</sup> ‘Wind-

<sup>3</sup> Not a real name. Place and project names have also been changed, and OS base maps have been removed for anonymity.



Farm' programme provides map and wireline views. Two windows can be arranged side by side and a click on a point on the map will show the corresponding topography in wireline with the view of the windfarm from this point. If the wireline is turned off, a 'view from the road', that is, changes to the visibility of turbines as one moves can be examined.

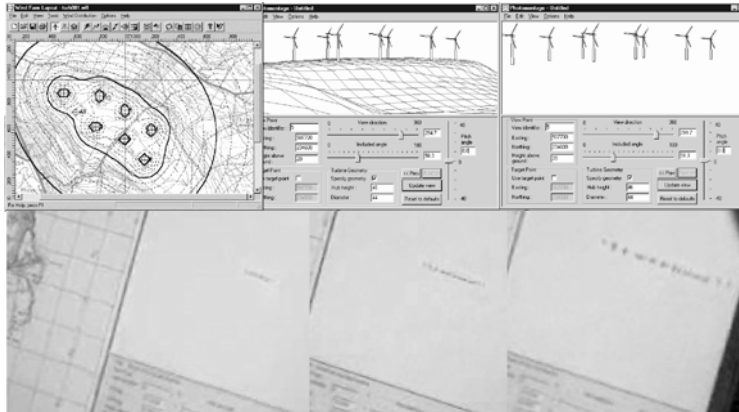


Figure 11 'WindFarm' screenshots.

Source: [members.aol.com/resoft/homepage.htm](http://members.aol.com/resoft/homepage.htm) and ethnographic video.

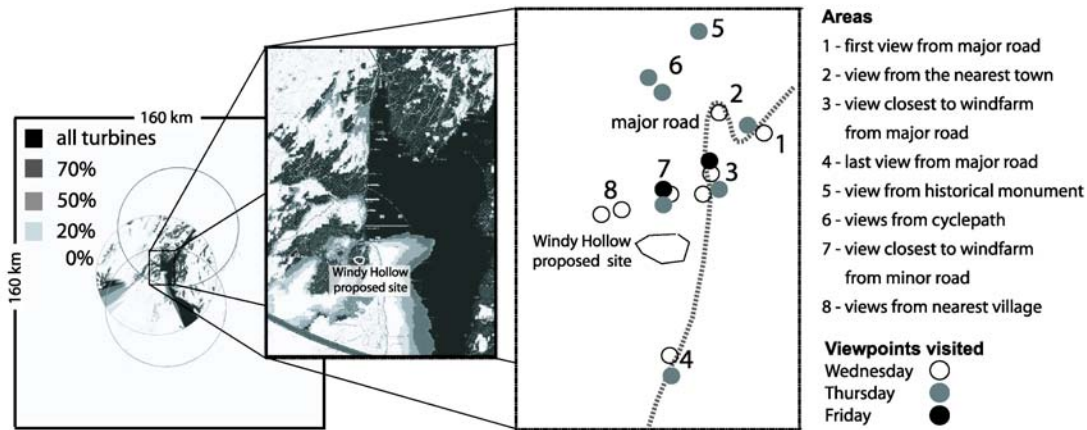
Now that work has been commissioned for all three windfarms, a team of landscape architects book a cottage in the area. Lynda (responsible for Windy Slope), Jo (Windy Hollow), and Anna (Windy Peak) each spend several days here to carry out initial landscape and visual assessments. This provides opportunity for exchanging local knowledge, and the landscape architects frequently discuss their days' work, explore their catch of tourist brochures, experiences, and impressions, and brief each other on how to use WindFarm (Fig. 12). They have brought the WindFarm programme on site for the first time, to help in identifying viewpoints on the ground, rather than just produce visualisations in the office after the visit. They identify designated or otherwise important areas, such as 'National Scenic Areas', major roads, important walking or cycling routes, towns, and areas of historical or archaeo-



**Figure 12** Lynda & Anna discussing their work in the cottage

logical significance and proceed to find the best viewpoints. The ‘best’ viewpoints for landscape and visual assessment are the *worst* viewpoints. That is, the aim is to find the most representative, most important, most sensitive point with the most of the development visible (e.g. a public viewing platform on the roof of a historic cathedral on a beautiful day). The ‘most pronounced effects will occur where the change (magnitude) and sensitivity are greatest and therefore there is the most likelihood of a significant effect’ (Lynda Thomson, email conversation).

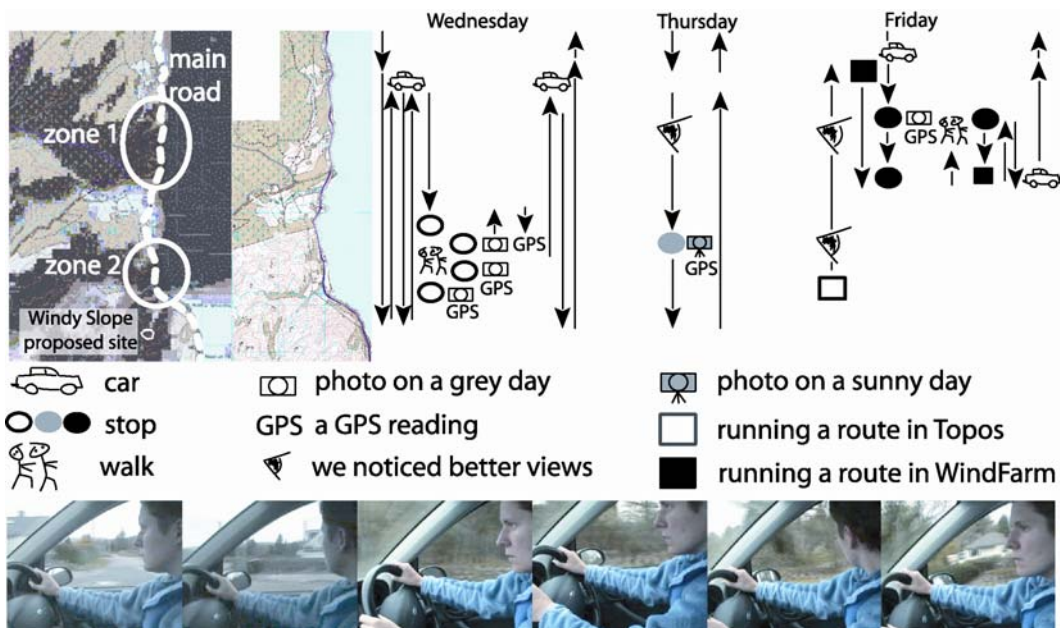
An account of the work for Windy Slope will illustrate important issues. Lynda focuses on visual assessment and explores her study area with me as a participant observer. She aims to: (1) find a ‘best’ view for each area, (2) take photographs, (3) take GPS readings, (4) assess the baseline character of the current view by filling in a field survey form. At this point in time, Lynda is interested in the visibility of Windy Slope alone, and only considers an area defined by a statutory 30km radius. There are eight areas of interest close to the proposed site (1-8 in Fig. 13). The selection of viewpoints is informed by a zone of visual impact (ZVI) map. ZVI maps show visibility calculated on bare ground topography. Coloured tints are overlaid onto an Ordnance Survey (OS) map. Black indicates that all of Windy Slope’s turbines can be seen, lighter colours denote 70%, 50%, 20%, and 0% visibility. This



**Figure 13** 30 km radius ZVI for Windy Slope and a map of viewpoints assessed over three days. The OS base map has been removed for anonymity reasons.

means that lowlands and glens that do not afford views will be untinted, while hills and ridges that do, as well as the sea which affords blanket distance views are coloured according to the degree of visibility.

The effort of finding the ‘best’ viewpoints on a stretch of road close to the site of Windy Slope is typical. The ZVI shows two zones with good views (Fig. 14):



**Figure 14** Summary view of movements and Lynda looking for views as we drive.

Below I present edited diary excerpts from my ethnographic field notes.

Wednesday: A grey day. We drive up and down four times, with Lynda craning her neck to spot where turbines might be visible. This is difficult. There are cars behind us, and it is hard to stop. The road dips up and down. Forests and houses obscure the view, and there are many hills. Which one is ‘ours’? Eventually we stop and walk. Still, it is difficult to judge where turbines would be visible. We follow a farm track uphill. Now Lynda sees where the turbines would be. She takes a photograph and a GPS reading. But we need a public viewpoint that is actually on the road. Walking back, we spot what might be a view through a tree (Fig. 15). Lynda



**Figure 15** Photographing a view

takes a photograph and a GPS reading. We walk on. Ten meters further, she spots a better view through the same tree. She takes another photograph. We walk on. She has forgotten to take a GPS reading.

We walk back, return to the car, drive back and forth once more, then move on to the next viewpoint, away from the main road.

Thursday: Sunshine. A day for photomontage photos. But where to go first to make the best of the light? It is early and distant views are still hazy. We decide to start by returning to the tree. As she drives towards it from the north, Lynda notices that there might be even better views in zone 1. She asks me to run this short route in Topos, a prototype programme I have brought later (Büscher et al. 2001, in preparation). The rest of the day is spent taking photographs at other viewpoints.

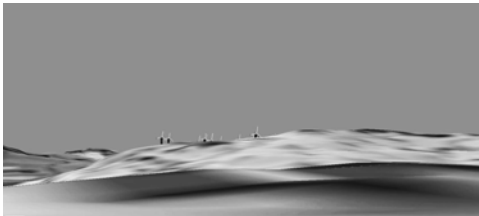
Friday: Rain. Running the route in Topos from south to north, continuously looking at the windfarm, Lynda and I notice a good view (Fig. 16). Lynda reads off the OS coordinates from Topos and finds the spot on the paper map. She cross-checks

with her field survey form from the tree viewpoint (Fig. 3). We are here, the coordinates match. This means the viewpoint found on Wednesday is indeed a ‘best’ viewpoint and the photograph we took is fine.



**Figure 16** The view through the tree in Topos with OS map draped over the terrain. On the right, the semi-transparent photograph is overlaid over the relevant section of the same screenshot.

We continue along the route in Topos to get into zone 1. Looking at the paper ZVI map, approaching the windfarm from the north, Lynda suspects that it would be



**Figure 17** Approaching from the north in Topos with ZVI draped over the terrain.

possible to ‘see the turbines as you come over the hill’ at the beginning of this area of visibility. And, indeed, you can. This is the ‘best’ view in this zone – at least in the bare ground model (Fig. 17). Whether trees or houses

would screen these views is unknown. Lynda says ‘maybe we’ll go back there, I’ll just check in WindFarm before we go’. She ‘drives’ the route in WindFarm, looking at the changing visibility of the turbines, and marks stretches of road where WindFarm shows most visibility on her OS paper map. She decides that another viewpoint is required, sets WindFarm to render a wireline and ties her shoelaces. We look at the wireline to memorise the landform.

As we drive I struggle to match what I see with the OS map to let Lynda know



**Figure 18** Stop and walk.

where to stop. We slow down, stop at a house (Fig. 18, black arrow) and get out. It is not quite clear where the windfarm would be. Lynda takes photographs. She has programmed the centre of the windfarm into her GPS and gets the display to point at it, again, but remains uncertain. She wants to drive on and then walk back, just to be sure that there really are no better views. We park the car (grey arrow) and walk back. As we walk, Lynda keeps looking over her shoulder. She is still not altogether sure where the turbines would be, because the actual hill where the turbines will be is hidden behind a foreground hill, although the turbines themselves would be visible. It is raining and we try to work out which hill is 'ours'. Lynda gets the GPS to point at the site. It does not point where she thinks it should: 'Sometimes it doesn't work until you move'. We walk, and it confirms the location we had worked out. No better views seem possible. We walk back to the car, and Lynda gets her laptop with WindFarm to check once more. Copying the coordinates from our first stop from the GPS, she says: 'We'll have to get back there' on a clear day, for a photograph fit for a photomontage. She exports the wireline with the OS coordinates as the filename and states: 'Good. It would have been a huge mistake if we'd missed that one.' We move on to other viewpoints.

How difficult it is to know our hill! To know whether or not the turbines would be visible in the real world, where trees and houses screen views. All the while, Lynda is also keeping an eye on how sensitive viewpoints and receptors are, and on whether this really is the 'best' viewpoint. 'This is quite a slow process', she jokes. There are many more areas, all with different characteristics, and many more view-

points to find. Part of Lynda's problem is that like her colleagues Ross, Matthew and Carol she has to juggle the deficiencies of views 'from nowhere'.

Having shared Lynda's struggles it seems clear to me – and I hope to have facilitated a similar experience for the reader – that most people are not particularly good at what the most influential theories of vision suggest we do routinely. They assume that we see and memorise environments by storing images and mental maps in our minds. But if mental images were at the heart of how we perceive the world, why should we have such difficulty in matching them with actual images? Along with correspondence theories, picture theories of perception have been shown to be misleading (e.g. Wittgenstein 1953, Rorty 1980), and studies of active meaning-making through perceptual and epistemic practice in science and technology studies and ethnomethodology confirm this. A focus on mobility can greatly enrich the picture. Drawing on the work of Jonas, Gibson and Merleau-Ponty, Tim Ingold argues that mobility is an important dimension for a more adequate understanding of perceptual and epistemic practices, because our knowledge of the environment is 'forged not in the ascent from a myopic, local perspective to a panoptic, global one, but in the passage from place to place' (Ingold 2000, p. 227).

Both examples in this paper show that the reverse is true, too: We do not understand where we are in the descent from maps, plans and other 'views from nowhere', but through the unfolding of 'views from somewhere'. Lynda does not begin to see the views she is characterising after she has positioned herself, but reveals them, and inscribes them into her journey as views, as she moves around the environment, using maps, plans, photographs, and models to find them. This revealing nature of

seeing in motion she shares with anyone who lives or travels through the area. Vision is not an inherently objectifying sense. Landscape architects, like all of us are co-opted into reducing it to this, when we look at environments as if vision and motion were made up of stillnesses, all the while engaging in a process of seeing that is quite different. On the ground, we see relations, glimpses, transitions, occlusions and topographies as they unfold around us. Over time, we come to know a place from everywhere (Ingold 2000, see also Feld 1996), not in the sense of being able to conjure up a mental image of each and every place, but in the sense of knowing where we are in relation to ‘everything’. Through landscape and visual assessment, Lynda becomes ‘very familiar with things’, a fact that is difficult to convey in the reports she writes to explain her professional judgement:

like, if you go to a public exhibition and somebody says ‘oh I live (inaudible)’ you say ‘allright (inaudible) yeah I know’ and they’re really surprised. At [the exhibition in Slopetown] there was this couple, they said where they lived and I said ‘quite a modern bungalow with *huge* windows?’ and I was thinking ‘oh no they’re going to really – ’cause their house was elevated and they’re going to have a big view of the windfarm and they said ‘oh we can’t wait’ (Lynda Thomson, 15 April 2004)

Landscape and visual assessment is designed to be and, with some considerable success, is actually made accurate, objective and transparent. But this is not just a matter of erasing the assessor and turning ‘views from somewhere’ into ‘views from nowhere’ where different observers will find ‘equivalent stimuli and sensations’ (Crary 1992, 24), even though maps, texts, photographs and photomontages in re-



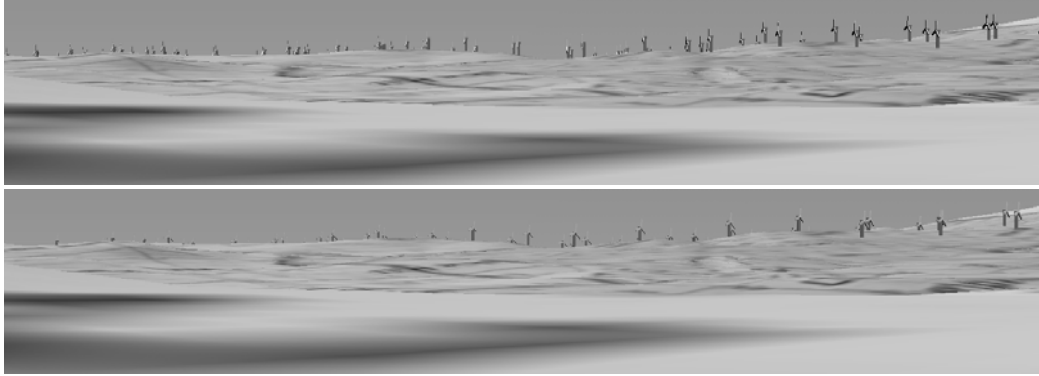
ports might give that impression. At the same time, assessments are collaboratively produced through intensely emplaced, materially augmented and organised vision in motion. Mobility and deliberate attempts to foster intersubjectivity and experimental interactivity within the environment play an important part. In the process of carrying out their assessment, the landscape architects create dense alignments and links between maps, plans, photographs, models and their experience on the ground. These links are not easily available in reports and exhibitions, which makes informed decisions difficult, especially where it matters most: in the lay geographic communities affected by change (Toke 2004).

### ***Designing for experience in motion***

New technologies open up many avenues for supporting the landscape architects' work of making sense of place in all its dimensions, by augmenting 'visualist' as well as scaffolding, purification, and non-modern practices. Three brief examples from experimental use of some of the technologies we have designed in landscape and visual assessment will illustrate how grounding socio-technical innovation in engagement with practice can help professionals, members of the public, designers and analysts understand and materialize new ways of working.

#### *Designing for views from everywhere*

In the Topos collaborative virtual environment the landscape architects can drape any kind of map over digital terrain models (e.g. OS maps, ZVIs, aerial or satellite photography). Rather than strive for realism, we emphasize support for accuracy, the alignment of different views and virtual emplacement. New developments and exist-



**Figure 19** Augmenting understanding through virtual mobility.

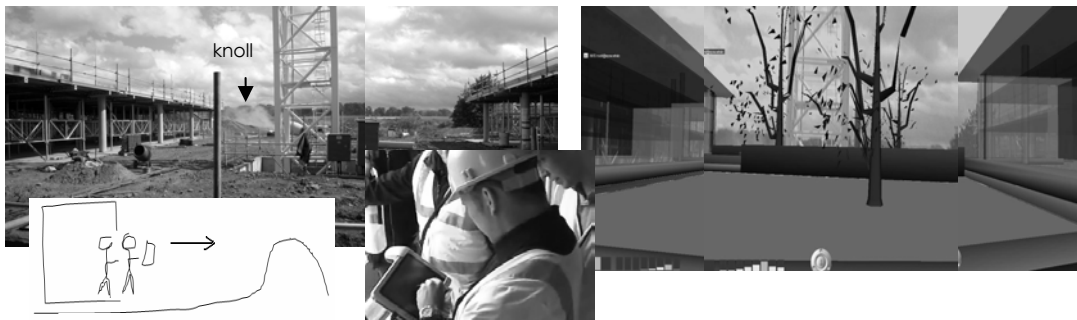
ing features can be modelled and inserted. Exact OS coordinates are tracked and displayed as one moves freely. Modelled elements can be manipulated, making it possible to design new layouts in response to the experience of moving through the model. The revised second layout shown in Figure 19, for example, makes the wind-farm more legible and pleasing for eyes in motion. Roughly accurate composite views like the one shown in Fig 16 can be created on the fly (unlike photomontages which take several hours to construct). This prototype is a product of interdisciplinary collaboration (Büscher et al 2001, in preparation). It is currently used for landscape and visual assessment projects at the landscape architects' studio to enhance a sense of place and layout design. Moreover, currently, the landscape architects draw on their notes and their own experience in the field to describe transient views, mainly through text in their reports. Being able to move through the model and align different views enhances the familiarity with the environment and opens up new opportunities for engaging statutory consultees, clients, and the public in assessing the effect of new developments. Topos has also been used in meetings and public exhibitions, where people have asked to see the view 'from my window', from 'where I walk my dog', 'ride my horse', 'visit my friend' (Fig 20).



**Figure 20** Sharing ‘knowledge of everywhere’ with locals in a public exhibition at the village hall.

*Augmenting imagination*

In Fig. 21, two of Lynda’s colleagues, Martin and Andy, are working with a more experimental ‘site-pack’ prototype. We are on the building site of the Royal Bank of Scotland’s new international headquarter in Edinburgh. The two are adjusting their landscape design to the contingencies of actually implementing it on the ground. The challenge of imagining non-existent structures into existing spaces is as real for them as it is for their colleagues. They are trying to create attractive experiences and views within the building, the grounds and the larger environment. We are inside the building, looking out towards a knoll, an attractive feature in the view from that



**Figure 21** Imagining the view from the ground floor.

window. On the right we see what the landscape architects see on their site-pack screen. A correctly located 3D model of their current landscape design is dynamically superimposed on a live video feed. It is possible to walk around and explore

this composite view in motion. Andy and Martin discover a problem: the hedge on the left is too high, obstructing the view of the knoll. This can be addressed by



changing the design (Fig. 22). Annotating and discussing digitally augmented views also opens up possibilities for remote collaboration with colleagues or professional partners back in the office whilst on site (Büscher et al 2004, Büscher 2004).

### *Design for professional vision – PalCom*



**Figure 23** Prototyping experiments for supporting alignment of different views on the ground  
We have also begun to explore possibilities of exploiting e.g. location tracking, dynamic models, video, augmented paper, and communication services to support the complex material alignments and embodied practices of professional vision.

Through ethnographic and hands-on grounding in practice, our approach does not reinforce visualism, but responds to all the practices involved in making and shaping sense of place. Designing for vision in motion, enhancing ‘views from everywhere’ through virtual mobility, augmenting imagination through live and dynamic composite views, discussing views in-situ with remote colleagues, and augmenting the alignment of many different views are examples of newly emerging forms of mobile and material professional vision.

## **Conclusion**

On the face of it, landscape and visual assessment and the struggles for objectivity and transparency it involves are a prime example of ‘visualism’ (Fabian 1992) and one that further reifies the objectification of environment through a particular ‘modern’ way of instructed looking. However, in line with critics such as Ingold (2000), the examples in this paper show that the visualisation of perception is tirelessly produced as part of professional – and lay – practice. Landscape and visual assessment is a modern project, where vision is material ‘practice’ not passive ‘reception’, and hard work. It requires motion, even though its products can be static views. A focus on the materiality and mobility of vision reveals the practices involved and ‘demystifies’ vision. It does so not by revealing an ‘underlying reality’ through a modern sociological project, but through engagement with practice. To paraphrase Ingold, knowledge of the social and its orderlinesses (Garfinkel 2002) is not forged in the ascent from a myopic, local perspective to a panoptic, global theory, [or vice versa] but in the moment-to-moment analytic engagement in lived practice. By engaging carefully with the actual, moment-to-moment production of professional vision, it is possible to begin to understand the specifics of the practices involved. In landscape and visual assessment the emplacement of vision, embodied imagination, and knowing the environment ‘from everywhere’ through materially augmented, virtual, and embodied vision in motion are crucial. In my collaboration with the landscape architects and computer scientists, analysis is a starting point for a project of intervention (Hacking 1983, see also Büscher 2004), which, in turn, is a starting point for further analysis. Seeing non-modern practices and the scaffolding and purification practices that hide them can be a catalyst for the discovery and materialization of alternatives.

We seek to augment intersubjective negotiation, imagination, and experimental interactivity to enhance professional practice and make the work more enjoyable, but also to allow statutory consultees, clients, and the public to engage more confidently with professional vision and to actively participate in a more informed decision-making process.

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