

CHAPTER 2

Interdisciplinary Perspectives on Environmental Narratives

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This book is about unlocking environmental narratives by using computational methods to extract and analyse information from text. But what do we mean by *environmental narratives*, and just as importantly, what are different ways of thinking about them? The following six vignettes explore these ideas from widely varying academic perspectives. They vividly illustrate not only the breadth of forms of environmental narrative, but just as importantly the widely varying ways in which these narratives can be explored.

Our first vignette, by human geographer Katrín Anna Lund, tells the story of a particular landscape, that of Strandir in northwest Iceland from a phenomenological perspective. In doing so, Katrín tells the story of Strandir and its landscapes from her viewpoint as an Icelandic woman and human geographer, travelling through the region, with a knowledge of its history and the environment. She shows how landscape is on the one hand in the eye of the beholder, but on the other a shared product of history and environment. Katrín's vignette is important because it shows through a specific example the value of narrative in understanding landscape. It is an individual piece, typical of work in human geography, which through its use of the first person makes its positionality clear. Worth considering, is how this piece of writing might influence what we would see if we visited, or worked on, materials related to this landscape in the future.

Strandir Stories: A phenomenological approach to narrative

I use the region of Strandir in northwest Iceland to reflect on what Rose and Wylie (2006) mean when they talk about 'landscape as tension'. My approach is phenomenological, exploring landscape from the standpoint of a lived and perceiving body (Merleau-Ponty, 2002) experiencing its surroundings as it moves through them. Furthermore, as Bender (2002, p. S106) put it, landscapes 'refuse to be disciplined' – they are never passive and still, but they play upon us, move and affect us (Lund and Benediktsson, 2010).

When travelling through the Strandir region one cannot but feel the strong connections to the environment even if travelling by car, which is the usual mode of transport in the area. Following the narrow gravel road allows the traveller to physically feel the rugged and barren surroundings as it winds along the coastline and over mountain sides connecting fjords and places (Figure 2.1a). The population is low – the village Hólmavík has about 450 inhabitants, whilst the remaining 300 or so inhabitants are scattered over the region mostly living on farms or in small hamlets. There is a strong sense of remoteness, rooted in a timeless entanglement of present and past that provide a



(a) The road.



(b) Weather.



(c) Driftwood.



(d) Eider duck, nesting.



(e) Puffin.



(f) Museum.



(g) Petrified trolls.

Figure 2.1: Environmental features of the Strandir region. 2.1b by Claus Sterneck, all other pictures by Katrín Lund.

sense for a still calmness, nevertheless in a landscape that is ever moving and playful as it stirs up narratives which take the traveller into different spatio/temporal dimensions (Lund and Jóhannesson, 2014). As the road goes along the narrow coast-line, stones and the occasional rock on the road remind the traveller that the mountains towering above are ever moving in their battle with the forces of weather, wind, rain and snow and simultaneously that life in the region has always been a struggle with unpredictable nature (Figure 2.1b). Along the coast line lie unruly piles of driftwood, carried by ocean currents from distant Siberia. Driftwood (Figure 2.1c) used to be the region's most valuable treasure in a land otherwise barren of wood and stirs up thoughts about how ever moving natural forces simultaneously give and take. The same can be said about the eider duck (Figure 2.1d) swimming by the shore amongst other migrating seabirds (Figure 2.1e). Its down has always been a highly valued subsistence for farmers in the area (Lund and Jóhannesson, 2014). This brings forth visions into the past, and not the least to the 17th century. Men in authority, usually in the name of the Lutheran establishment, desired these valuables. In turn, this competition for resources was one reason behind witchcraft accusations and hunts, a piece of history that the area is still notorious for, reflected in the founding in 2000 of the Museum of Icelandic Witchcraft and Sorcery in Hórnafjörður (Figure 2.1f). The opening of the museum stirred up otherwise almost forgotten narratives, so that the landscape can be sensed as magical (Lund, 2015; Lund and Jóhannesson, 2016). These magical or unearthly experiences are also reflected in stories of mystical beings such as trolls, elves and sea monsters. Rock formations at the shoreline are often said to be the remains of trolls that did not take care and turned to stone when they were caught by the rays of the sun (Figure 2.1g).

Thus the landscape experienced is moulded by the comings and goings of people, earthly materials, animals and supernatural beings travelling to, from and within the region, stirring up the narratives that enmesh the traveller. In so doing, we bring own narratives and stir up others. This landscape is more-than-human, it is a landscape that is vital, constantly moving, and tensioned; a landscape where nature and culture refuse to be separated and the traveller is part of the story.

The hamlet of Djúpanvík reveals how places are gatherings of narratives stemming from more-than-human mobilities (Figure 2.2). The ruins of an old herring factory dominate the surroundings (Figure 2.3a). The factory was built in 1934, paid for by venture



Figure 2.2: Djúpavík. Picture by Claus Sterneck.

capital brought in by entrepreneurs from the Capital, with the aim of becoming wealthy through the abundance of herring that had arrived in the surrounding seas. Djúpavík became a thriving place where people from all over Iceland gathered for work every summer during the herring season. However the adventure only lasted about 20 years before the herring moved on (Lund and Jóhannesson, 2014).

In 1975, a young couple from the Capital arrived in the now deserted place. They decided to settle and renovated an old building, still called The Female Quarter, as it housed the women working in the factory, showing how placenames can fix the past in the landscape. They also established a small hotel, still in operation today, which attracts visiting travellers. After a slow start, business has boomed, especially during the tourist seasons, with visitors now coming all year round. More-than-human narratives emerge through the ruins of the factory and, more over, how they are continuously in the making. They are maintained by the owners to avoid danger to curious visitors, and they have installed an exhibition about the history of the factory inside it (Figure 2.3b).

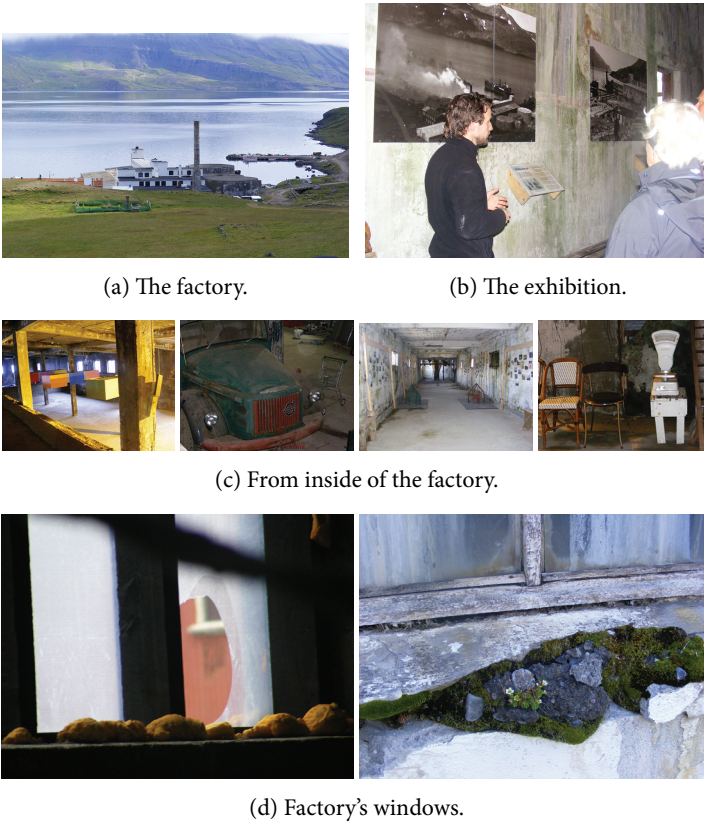


Figure 2.3: Environmental features of Djúpavík. Pictures by Katrín Lund.

An art gallery, a storage room for diverse things that belonged to the place's past including old vehicles restored by the owner in his spare time (Figure 2.3c) add to its story. Non-human material processes also contribute to the narrative, as the forces of water and wind are continuously working their way through the concrete, appearing in the form of mould and moss shaping living spaces for insects, birds and rodents (Figure 2.3d). The factory ruins demonstrate how human and non-human forces become entangled and weaves together diverse spatio/temporal narratives.

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Our first vignette used phenomenology to write and present a narrative of a specific landscape. It vividly illustrated how words and pictures can be combined to help us imagine a landscape, and categorise it. Katrín emphasised the remoteness of this landscape, but nonetheless concentrated on the interplay between people and natural processes in our understandings. This is no empty landscape, no wilderness, but a place where wind and weather erode stones and cliffs that are suffused with stories from the past. But where do notions of wilderness, and nature itself come from, and why are they more complicated than we sometimes think?

Our second vignette, from environmental historian Karen Jones, delves deeper into the origins of the words and ideas we use to characterise landscapes. In doing so Karen takes us on a journey through nature, into the wilderness and finally for a walk in the park. She shows how our ways of understanding landscape cannot be separated from their history, and the history of the words we use to talk and write about landscapes.

Entangled words and materials: Environmental history and an etymology of meaning

Nature, Raymond Williams tells us, is perhaps the most complex word in language (Williams, 1983, p. 219). There are, as it turns out, many contenders in a fecund modern environmental vernacular. From *Anthropocene* to *Wilderness*, the words we use to categorise physical spaces, processes and interactions are layered with imaginative significance and, some might say, hamstrung by a messy and (perhaps inevitably) problematic provenance. This makes the matter of narrative particularly significant. Indeed, by digging a bit deeper into the world of etymology (a term I use here to describe a forensic enquiry into words and matter, imagined and material traces) we discover a landscape that is contested, controversial and eminently more intriguing for it.

Environmental history provides an important guide in navigating these entanglements of materiality and cultural meaning. As Stephen Dovers notes, ‘an environmental issue without a past is altogether as mysterious as a person without a past’. (Dovers, 1994, p. 4).

At its core, the discipline announces that human experience cannot be read in isolation from the physical world. Exponents argue that history has been too anthropocentric, of a need to put nature back into history (or the other way round). As practice, it has tended towards three kinds of enquiries: 1) How nature has changed over time; 2) human environmental impacts; and 3)

cultural representations, values and ethics (Worster, 1988, p. 293). The field gained momentum as part of the revisionist drive to make history more inclusive, with early exponents focusing on (deleterious) anthropogenic impacts on the biosphere and tracking the roots of environmental consciousness. This genealogy is important, as despite the fact that the discipline has matured into a sophisticated canon of eco-cultural enquiry, an activist element still remains important. Where does environmental history end and environmental-*ist* history begin? Such responsibilities are particularly prescient in our contemporary world of plastic overload and planetary crisis. As Ruth Morgan notes, climate change has firm implications for the 'ways in which we undertake writing history' (Morgan, 2013, p. 350).

Going back to the nomenclature of nature, one of the critical terms that has been forensically examined has been 'wilderness'. In *Uncommon Ground* (1995), environmental historian William Cronon invites a rethinking of the idea to reveal a landscape of social construction, an ethnically vantaged fantasy, and a consumer product. Read in this vein, 'the wild' becomes a place of escape, a paradise untouched by industrialism, and something for sale in the mall. Advising humans to find a home *in* nature, a common ground in which to live responsibly, Cronon's argument ably highlights academic writing as activism. As he asserts, 'the special task of environmental history is to assert that stories about the past are better, all other things being equal, if they increase our attention to nature and the place of people within it'. (Cronon, 1992; Cronon, 1995).

For the rest of this vignette, I want to showcase the potential of environmental history to unpack environmental narratives via a short walk around 'the park'. Here, too, we discover a rich palette of shifting meanings. In its original definition, 'Park' described an enclosed piece of ground for the beasts of the chase. Boasting a distinguished lineage, so-named places encompassed the hunting preserves of ancient Assyria, medieval deer reserves of European royalty, and Versailles, Louis XVI's geometric hydraulic masterpiece that mapped the power of the Sun King over nature and nation. While appearing to show the emergence of a more 'natural' park variant, the pastoral lines of the English landscape park, popular in the 18th century, was just as much a designed entity. It also confirmed the importance of the park as a prime site of narrative. Stourhead in Wiltshire, the brainchild of banker Henry Hoare II, clearly depicted syncretic lines of landscape and storytelling: its

circular walk around a lake, complete with shaded walk and river grotto, telling the legend of Aeneas' journey into the underworld.

The 19th-century cityscape communicated a narrative of civic progress through industrialism. Depicted in a canvas by William Wyld, 'Manchester from Kersal Moor, 1857' inferred that city and nature could sit comfortably, with romantic hills and industrious smoke stacks presented as symphonic. Over time, however, the social, economic and environmental consequences of industrialism raised concerns about community health. It was in this context that the urban park idea emerged: a rustic ideal-type transplanted to the city to make it liveable. Attributed to William Pitt and first cited in parliamentary debates about urban development on the edges of London's Hyde Park, the park as 'lungs for the city' positioned it as a kind of environmental and social prescription, a green enclave that circulated the air and allowed citizens to walk and breathe healthily. Also worth noting was the importance of social engineering in these 'parks for the people.' Ordered by racial, gender and class-based codes, these were spaces of socialisation and orderly recreation. As leading American landscape architect Frederick Law Olmsted noted: 'if thousands of people are to seek their recreation...unrestrainedly, each according to his own special tastes....[the park]...is likely to lose whatever of natural charm you first saw in it' (Olmsted, 1881, p. 26).

Most famous in the dedication of Yellowstone (1872), the *national* park communicated a story of scenic grandeur and stood as an important marker of the celebration of 'the wild.' Suggesting firm connections between the veneration of nature, cultural nationalism, and the emergence of a conservationist ethic, Yellowstone was preserved in 'natural conditions ... for the benefit and enjoyment of the people.' The notion of what a national park was *for*, however, changed radically over time. Here the collisions of etymology were clearly seen as managers and visitors grappled with such issues as indigenous access to park lands; the role of fire regimes in a protected landscape; and the place of 'good' and 'bad' animals, a tension most famously seen in the eradication, and later reintroduction, of wolves.

Parks represent complex spaces. What defines them? What is *their* narrative? How do push-button geyser simulations in Disneyworld complicate the story of Yellowstone's 'pristine' Rocky Mountain nature? What of somewhere like Pripyat amusement park, Ukraine, abandoned to its former use after the explosion at nearby Chernobyl, and now an unintended nature reserve roamed

by wild boar, brown bear and wolves (largely due to the absence of people)? As a body – or corpus – of material, ‘the park’ presents an avalanche of contested stories both *in* and *of* the land. Trying to make sense of this complex landscape of matter and meaning is usefully aided by environmental history methods that track the lines of physical change and can ‘read’ a range of different landscape texts to show processes of imaginative re-mapping at work. This kind of etymo-cological excavation, I’d argue, is essential for understanding both time and place in environmental narratives.

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Karen’s vignette shows how delving into environmental histories through text can reveal influences, propagated over time that shape our understanding of landscape. Often, these concepts, conveyed by words like ‘naturalness’ or ‘wildness’, are used without the writer necessarily being aware of their complex histories. But words can also be used deliberately, to change the way we think about a place.

Our third vignette, from literary scholar Sarah Luria explores a very different setting, the metamorphosis of the industrial city of Worcester in Massachusetts to a new, gentrified and green town. Building on the vignettes from Katrín Lund and Karen Jones, Sarah takes a narrative approach, analysing the stories told by two observers and protagonists of change – a developer, working to revitalise the area and a poet, documenting vanishing ways of life. Sarah’s approach complements those of Katrín and Karen, using written and oral sources to explore how change in Worcester is described, and how this narrative is contested by contrasting stories seeking to privilege the past and the future according to the needs of the protagonists.

The power of Blarney: Reinventing an old industrial city as a green mixed class community

A city is not only its buildings, streets and the people who live there, but the stories they tell. The old industrial city of Worcester, Massachusetts, demonstrates this well. Once known as the ‘Dirty Woo’, today Worcester has been dubbed the ‘New “It” Town’, an ‘authentic’ historic city that is being ‘revitalised’ for modern greener lives, its boarded up factories repurposed for trendy lofts, cafes and bars (Schacter, Aaron, 2018). Young professionals are moving in, attracted by a walking city lifestyle and improved commuter service from handsome Union Station into Boston. A familiar story of gentrification seems to be unfolding, especially in the

city's Canal District, where current low income residents may soon be priced out. Two powerful local storytellers, one an upscale developer, the other a working-class poet, capture this conflict and model ways to rewrite it.

Beginning around 1980, developer Alan Fletcher and a group of men met monthly at the 3G Sports Bar on Millbury Street in the Canal District to swap visions of how Worcester could be brought back to life. They became obsessed with the Blackstone Canal that once flowed right by the neighbourhood's busy factories to the Atlantic Ocean 45 miles away, but now lies buried underground in a sewer pipe. Fletcher and his friends dreamed of recreating the canal with boats lined by shops and parks. They did more than just talk. They formed the Canal District Alliance and broadcast views of what the neighborhood had been and could be: they sponsored two huge murals on local buildings with romantic depictions of the old canal and immigrant neighbourhood, a walking tour of historic sites, and a feasibility study for the canal park with an alluring video of how it would look when done.

Fletcher's success suggests key strategies for how to revive a struggling neighborhood: have a clear single focus, a history-based story told through multiple genres, and most importantly, think big. Recreating the canal turned out to be pure fantasy, but, as Fletcher tells it, that did not matter. The alluring vision was enough to attract investment:

I could probably name 10 to 20 people who came to those [bar] meetings, got infected by our bullshit, entranced by the pictures we were weaving in the air, and thought, 'Yea, I've always wanted to open my own bar,' and they bought a place in the Canal District... That's when the rebirth of the Canal District, which started as a bar scene, happened.... I attribute that, very much, to all the yakking we did.

As one local reporter put it, the current success of District is 'fueled' not by a canal of water but a 'river of booze' (Quinn, Tom, 2016).

Fletcher 'take[s] comfort' in the 'fact' that the escalating development isn't 'displacing anybody here in the main part of the district, because nobody lived here anyway.' This, however, is another fantasy story, commonly used to justify gentrification. In fact, a working-class immigrant community, now largely Latino, still lives in the Canal District, and may soon be displaced (Smith, 1996; Hibbett, Maia, 2019).

Former Worcester resident Mary Fell offers a counter-narrative to Fletcher as well as meaningful connections to the local

history Fletcher claims to want to preserve. Fell, a working-class Irish-American poet, documented the neighborhood when it touched bottom during its decline. Her 1984 poem ‘Prophecy’¹ tells a story of neighborhood identity and ownership that bears repeating today. It begins:

The old neighborhood remains. Some call it Green Island, remembering the canal that cut through it, now underground. Built by Irish laborers, the canal gave Water Street its name. Jews still run their shops there, though they’ve moved their families to the other side of town. No one goes down in the basements anymore. Rats the size of dogs, they say. Kids in the Catholic school learn Polish prayers. And on Millbury and Harding Streets, everyone talks big stories in the same old bars (Fell, 1984).

Fell’s first stanza counters Fletcher’s romantic murals of the canal district’s past. The short first sentence is richly ambiguous: its flat tone suggests a depressing neighborhood of people left behind but also sounds resilient – the neighborhood has survived. Children live here and still learn Polish, and parents maintain their ethnic pride. The ending even links Fletcher’s pals’ ‘bullshitting’ to the ‘big stories’ – Fell’s Irish would call it blarney—that everyone still talks in ‘the same old bars’.

In fact, Fell’s poem shows how today’s neighbourhood has long been supported by alcohol. Worcester historian Roy Rosenzweig notes that alcohol offered relief from the pressures of factory work. Workers slowly won shorter work days and better wages, and enjoyed their leisure in local pubs. These included the ‘shebeen’, or woman-owned kitchen distilleries, a tradition brought from Ireland. Fell includes a vivid picture of one in her poem. The speaker’s grandmother Aggie made:

whiskey in her own still. Though she and her husband were American born, Patsy spoke all his life with a slight brogue. Winter nights, the cop on the beat would come in from the cold to warm himself with Aggie’s brew. Putting his little glass under the still, where whiskey squeezed into it drop by drop, he’d run out to the callbox to tell the station all was well. When he got back the glass would be full.

The shebeens gave women, and widows especially, a way to support themselves. But as the city regulated alcohol, they were shut

¹ Stanzas from the poem “The Prophecy” by Mary Fell have been used with permission of the author. All rights reserved for all elements of the poem.

down in favour of male-owned public saloons (Rosenzweig, 1983, p. 43-44).

Fell's vignette should be quoted in today's Canal District bars to honor the Irish establishments that preceded them. As Fell's "Prophecy" demonstrates, maintaining a neighborhood's connections to its longer history is essential to preserving its soul. Aggie and Patsy maintain their Irish roots with the shebeen, Patsy's Irish brogue, and their stories. Her father however has lost that connection:

Though my father is a storyteller, he has little else to say. When he was ten his mother died. He can't remember his grandparents or their names. A few photographs survive, some unidentified.

The poem ends again ambiguously: the depressing note of the father's silence is contradicted by the poem itself, which preserves the neighbourhood's Irish past by inheriting and telling its story.

Fell's poem is a prophecy: the old neighbourhood must still remain. Stories require a past, present and glimpse of the future or else there is no story, no meaning. That past is embodied not only by its buildings and historic plaques, but by residents who remember or have some connection to its past.

Communities change, but gentrification is increasingly acknowledged as inhumane. Fell and Fletcher demonstrate the power of an alluring story well told (the kitchen pub, the buried canal) to change a neighborhood in memory and in fact. Right now we crave a better story than gentrification, which eviscerates the authentic neighborhoods it seeks. The Canal District may have the roots to realise such a fantastic story, one that includes new businesses, a mix of social classes and ethnicities, and a respect for the past and community nurtured through its many pubs.

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Our first three vignettes explore environmental narratives as sources for academic inquiry. But how is narrative, or writing about the environment linked to policy? Or, turning the question around, how are the multitude of voices and stories which shape our understanding of environments (and more specifically landscape) currently represented in landscape monitoring? The next two vignettes present two complementary, but very different views.

The first, from Flurina Wartmann introduces the notion of indicator-based methods, often used to monitor landscape and policy success. The second, from Graham Fairclough, presents two related approaches developed in the UK, Historical Landscape Characterisation and Landscape Character Assessment (LCA). These methods are specific examples of the more general notion of indicators presented by Flurina, and both of them aim to tell the story of specific landscapes, through very different data sources, methods and ways of communicating their results. These vignettes introduce new concepts, such as landscape monitoring, ecosystem services and landscape management and do so from a different position – that of directly making inputs into landscape policy and management. In doing so, they emphasise the breadth of knowledge and ideas that are important in work on environmental narratives, and once again emphasise the need for interdisciplinary perspectives to bring together the necessary knowledge to work effectively on these topics.

Landscape and policy

Modern policy emphasises the importance of everyday landscapes where we live and work and, as these become increasingly urban, the role of urban green spaces and rural landscapes as places for recreation and relaxation. Landscape is thus key to developing sustainability policies since it integrates environmental, social and economic aspects of modern society. Many landscapes have been transformed through generations of human settlement and use into cultural landscapes through human actions, ranging from rural forest landscapes used for timber and protection, through extensively and intensively farmed landscapes to bustling cityscapes. Irrespective of their nature, people form strong bonds and connect with landscapes, imbuing places within them with cultural meaning. Landscapes and the cultural values associated with them thus form an essential part of people's relation to place and identity.

Many different processes impact on landscapes, and they are thus constantly in flux. Changes may be rapid, driven by processes such as a mudslides or development of new neighbourhoods. Equally, slower, and less immediately perceptible changes occur with the slow creep of tree lines upwards as a consequence of climate change, or the gradual process of agricultural intensification and associated loss of small-scale landscape structures including hedgerows. From a policy perspective, it is important to document and monitor such changes, since they influence

physical landscape composition and the ways people use, interact with and relate to landscapes.

In Europe, the European Landscape Convention (ELC) promotes the protection and management of landscapes (Council of Europe, 2000). Signatory countries are obliged to analyse landscape characteristics and the processes transforming them, as well as assessing the values people assign to landscapes (ELC articles 6C 1a and 1b). But how can we assess the complexity of landscape and monitor change? One commonly applied strategy is to develop methods to quantify and monitor landscape change and the effects of policies at local, regional and national levels. These methods can take a range of forms (Kienast et al., 2019) incorporating, for example, indicator-based approaches measuring and combining landscape properties as indicators of associated landscape patterns and processes or using LCA to descriptively document the state and change of landscapes (see the next vignette for more detail on this).

One advantage of landscape change indicators is that simple numerical measures allow quantification of change, which is welcomed by policy-makers seeking baselines to assess the effect of policies. However, indicator-based monitoring approaches often focus on more physical aspects of landscape, such as changes in land cover and land use (Peano and Cassatella, 2011). Examples include the amount of agricultural land converted to new settlement areas, change in forested area or length of revitalised rivers. However, simply measuring changes in land cover and land use tells us little about how societies and individuals perceive and experience this change, or about their relationship with landscape and its value to a society. Within indicator-based frameworks, perceptions and value-related questions can be integrated through tools such as surveys, questionnaires and public participation Geographic Information Systems (GIS). Participants, typically residents, can give views about landscape value, for example, with respect to aesthetic properties, the activities they undertake, and feelings and meanings they attach to landscapes. Such assessments are based on notions of landscape as places imbued with meaning, and link to an extensive literature and debate on concepts such as place and sense of place (Tuan, 1977; Hirsch and O'Hanlon, 1995; Cresswell, 2013; Massey, 2013).

Monitoring including people's connection to landscapes, as well as meanings associated to landscapes along measures of physical landscape change thus attempts to bridge the gap between landscape constituted by bio-physical landscape elements such as

mountains, rivers and meadows and the cultural and emotional notions people associate with these elements and the landscapes they are part of.

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Indicator-based approaches such as those described by Flurina often use rich spatial data, for example, in the form of land cover and land use maps. Historical Landscape Characterisation, introduced in the next vignette by Graham Fairclough, also uses spatially explicit data (e.g., in the form of aerial photographs), but places much more emphasis on expert interpretation. LCA is of particular interest, because narrative (in the form of, for example, the literature written about a region) flows directly into its production. As Graham makes clear, narratives, past, present and future lie at the core of LCA as a method.

Landscape character

In Britain and a growing number of other countries (Fairclough, Sarlöv Herlin, and Swanwick, 2018), the assessment or description of landscape character is a standard practice for the understanding and management of landscape in a managerial, conservation and environmentalist context. 'Landscape', it should be emphasised, is in this field treated as a broadly defined concept, currently best summed-up by the definition of the European Landscape Convention that landscape is 'an area perceived by people whose character is the result of the action and interaction of natural and/or human factors' (Council of Europe, 2000). In this definition, perception is much more than 'visual' but embraces all ways of sensing, feeling, remembering and understanding, and landscape means many different things to different people. It is a highly fluid, ambiguous and potentially contested notion whose study crosses many disciplinary boundaries and reaches out towards a transdisciplinary response to significant social, environmental and cultural challenges (Bloemers et al., 2010).

In the British situation two interrelated approaches exist. Both utilise the concept of 'character' and both share common aims targeted on landscape management and heritage conservation. They adopt different approaches to analysis and process, but both are generalising procedures which aim to grasp the overall character of landscape by capturing human and cultural perceptions across relatively large areas. They are of necessity selective in

which aspects of landscape are privileged and thus susceptible to absorbing unacknowledged biases and assumptions.

Historic Landscape Characterisation (HLC) was developed from the mid-1990s as a complement to preexisting methods of LCA (Fairclough and Herring, 2016). The LCA approach sought to be holistic in its understanding of landscape, but for a variety of reasons (not least non-availability of spatially comprehensive accessible data) tended to understate the historic dimensions in the present landscape. LCA was also limited in its spatial orientation, offering primarily area-based written descriptions, which makes its use in spatially oriented managerial contexts more difficult. In contrast, therefore, HLC developed spatially based (within GIS) and historically focused methods to sit alongside LCA's mainly text-based, largely visual appreciation of landscape.

As hinted above, 'landscape' is a fuzzy concept in the first place, but this is exacerbated when studying the past because information is almost by definition incomplete and uncertain, not always spatially located and often not place-specific (but instead derived by extrapolation from knowledge gained in comparable locations elsewhere). HLC interestingly sought to deal with this by relying on a distinctively unfuzzy framework, that of GIS, to contain the HLC. GIS enabled the construction of a continuous seamless coverage of spatial polygons, which lends a spurious objectivity to the process, particularly when those polygons are used to contain a mass of information that is better characterised as 'interpretation' rather than 'data'. This created tension with and over-simplified the 'data' – strictly speaking in fact an interpretation of data – that HLC used. HLC's primary source (following an archaeologist's approach to material culture) is the physical manifestation of the landscape itself, interpreted through its morphology, constituents and evolution within an imposed classification of historically informed types. The analysis uses distanced images such as aerial and satellite photographs and images and maps modern and historic which enable a detailed, fine grain. The end result is an interrogatable database² of spatially related information that awaits future interpretation and use in the practical contexts for which it was designed, notably landscape and heritage management and spatial planning. HLC projects produce typological or chronological analyses and only but less commonly

² Downloadable examples can be found at <https://archaeologydataservice.ac.uk/archives/view/HLC/>

extensive written descriptions of places or localities, and the scope for language analysis is probably limited.

LCA projects on the other hand offer primarily text-based descriptive overviews. These sit within a simpler territorial framework of very large areas, generally perceived from an on-the-ground, horizontal perspective. Narratives of various types are at the centre of the LCA method (even though in some applications, such as the English national character areas, they have since been complemented by databases, for instance, ecological data, selected to match the LCA areas). LCA is not rooted in a detailed spatiality, sometimes not even within a GIS, although the territory involved – the study area – is initially subdivided in an intuitive manner into a set of continuous uniquely defined ‘landscape character areas’. While scales can vary, these areas tend to be relatively large, usually well above the level of what is commonly meant by ‘place’. As such, they can in a relatively straightforward way become containers for descriptions and information which therefore allows the production of coherent, aspirationally definitive narratives that are then susceptible to automated comparison and analysis. The LCA texts are in essence environmental narratives. LCA also comes close (to a certain extent in contrast to HLC with its focus on human agency in landscape and its understanding of the long-term inevitability, past and future, of physical change) to providing environment-alist narratives based on preservationist aspirations, anxieties against change and often a romanticised nostalgia. Furthermore, because in disciplinary terms LCA has historical antecedents in the field of topographical writing and of what used to be called ‘natural history’, it often takes raw material from past literary (and for that matter visually artistic) descriptions of an area, especially in drawing from past narratives a sense of value of cultural association. It thus both channels past narratives and constructs present-future narratives. LCA has also in modified forms been taken up in other countries, and therefore analysis can be made of the impact of national cultural attitudes (e.g., different cultural approaches to modernity, change and preservation, or the attitudes to and definitions of landscape and heritage values) and of linguistic contexts (e.g., the deep differences between the meanings and social implications of ‘landscape’ and ‘paysage’).

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In these first five vignettes, we have seen different ways in which narrative can be used to explore and understand the environment. Katrín and Sarah both introduced specific examples of the use of narrative to explore change in very different – (here: Icelandic rural and urban American) settings. Karen delved into the history of particular words and concepts, and explores how a concept bridging urban and rural landscapes – the park – emerged as an idea. Flurina and Graham introduced ways in which landscape, another very specific concept, is monitored and discussed how narrative can and could feed into this process. But not only words have origins, narrative itself also has a variety of forms, and our last vignette, from digital humanities scholar Gabriel Viehhauser, introduces ways in which space can be used as a way of understanding, and starting to analyse, narrative.

(Digital) narratology and space

As is true for probably every other cultural studies discipline, the spatial turn of the 1990s also affected literary studies, the field that would probably claim to have the most genuine expertise in describing narratives. The turn led to a plethora of studies on spatial constellations in literature, describing them in relation to different historical or cultural contexts or formal aspects like genres. However, it often applied a very metaphorical concept of space that sometimes risks losing touch with the concrete spatial settings of a literary work.

This interest in the category of space could draw on work that, long before the spatial turn, pointed out the importance of a semantic dimension of spatial constellations. In doing so, this work made us aware that space could be more than just an invariant physical setting, but should be seen in relation to the (human) beings that move in spaces. Some of the classical studies include Bakhtin's works on the so-called *chronotopoi*, spatial-temporal patterns that can be related to different historic genres (Bakhtin, 1981), or the model of spatial semantics developed by Lotman connecting plot structures, characters and space and their significance in telling a story (Lotman, 1977).

Interestingly, the very basic question, as to how space is constructed in narratives at all, received far less attention than those considerations on changing spatial constellations and their meaning. This is surprising, since inquiries investigating, for example, where a story is set and how this fact is expressed in words, underlie all other endeavors to exploit the semantic dimensions of space.

I would argue that with the advent of digital methods in literary studies and the possibility to perform distant reading of huge amounts of texts with the help of computers these questions deserve renewed attention, since many research problems related to space might be amenable to such an approach. For example, the examination of *chronotopoi* in different historical genre-constellations performed by Bakhtin and his successors is necessarily often based on a selective text base, since genres can encompass more works than a single researcher can read. Given a clear concept on how space is constructed and how this construction can be identified with the help of computers, those studies could easily be enriched with information drawn from larger corpora. To give another example, studies from the field of literary geography (e.g., as proposed by Moretti (1999) or Piatti (2008; 2009) that strive to trace the settings of literary texts in geographical maps and to show which places are described more or less often in the literature of a given time or place could also support their evidence by exploiting more texts, if this could be analysed and mapped automatically.

Unfortunately however, the question as to how space is evoked in a text does not have an easy answer. In narratology, the sub-discipline that deals with the construction of narratives, there are far fewer studies on space than on other basic categories like time, character or plot. This is probably partly due to the fact that the creation of narrative space relies even more on implicit meanings than those other categories: space is a pre-condition of every narrative, but exactly because of this it does not have to be explicitly mentioned or described every time it is evoked. Characters move through and act in space, thus constituting space implicitly. Practically every object that appears in a narrative can be situated in space and therefore has potential spatial dimensions. And furthermore, non-spatial elements like professions or activities could point towards spatial constellations without even mentioning them: if a character, for example, wakes up in the morning, it is likely that she is lying somewhere, implying a bed or some other object that is supplemented by the reader's mind according to their imagination of the story world. If the first thing that she sees in the morning is a nurse, it is likely that she is located in a hospital or a similar facility.³

³ Which notion exactly springs up in the mind of the reader can be described with the 'principle of minimal departure', formulated by Ryan: the reader will tend to imagine a story world that resembles her own in as many aspects as possible, as long as the text does not indicate otherwise (Ryan, 1980).



Figure 2.4: Spatial frames in the fairy tale ‘Hansel and Gretel’.

In other words, there is a huge gap between the words on the textual surface that can create a spatial setting and the mental model of that space that we develop while reading a text. This notion has astutely been described by Ruth Ronen in her concept of ‘spatial frames’ (Ronen, 1986). ‘Spatial frames’ are mental concepts that aggregate the verbal hints in a text which point towards a spatial setting (like in the example above the nurse pointed towards the spatial frame ‘hospital’).

In Figure 2.4, I tried to trace down a diagram of spatial frames for a rather basic and famous fairy tale ‘Hansel and Gretel’. The orange circle on the left signifies Hansel and Gretel parents’ house, from which they are sent twice to the forest (green circle) by their evil step-mother. Whereas the children manage to find their way back the first time, they get lost the second time, ending up in the witch’s house (purple circle, a frame inserted in the larger frame of the forest), where they are caught, but finally overcome the witch.

The crucial question for a digitally informed narratology would be: Is there a way back from the space markers on the textual surface (that can be detected by the computer) to the underlying spatial frames (which could be understood as some sort of latent concepts underlying the text)? A digital aggregation of spatial markers into spatial frames would not only build the base for a spatial distant reading of texts, but also support concepts such as

Lotman's spatial semantics mentioned above. Lotman claims that a story only has an eventful plot (a 'sujet'), if a character of the story transgresses the border between two semantically different spheres. While in 'Hansel and Gretel' the parents and the witch rest in their own spheres for the whole narrative, the two children move from one space to another, and because the two places are linked to different semantics ('normal world' vs. 'fairy world', 'home' vs. 'outland'), in doing so, they trigger an event.

Once the problem of the aggregation of space is solved, the distinct semantic load of the frames could be traced back by digital means.

Figure 2.5 shows the most distinctive words of the passages set in the witch house (which here I identified manually) compared to the other parts of the story.⁴ The words are not explicitly related to a fairy-tale world, but reveal a different semantic connotation of the frame that perhaps is not obvious at first glance. It is conspicuous that female characters play a major role in the sphere of the witch house, where the orthodoxy of gender relations seems to be turned upside down: whereas in the father's house and in the woods Hansel is active and his sister remains passive and scared, Gretel takes command in the witch's house, where she is the one that burns the witch and actively intervenes, whereas her brother is forced to remain passive, because he is locked into the stable. Examples like this show, that a digital narratology of space could be a promising tool for tracing spatial constellations in narratives.

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Our last vignette discussed a very different kind of narrative, that of a fairy tale. Nonetheless, this fairy tale is also set in an environment with a history as described by Karen Jones, and as Katrín Anna Lund showed, mythical beings also have their place to play in understanding modern landscapes. Gabriel shows how what he calls digital narratology can allow us to explore the relationship between physical settings and the characters of the fairy tale. His vignette hints at the potential, but also the need for methods which allow exploration of texts in novel ways, in this case related to the locations of the participants of the narrative in space. Taken together, the six narratives show a range of perspectives from which narratives can be interpreted and understood.

⁴ For the comparison I used log-likelihood-measurement, performed with the help of the R *Quanteda* package (Benoit et al., 2018).

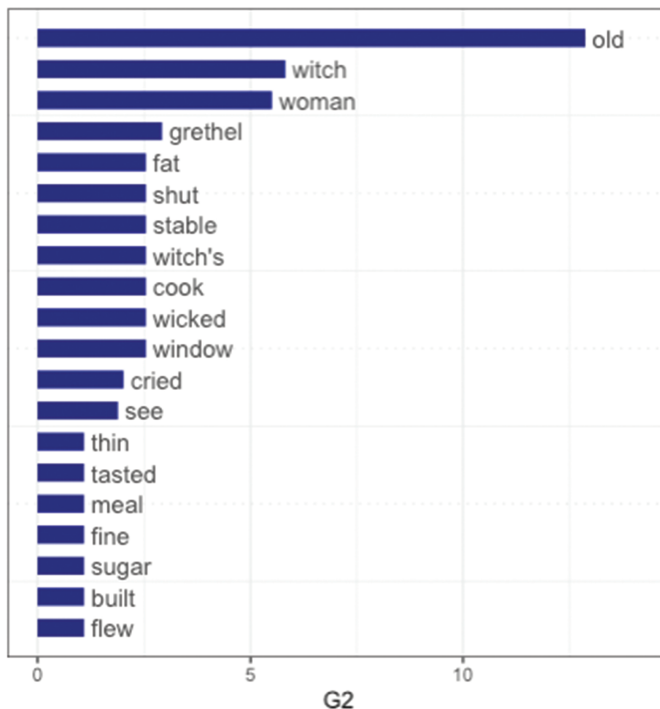


Figure 2.5: Distinctive words related to the witch's house in the fairy tale 'Hansel and Gretel'.

To unlock these narratives, by allowing their analysis and interpretation at scale, we need to start to consider if, and how, computational approaches can help. Doing so requires not only methods, but also digital collections of documents. In Chapter 3 we illustrate, through an example, ways in which we can start to explore text computationally.

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