INTRODUCTION

RETHINKING LITERARY MAPPING

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We organize information on maps in order to see our knowledge in a new way. As a result, maps

suggest explanations; and while explanations reassure us, they inspire us to ask more questions,

consider other possibilities. (Peter Turchi, *Maps of the Imagination* 11)

As a subversive force, the Digital Humanities should not be considered a panacea for whatever ails

the humanities, for they bring their own challenges and limitations. The point, to my mind, is not that

it is better (or worse) but rather that it is *different*, and the differences can leverage traditional

assumptions so they become visible and hence available for rethinking and reconceptualizing. (N.

Katherine Hayles, *How We Think* 23-24)

This book is about the relationship between the practice of mapping, the application of

geospatial technologies and the interpretation of literary texts. The contributors have been

selected from a range of disciplines and they approach this relationship from different

perspectives. Yet, notwithstanding these differences, their contributions are collectively

defined by a shared preoccupation with the possibilities afforded – and the problems

presented – by the use of digital mapping tools and techniques in literary studies and cultural-

geographical research. Each of the following chapters, that is to say, explores the dynamic

ways that the creation of literary maps can confirm meaning and challenge critical

assumptions. Each, moreover, reflects a common interest in how digital technologies can

open up new ways of conceptualising and practising literary mapmaking. Accordingly,

although they showcase the work of different projects and stake out their own critical

positions, the chapters comprising this volume all engage with digital mapping technologies

as a means of rethinking the spatial interconnections – and tensions – that link literary texts

with writers, readers and the material world. In this way, the chapters that follow aim to initiate conversations and to contribute to ongoing discussions about the possibilities for the practice of literary mapping in the digital age.

1. **Digital Maps in Everyday Life**

The various projects, perspectives, and positions presented in this collection are located at the confluence of three distinct fields of research: human geography, literary studies and the digital humanities. The purpose of this Introduction is to contextualise this collocation, firstly by considering the presence of digital maps and mapping tools within society at large, and secondly by considering their influence on the development of literary cartography as an area of research. In attending to the first of these two tasks, it is useful to recall Michel de Certeau's notion of 'the practice of everyday life' (*l'invention du quotidien*), because – as we shall see – mapping technologies constitute an innovative means through which individuals can orientate themselves and, in the process, renegotiate their relationship with their surroundings. Digital maps are, in any case, ubiquitous. They are on our desktops and in our cars. They are in our newspapers and on our smartphones. They are on our aeroplanes and in our museums and galleries. In each of these manifestations the principal function of the digital map is to convey, and to facilitate the interpretation, of spatial information. For instance, it is commonplace for news agencies to use Geographic Information Systems (GIS) to visualise the spatiality of statistics ranging from crime rates to election results. The Global Positioning System (GPS), on the other hand, is commonly employed by personal navigation devices that allow individual users to monitor their location and movement. Digital mapping tools, however, serve more than purely utilitarian functions in our daily lives. In public museums and galleries, mapping software such as Google Maps and its cognate virtual globe platform Google Earth are used to enhance the visitor experience by presenting interactive interfaces

that spatially curate individual objects and artefacts or even entire collections. In the intimate spaces of our homes, moreover, many of us use these online resources to undertake virtual flights to far off locations and to revisit the half-remembered landscapes of our childhoods. Certainly, such digital mapping experiences are by no means universal, and (as we might expect in light of de Certeau's ideas) the individuals who engage with such technologies devise their own unique mapping procedures and practices. Yet, to adapt a term that Rachel Hewitt has applied to the development of analogue cartography in the eighteenth century, we demonstrably live in an age of digital 'map-mindedness' (*Map of a Nation* 203).

The ubiquity of geospatial technologies is, however, far from universally celebrated. Indeed, they are as likely to be praised for generating new interest in mapping and mapmaking as they are to be blamed for triggering a general decline in geographical literacy. In *On Roads: A Hidden History*, for example, the cultural historian Joe Moran considers the suspicion – and, in some cases, outright scorn – aroused by the increasingly widespread use of satellite navigation systems (Sat Navs) in cars. As he suggests, the wariness expressed by many commentators about such 'cyborg' technology feeds into a 'fear that cold-blooded modernity is defeating vernacular knowledge, that roads no longer lead to real places but around and through them' (Moran 82, 86). This 'fear', as Moran reminds us, is not new – 'even before the arrival of the car, people … worried that maps sever us from real places' – and its anxiogenic influence has spurred the counter-cultural mapping practices of 'radical thinkers from Guy Debord to Rebecca Solnit' (Moran 86). Even more recently, this fear has found a powerful champion in Rita Gardner who, during her term as Director of the Royal Geographical Society, condemned Sat Nav equipment for 'destroying our ability to read maps and undermining our sense of self' (Axon, Speake and Crawford 170). For Gardner, then, Sat Navs worryingly – and unequivocally – diminish both our knowledge of the topological relationships between places and our awareness of the textural complexity of the

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material landscape.

This anxiety about the diminution of our spatial awareness and attunement is similarly threaded through the landscape writings of Robert Macfarlane. In *The Wild Places*, Macfarlane voices his concern for the way contemporary mapping practices – and, by extension, the popular spatial imagination – are shaped by the Cartesian 'grid map', which 'places an abstract geometric meshwork upon a space, within which any item or individual can be co-ordinated' (141). Although, as Macfarlane acknowledges, he is neither advocating 'the abolition of the grid map' nor denying that his own journeys are aided by trigonometric plans, he is nonetheless outspoken about the way such rigid cartographic instruments inhibit 'our sense of the worth of map-as-story: of cartography that is self-made, felt, sensuous' (*The Wild Places* 143). Notwithstanding the grid map's 'rigorous' geometrical precision, Macfarlane concludes, it deadens our intuitive senses by 'suppress[ing] touch, feel and provisionality' (143). Such anxieties are reasserted in *Landmarks*, Macfarlane's more recent exploration of the 'power of language – strong style, single words – to shape our sense of place' (1). Here, perhaps unsurprisingly, we find him invoking the late writings of Martin Heidegger in order to bemoan how technology 'has bequeathed to us an inadequate and unsatisfying relationship with the natural world, and with ourselves too' (*Landmarks* 25). The plane surface of the digital screen, for Macfarlane, distracts us from our environment and diminishes our phenomenological experience.

Macfarlane's techno-skeptical narratives of loss and disconnectedness raise a series of issues for the literary cartographer interested in the complex relationship between text, geography and digital technologies, especially when we consider them in the light of the reservations expressed about such technologies by scholars such as Gardner. Specifically, they emphasise the need to evaluate what is lost and gained in the process of digital mapmaking. What is it that such maps are capable of revealing? What is it that they displace

or conceal? More generally, considering Macfarlane's praise for vernacular cartographic practices in tandem with Hewitt's reflections on the beauty and value of old Ordnance Survey maps, prompts us to wonder if digital mapping tools are really as deleterious as they have been made out to be. Like the technologies of place-naming and paper maps, cannot digital maps also open up new spatial practices and spatial imaginings? Can they not, equally, contribute to and facilitate a re-enchantment of place? These are all issues that the contributions to this collection explore.

2. Conceptualising Digital Mapping Practices

How, then, might we begin to understand and to conceptualise the ways digital mapping tools have transformed the practice of everyday life and the production of geographical knowledge? The most prominent and popular manifestations of 'maps in cyberspace' (Zook and Dodge) are Google Maps and Google Earth. According to Trevor M. Harris et al., the 'release of Google Maps in 2005 fundamentally changed the landscape of Web mapping', effectively setting a new standard for the digital projection of 'base vector data and imagery' (Harris et al. 132). Google Maps was then supplemented, later on in the same year, by Google Earth: a light form of GIS which built upon an earlier platform, EarthViewer 3D, in compiling 'satellite imagery and aerial photographs into a 3D virtual globe' (Farman 872). Since the introduction of Google Street View in April 2008, moreover, the platform has included an ever-increasing number of 'panoramic images at street level' (Farman 872). Jerry Brotton asserts that, through these affordances, Google has developed 'the world's most popular geospatial application' and supports that claim by indicating that, by November 2011, Google's 'market share in the United States was over 65 per cent' and that, globally, Google Earth had been downloaded 'more than half a billion' times (Brotton 406). Google Earth offers the user 'an extraordinary ten petabytes of potential geographical information

distributed across the globe's surface' with a simple click of a mouse (Brotton 406). The availability and accessibility of Google's applications distinguishes them from the highly specialised and expensive geographical software that was once the preserve of digital cartography. As a result, for many people maps now mean Google: a cartographic 'sea change' which is at least partly responsible 'for the waning popularity of the paper map' as evidenced by 'sales figures provided by the Ordnance Survey, Britain's national mapping agency' (Hewitt, 'Turn Around When Possible' 2).

Crucially, however, the user of Google's applications does not simply and passively absorb the geographic information provided to them, but actively participates in the process of spatial discovery. As the interdisciplinary collection *Rethinking Maps* affirms, such cartographic interactions are underpinned by a 'processual' framing through which both 'map making and map use' are understood to be 'embodied and dynamic . . . cultural practices involving action and affects' (Kitchin et al. 17). For the co-editors of *Rethinking Maps*, maps are no longer to be conceived as materially stable providers of objectively surveyed geographical data; rather, they are to be understood (à la J. B. Harley) as cultural texts which are performed, and brought-into-being, with each individual mapping practice (Kitchin et al. 17). This theorisation of a 'post-representational cartography' is demonstrably applicable to all forms of geospatial technology (Kitchin et al. 10). That said, it seems especially pertinent for thinking about the nature of digital maps, which encourage and empower the user to make an active contribution to the unfolding – and even the creation – of new cartographies.

Cartographic dynamism is cinematically foregrounded in the way the user first accesses the virtual globe of Google Earth. In *A History of the World in Twelve Maps,* Jerry Brotton describes the spectacle of launching Google's virtual globe with narrative flare: 'From 11,000 kilometres above its surface, the planet earth spins into view out of the black void of deep space. The sun's rays illuminate its surface, which appears free of clouds and

water, although its ocean floors still sparkle ultramarine blue, the continents a beguiling patchworks of greens, browns and pinks' (405). From this extra-terrestrial viewpoint, the user can then navigate his or her way through virtual space, zooming in on self-selected locations and manipulating the geo-visualisation by rotating the map, adjusting the cartographic scale and toggling between cartographic representations and satellite photographs. According to Harris, the emphasis Google Earth places on facilitating this semi-immersive experience corresponds to a broader trend in the development of online tools. 'The technology used to build Web content has,' he explains, 'shifted toward a dynamic user experience that uses asynchronous technologies to reduce the load times for content to create a seamless user experience' (Harris 131). Saliently, though, the sense of user interactivity extends far beyond the capacity to control the way the digital map manifests on screen. 'In addition,' continues Harris, 'Google Earth and Google Maps support embedded multimedia such as photographs, text, oral narrative, sketches, video, and audio within the map or globe representation thereby allowing users and communities to upload and share spatialized qualitative information'. Thus, for Harris, the 'slippy' interface of the desktop map constitutes 'a collaboratory space' which has the potential to provide unique, user-generated 'insights into aspects of place' (Harris 131-32).

The new spatialities opened up by the processual, interactive and even participatory nature of contemporary digital mapping practices are similarly evident if we move beyond desktop applications. In an article published in 2004, Nigel Thrift formulates a post-humanist analysis, contending that motorists' use of Sat Navs in urban environments brings about 'new forms of embodiment-cum-spatial practice which are sufficiently subtle and extensive to have every chance of becoming a new background to everyday life' (Thrift 52). Here, then, Thrift – the influential non-representational theorist – self-consciously opposes the reactionary critiques typified by Gardner to demonstrate that new conceptual framings are required for

the new phenomenological experiences created in the age of geospatial technologies. More than this, Moran goes some way to countering the counter-cultural mappings of Debord and Solnit by suggesting that, 'despite the Orwellian echoes of "ground-truthing"' – the system by which the accuracy of the digital map is continuously monitored through fieldwork – Sat Nav's 'very complexity gives it something of the collective consciousness of an internet wiki'. As Moran makes clear, the digital maps in our cars are always provisional and are open to corrections and updates from 'public-spirited' drivers (Moran 87). Even the digital maps to be found in Sat Navs, therefore, can be understood as collaborative cartographies. Such social practices extend to mobile phone technologies, as a smartphone application such as Waze – which provides free traffic information – is exclusively reliant upon user input. This app thereby fosters a sense of (virtual) community based upon the altruistic sharing of spatial knowledge.

At the same time, moreover, the development of smartphone technology has, in the words of Chris Speed, taken digital maps users 'out of the car and back on foot' (Speed 161). Most advanced mobile operating systems, as Speed explains, 'feature GPS technologies and a mapping application of one form or another that can stream a street or satellite map onto the screen and pinpoint the user within it' (161). The result is that 'the locative properties' of mobile devices, such as smartphones, 'are beginning to change the way that we navigate physical and social spaces' (Speed 160). Clancy Wilmott expands on this analysis in an article on 'mobile mapping as a contemporary urban practice', which focuses on the Australian city of Sydney. According to Wilmott:

> The Sydney that I find on a mobile phone is a cartographic city. It is so completely dominated by and reliant on geo-coding systems, that it is impossible to avoid maps or to express the city without them. Maps form the architecture of the mobile city: they

direct flows, produce spaces and position places (Wilmott).

Whereas Thrift updated de Certeau's famous account of 'Walking in the City' for the Sat Nav generation, Wilmott, writing eight years later, emphasises how the imbrications of digital mobile mapping and pedestrian practice are 'disrupting traditional spatial paradigms' (Wilmott). In addition, she stresses the embodied performativity that is integral to the use of digital maps accessed on mobile devices: 'depending on the device . . . a specific kind of tactility is required – tapping, clicking, pressing, swiping – all of which eventually form a subconscious part of the process of calling on and adjusting the map'. As Wilmott points out, 'the assumption that "the map" is a static representational object is no longer accurate', since the smartphone map unfolds as the user moves his or her finger across the screen and/or moves through physical space (Wilmott). Fundamentally, then, digital maps are to be understood 'as always in a state of becoming; as always mapping; as simultaneously being produced *and* consumed, authored and read, designed *and* used, serving as a representation *and* practice' (Kitchin et al. 17).

3. Literary Cartography

Digital technologies, therefore, have transformed our daily spatial practices. At the same time, they have had a demonstrable influence on the ways scholars are thinking spatially, and understanding spatial patterns and networks, in a range of intersecting disciplines. Before turning to consider how such technologies have shaped the processes and procedures of researchers working on the literature of landscape, space and place, however, it is first necessary to reflect on literary cartography as interpretive practice. It is, moreover, necessary to acknowledge that, in spite of its increased prominence in critical practice, a standard definition of literary cartography has yet to take hold. In a special issue of *The*

Cartographic Journal devoted to 'The Geographies of Fictional Worlds', Barbara Piatti and Lorenz Hurni class literary cartography as an 'ancillary science' of literary geography, explaining that whereas the latter constitutes a 'topic', the former designates an 'approach' (Piatti and Hurni 218). This distinction (which follows the traditional, hierarchical classification of cartography as a sub-discipline of geography) similarly underpins Andrew Thacker's influential conceptualisation of a 'critical literary geography'. In wondering whether cartography might be one way of understanding both the textual representation of geographical space and the spatial contexts in which literary works are produced and read, Thacker identifies two extant forms of literary mapping. He rightly acknowledges that many 'contemporary critics seem to have taken a . . . metaphorical route for maps, perhaps taking a lead from [Frederic] Jameson's use of "cognitive mapping" as a master-trope for interpreting contemporary culture' (Thacker 61). This metaphorical understanding of mapping continues to shape one form of contemporary literary cartographic practice and is a defining characteristic, we would argue, of the (fine) essays brought together by Robert T. Tally Jr. in a recent addition to his 'Geocriticism and Spatial Literary Studies' series (Tally Jr. 2014). Citing the pioneering example of Franco Moretti's *Atlas of the European Novel 1800-1900*, however, Thacker identifies an alternative form of literary cartography in which actual maps are created out of the spatial analysis of a literary text or texts. In the pages that follow, we define literary cartography along these lines. That is to say, we – and the contributors to this collection – are interested in the potential and problems associated with the making of literary maps and other closely related forms of literary geovisualisation.

Broadly conceived in this way, the practice of literary cartography can be seen to take its orientation from a critical conviction in mapping as a practice that enriches the reader's appreciation of the literary work of art. Such a conviction, though possibly apparent as far back as the geographical treatises of Polybius and Strabo (Kerrigan 3), is, by and large,

indicative of a distinctly modern literary sensibility. As Thomas Cachey Jr. has clarified,

early modern literary maps, such as Alessandro Velutello's extraordinary 1525 plan of the

landscape of Petrarch's *Canzoniere*, reflect not only contemporary advances in cartographical

knowledge, but also the rise of a new critical preoccupation with spatially locating the literary

work (Cachey Jr. 456). Within the Anglophone world in particular, this readerly

preoccupation with seeking out the world behind the word, though evident in early literary-

cartographic projects such as Matthew Paris's *Chronica Majora*, gained special prominence

during the nineteenth century and attained its apotheosis in the Victorian 'love-affair with

biography' and literary celebrity, and the concomitant 'impulse to naturalise' authors and

their works 'to particular places' (Watson 106, 201). It is for this reason that the earliest

works to be labelled literary geographies, in English, were typically tourist texts: literary

itineraries, which, whether intended for the armchair or the field, were often embellished with

maps and plans documenting sights of either literary-biographical or purely imaginative

significance. William Sharp's now oft-cited 1904 volume *Literary Geography*, a collection of

articles first published in *The Pall Mall Magazine*, a handful of which contain maps, is

indicative of the quality of such early literary-cartographic endeavours.

Over the past century the field of literary cartography has come to be defined by a

series of influential studies, which range from H. C. Darby's exploratory 1948 analysis of

Thomas Hardy's Wessex to Malcolm Bradbury's popular *Atlas of Literature* published in

1996. Saliently, however, the recent preoccupation with the making of literary maps has been

informed – in keeping with the wider methodological developments in the interdisciplinary

field of literary geography – by an increased theoretical awareness of the complexity of

cartography and the inherent 'slipperiness' of literary maps (Bushell). The diverse – and, in

some instances, divergent - work of geographers such as Jon Anderson and Angharad

Saunders, and literary critics such as Sally Bushell and Damian Walford Davies, suggests that

contemporary literary cartography is, by no means, unified by a common methodology or even a common perspective. Yet, in spite of these differences, their work takes its orientation as a field of inquiry from a collective interest, on the one hand, in 'the place-bound nature of literary forms' (Moretti 5) and a widely shared responsiveness to 'the spatial ontology of literary production' (Saunders 444) on the other. Moreover, this new critical literary cartography is uniformly informed by a willingness to reflect on what Thacker identifies to be the potential 'problems' of using 'cartography as a guide to literary interpretation' (Thacker 60).

It would overextend the scope of this Introduction to summarise the various forms and instantiations of contemporary literary cartographic thought and practice. Instead, therefore, we want to turn to the ways the processes of literary mapmaking have been manifestly enriched by the consideration and implementation of geospatial technologies, including many of the digital tools described above. A crucial development here has been the emergence of an array of digital mapping projects including large-scale atlases, such as ETH Zurich's *A Literary Atlas of Europe*, Trinity College Dublin's *Digital Literary Atlas of Ireland* and the University of Queensland's *Cultural Atlas of Australia*, as well as projects focussed on the literary cartographies of specific landscapes and cityscapes, such as the University College London-funded *Mapping St Petersburg: Experiments in Literary Cartography*, Lancaster University's *Mapping the Lakes* and the University of Edinburgh's *Palimpsest: Literary Edinburgh*. Other project developers have focused on the mapping of individual texts: so, for example, Barbara Hui's *Litmap* employs Google Maps to visualize the difficult-to-define spatial networks articulated in W. G. Sebald's *Rings of Saturn*; whilst Boston College's *Walking Ulysses* uses both historic and contemporary maps of Dublin to chart the locational geographies of Joyce's great Modernist novel. Elsewhere, projects have been informed by ambitious theoretical considerations and have self-consciously addressed the question of how

geospatial technologies might radically recalibrate the fundamental practices of reading and analysing literary texts. The work of Anouk Lang, for example, has drawn upon methodologies traditionally used in quantitative spatial analysis to facilitate new understandings of the global networks of literary Modernism; whilst a playful preoccupation with geovisualisation tools and technologies has shaped several of the experiments in computational criticism developed in the Stanford Literary Lab under the directorship of Moretti.

4. The Challenges of Digital Literary Mapping

There is not room here to provide a comprehensive account of this widespread move towards digital literary mapmaking. Instead, in what follows we propose briefly to consider four interpenetrating issues, or challenges, which need to be confronted by all digital literary mapmakers: Why map? How to map? What to map? And, finally, is there potential – and perhaps even a need - to go beyond the map?

According to David M. Berry: 'The digital humanities . . . have had a rather interesting history': 'Originally called "computing in the humanities", or "humanities computing", in the early days they were often seen as a technical support to the work of the "real" humanities scholars' (Berry 2). The first wave of digital humanities scholarship, therefore, was invariably characterised by the uncritical 'application of the computer' (Berry 3). As Todd Presner, David Shepard and Yoh Kawano explain, though, 'over the past decade, the methods, media, and materiality of humanities research have undergone dramatic change. . . and the humanities have developed new research methods through their encounter with the computational sciences (Presner et al. 20). The second wave of the digital humanities, therefore, 'is an emerging field that explores the deeply productive tension and precarious linkage between computational practices and humanities scholarship' (Presner et al. 20). By

extension, then, digital literary mapmakers can no longer claim that the value of their work resides exclusively in the novel application of computational tools. Instead, the practice of digital literary mapmaking ought to be predicated on that most fundamental of questions: why? That is to say, why might it be helpful to geovisualise literary texts? Moreover, what is the purpose of the digital literary map? Who is it for?

Many extant projects have sought to exploit the popular appeal of digital maps, highlighted earlier on in the Introduction, to use geovisualisation as a communication tool. Some of these ambitions have been overtly pedagogical, with a particular emphasis on the use of geospatial technologies to enhance the literary-geographical knowledge of students. The *Mapping Dubliners* project at Oklahoma State University, for instance, employs Google Maps and Google Earth to assist students in visualising the complex geographies of mobility and paralysis evident in James Joyce's canonical short story collection. Similarly, *Google Lit Trips* – devised by the former high school teacher, Jerome Burg – aims to assist course instructors in 'creating engaging and relevant literary experiences for [their] students' by furnishing them with 'free downloadable files that mark the journeys of characters from famous [works of] literature on the surface of Google Earth' (*Google Lit Trips*). Alongside the development of these online resources, there has been a growing tendency to place digital maps in literary heritage centres and museums in an attempt to use geovisualisations as a means of curating literary texts and historical artefacts. Intriguingly, the practice of digital mapmaking is also increasingly embedded within major literary research projects. A notable example here is the University of Glasgow's *Editing Robert Burns for the 21st Century* project, which incorporates three digital mappings of the poet's tours in the Highlands and Borders of Scotland. Crucially, these maps – which allow the user to trace Burns's movements, as plotted by Nigel Leask, across historic maps digitised from the National Library of Scotland's Map Department – form an integral part in the project's 'major

innovative website', which aims to offer a point of virtual connection with the 'wider global community' (*Editing Robert Burns for the 21ˢᵗ Century*).

Clearly, then, desktop digital literary maps carry significant potential both for enriching pedagogic practices and for engaging new audiences. Yet, further communication opportunities are afforded by the use of geospatial technologies in the development of literary applications for mobile devices. Unsurprisingly, the commercial potential of such applications has been recognised by publishing houses as exemplified by Penguin's 'amplified' edition of Jack Kerouac's *On the Road* which charts Sal Paradise's motorised movements across the United States. At the same time, the rich pedagogic potential of apps has been noted by the Joyceans at Boston College whose students, over several years, have collaboratively contributed to *JoyceWays*: a crowd-sourced mapping of the city of Dublin which allows users to access texts, maps and photographs via mobile devices.

It is important to stress, however, that, for others, digital literary mapmaking is an unapologetically scholarly practice which is underpinned by the ambition to advance knowledge. Damian Walford Davies, for example, ends his recent monograph *Cartographies of Culture* by speculatively gesturing towards the possibility of creating a 'Digital Literary Atlas of Wales' (Walford Davies 206). Walford Davies's vision for this projected atlas corresponds with the concept of 'deep mapping', articulated by Bodenhamer et al., as he envisages a GIS which would 'prompt a critical and affective inhabitation of the cultural *dimensionality* of a literary work' (Walford Davies 206). More specifically, he imagines a digital enterprise which would collate a range of visualisations including a 'palimpsest of charts . . . graphic images, and 2- and 3-dimensional cartographic modelling and animation' (Walford Davies 206). There is little doubt that the 'Digital Literary Atlas of Wales' would appeal to a wide constituency beyond the academy. Central to Walford Davies's vision, though, is the way 'maps and other graphic mappings invoked by the atlas would play critical

methodologies off against each other' so that, for example, 'cartography as a trigger for historicist "embedding" would contend with cartography as a formalist provocation' (Walford Davies 206-7). In the end, therefore, the creation of Walford Davies's ambitious digital atlas will be informed by the belief that the process of thinking cartographically about literary texts is, in itself, a form of self-reflexive critical practice. Moreover, as he stresses, the critical potential of encountering the unmappable reminds the digital literary mapmaker of the need for 'a literary theory and criticism attentive to the complex modalities of the "folding landscapes" of literary cartography': a theory and criticism which 'must remain, . . . in the words of Tim Robinson, "faithful to more than the measurable"' (Walford Davies 209). As Derek Schilling puts it, in a vitally robust critique of what he terms 'the new literary geography', there is a need to 'examine the effects of cartographic reason on the interpretive process, asking ourselves what thinking in two dimensions, regardless of the granularity achieved, pushes us to ignore' (Schilling 226). The process of literary mapping, then, has a dual scholarly purpose: it carries the potential to facilitate a literary geographical understanding of literary texts; and, at the same time, it carries the potential to facilitate further conceptual thinking about what it means to map.

Having considered the core question of 'why map', the digital mapmaker must decide what geospatial technologies to use in the creation of the new literary cartography. As the various disciplinary and interdisciplinary perspectives reflected in this collection testify, at present digital literary cartographers work with a wide variety of tools and techniques. Yet, as the chapters that follow also illustrate, there has been a collective gravitational pull towards a few key technologies. Early digital literary mapping projects were underpinned by an interest in the geovisualisation and interpretive possibilities afforded by GIS. This interest has, in large part, led to the widespread implementation of GIS across the arts and humanities, a development which David J. Bodenhamer, John Corrigan and Trevor M. Harris have labelled

'the spatial humanities' (*The Spatial Humanities* vii). Notably, many of the maps produced by pioneering projects such as the *Digital Literary Atlas of Ireland, 1922-1949*, *A Literary Atlas of Europe* and *Mapping the Lakes* were created using proprietary software such as ArcGIS: a specialist platform which is able 'to integrate, analyze, and visualize large amounts of both spatial and temporal data' (Richardson 210). The ability of GIS to visualise a layered landscape has been especially conducive to digital literary mapmakers interested in palimpsestic – or 'stratigraphic' (Mitchell) – topographies. That is to say, the technology has been perceived as an appropriate medium for geovisualising terrains which have been subjected to years, decades and, in some cases, even centuries of cultural over-determination. Saliently, given that the scholarly use of GIS has been historically rooted in quantitative spatial analysis (Gregory), early literary GIS projects were committed, at least in part, to testing the methodological possibilities of quantitative approaches to the literature of space, place and landscape. This commitment to the quantitative can be similarly traced in Matthew L. Jockers's concept of 'macroanalysis' and Franco Moretti's ideas about 'distant reading'. Collectively, such critical paradigms contribute to what Anouk Lang has described as the 'disciplinary making-strange, or "analytical ostranenie"', which 'goes to the heart of why digital humanities is such an exhilarating field to work in' (Lang 221). At the same time, however, early literary GIS fed both off and back into a wider interdisciplinary move towards the possibility of a post-positivist qualitative GIS (Cope and Elwood).

Less specialised forms of geographic technology, such as Google Maps and Google Earth, have inevitably become integral to digital literary mapping. This turn to web-based spatial technology was framed in the *Mapping the Lakes* project as a progressive development as it moved 'literary GIS away from the two-dimensionality of conventional plane cartographies and into the two-and-a-half dimensional contoured landscapes represented in Google Earth' (Cooper and Gregory 104). It is unsurprising, then, that Google

Maps and Google Earth have been used in a plethora of digital projects which range from the mapping of unprecedentedly large literary corpora (*Spatial Humanities: Texts, GIS, Places*) to individual canonical texts (*LITMAP*), from the geospatialisation of the literature of a nation (*Cultural Atlas of Australia*) to quotidian reading practices (*Placing Literature*). Similarly, moreover, the use of web-based technology has been instrumental in the movement of digital literary mapping from the desktop to the smartphone and, by extension, from the study to the street (*Cardiff Plotlines*). Still, even though Google technologies dominate, they are not – for reasons ranging from the technical to the political – the exclusive medium for digital literary mapping practices. For example, the researchers behind the *Mapping St Petersburg* project praised Google for sparking 'a veritable revolution in digital cartography'. At the same time, however, they expressed anxiety about the perceived geovisual rigidity of Google Maps and gestured towards the possibilities that might be afforded by the use of Open Street Map: 'the "crowdsourced" internet map, that being free and open source allows one to change the look and content of the map tiles' (*Mapping St Petersburg*). As many of the contributors to this collection demonstrate, it is possible – even desirable – for the digital humanist to acknowledge the limitations of geospatial technologies, such as those offered by Google, and to consider alternative forms of mapmaking.

The third challenge is to determine what is to be mapped in order for the literary map to be brought-into-being. Many literary mapping projects have constructed toponymic maps by identifying and geo-referencing the place-names found either in specific literary works or collections of literary texts. This practice has been fundamental to the development of literary GIS, and major advances have been made in facilitating the automatic extraction of place-names within large corpora, a process which is often applied in the macro-mapping of spatial patterns and trends. Significantly, the geo-referencing of place-names has been similarly integral to the way some digital literary mapping practices have emerged outside the

academy. The popular *Placing Literature* website, for example, frames the development of 'an online database of places from scenes in literature' thereby calling attention to the widespread appeal of rooting the geographies of fiction in recognisably real-world environments:

> Setting is a vital component in any work of literature – from Charles Dickens's London to Mark Twain's Hannibal to Jack Kerouac's Lowell. Putting a story in the context of a real physical location gives stories context, placing readers in a familiar locale as the story unfolds around them[.] (*Placing Literature*)

In such instances, then, the ambition to identify place-names is demonstrably shaping the reading of the literature of space, place and landscape and, in turn, implicitly privileges the textual representation of actual – that is to say, empirical – geographies. At the same time, this preoccupation with toponyms is also inflecting the writing processes of some creative practitioners. Clarissa Draper – a Canadian novelist, based in Mexico, whose debut mystery novel, *The Sholes Key* (2012), is set in contemporary London – uses her blog to codify a seven-step guide for using Google Maps to 'help plan your book'. Draper's authorial advice involves the making of customised maps which allow creative writers to locate 'where your story takes place' and the insertion of annotations (a brief description, for example, of the imagined event which is to occur at a particular geographical site) which serve the function of geo-located compositional notes' (Draper). As a result, Draper's evangelical enthusiasm for the way that Web-based maps can enable creative writers to authenticate the geographical fidelity of their represented worlds corresponds with what Annika Richterich identifies to be the 'new literary realism' which has emerged out of a widespread fascination with geospatial technologies (Richterich).

Notably, however, most works of literature are not predicated on the aggregation of unambiguously mappable data. What happens, then, when the digital mapmaker encounters toponyms which do not correlate to any real-world geography? How are purely fictional place-names geovisualised within the cartographic parameters of any GIS software? Clearly, such challenges are particularly profound when dealing with what Anne-Kathrin Reuschel and Lorenz Hurni refer to as 'spatial uncertainty in fiction' (Reuschel and Hurni). Yet, saliently, such issues are similarly encountered when mapping, for example, a work of Victorian travel writing. That is to say, how does the mapmaker handle the misspelling of place-names or the misidentification of geographical features? How does he or she differentiate between geographical sites through which the embodied author actually experiences and those locations which the author only visits in imaginative space? The questions, and the cartographic challenges, proliferate. In contrast to quantitative data (such as, say, historical mortality rates), therefore, these equivocal forms of spatial information provide the reader with 'fuzzy geographies' (Evans and Waters), which, in turn, lead to the creation of 'slippery' maps (Bushell).

A fourth key issue is the consideration of whether there is scope – and perhaps even a need – for the makers of digital literary maps to move beyond online tools or even GIS. In an interdisciplinary collection first published in 2009, Sarah Elwood and Meghan Cope proposed that the development of qualitative GIS depends upon 'a mixed methods approach' that 'emphasizes the infinitely creative and political possibilities of bringing together multiple ways of knowing and making knowledge' (Elwood and Cope 6). In this experimental vision, then, GIS is integrated within a programme of research based on the interweaving of methodologies from the humanities and geographic information science. As a result, GIS maps appear alongside alternative presentational forms such as grid images of urban space produced by computer-aided qualitative analysis software (CAQDAS) and audio recordings

of the residents of a particular community. The ambition 'to create new forms of knowledge based on the intentional, reflexive mining of [such heterogeneous] approaches' (Knigge and Cope 96) similarly underpins the initiative outlined by Bodenhamer, Corrigan and Harris from the spatial humanities to 'deep maps and spatial narratives' (*Deep Maps*). An exploratory form of geospatial practice, as Bodenhamer et al. explain, deep maps offer 'a finely detailed, multimedia depiction of a place and the people, animals, and objects that exist within it' (*Deep Maps* 3). Deep mapping, in so many words, does not simply allow for multiple modes of presentation. Instead, it constitutes 'a platform, a process, and a product' that remains subject to addition and amendment by users (*Deep Maps* 3). In contrast to the fixity of early literary GIS visualisations, therefore, deep mapping offers 'a new creative space that is visual, structurally open, genuinely multimedia and multilayered', and which, moreover, is capable of fostering creative collaboration (*Deep Maps* 4).

5. Mapping the Collection

The essays that have been brought together in this collection offer disparate – and, at times, divergent – responses to the four questions – or challenges – set out above. Some of these differences are directly attributable to the fact that the contributors come from a diverse range of disciplines, including human geography, literary studies, and geographic information science. The collection as a whole presents multidisciplinary perspectives on the core questions of what literary mapping might be and do in the digital age. Saliently, though, several contributions are either multi-authored or based on the work of research projects which bridge disciplinary boundaries, and thereby bring together researchers from different scholarly communities in the one, genuinely interdisciplinary textual space. As a result, there is an emphasis on conversation running throughout the volume and, over the following pages, it will become clear to the reader that digital literary mapping is invariably predicated upon

collaboration, exchange and even productive tensions. As editors, we strongly believe that a collection of essays is the most appropriate medium for encapsulating this pluralism and polyphony. Yet, even though the collection is characterised by heterogeneity, it is simultaneously possible to identify a series of cardinal preoccupations and practices at work within it. The fourteen chapters in this book, then, are clustered into three thematic sections: an arrangement that highlights both conceptual and methodological intersections as well as common points of departure.

The first of these three sections, 'Mapping Methods: Systems, Approaches and Innovations', features five chapters which, though distinct, all explore how the mapping of digital corpora can facilitate the analysis and interpretation of complex literary geographies and networks. The first chapter, 'Mapping the Emotions of London in Fiction', comes from a team of researchers at Stanford Literary Lab, led by Ryan Heuser. Combining advanced computing methods such as crowdsourcing, Natural Language Processing and spatial analysis, Heuser et al. mine a corpus of eighteenth- and nineteenth-century fiction for information about the affective associations of places in London. Using contemporary demographic data, including Charles Booth's 1889 Descriptive Map of London Poverty, moreover, Heuser et al. move beyond a measuring the 'affective investment' of individual texts in specific places, towards a revealing consideration of how fictional and historical accounts of London coalesce. This exemplary critical geospatial engagement with a literary metropolis complements the focus and methodology of the second chapter, 'The Digital Poetics of Place-names in Literary Edinburgh.' Here Miranda Anderson and James Loxley offer a unique insight into the practical and theoretical underpinnings of *Palimpsest: Literary Edinburgh*, a digital literary mapping resource that, in geolocating Edinburgh-based literary works to their settings, aims to sharpen our sensitivity not only towards the tales and traditions that populate the Edinburgh cityscape, but also towards those memories and associations which inhere in all places and in all acts of

place-naming. Ian Gregory and Christopher Donaldson's chapter, 'Geographical Text Analysis: Digital Cartographies of Lake District Literature,' picks up on this interest in local associations, but approaches the topic from a different methodological perspective. Drawing on a customised corpus of historical accounts of the English Lake District (developed by the Spatial Humanities: Texts, GIS, Places project), Gregory and Donaldson model the integration of geographical and corpus analysis in order to map historical responses to the Lakeland landscape and to evaluate how those responses correlate with one another and with the material geography of the Lakes region itself. Collectively, these three chapters set the stage for two further explorations of the geographies of distinct corpora. The first of these, 'Mapping Fiction: Theories, Tools, Limits and Potentials of Literary Cartography', comes from Barbara Piatti, who offers a survey of case studies completed by the *Literary Atlas of Europe* project in order to outline the possibilities and problems of creating cartographic representations of fictional works and fictional worlds. The second, Charles Travis's 'Bloomsday's Big Data: GIS, Social Media and James Joyce's *Ulysses* (1922)', presents an unprecedented exploration of the global literary celebration of Bloomsday and thereby develops a Web 2.0 model of literary cartographic practice.

Building on the foregoing examination of the interplay between text and place, the second section – Mapping Practices: Places, Writers and Readers – includes four chapters that address the spatiality of specific literary works and the geographies immanent within and central to their creation. The first of these is Sally Bushell's 'Mapping Fiction: Spatialising the Literary Work', which uses Thomas Hardy's *The Return of the Native* to focus a substantial meditation both on the difficulties of applying concepts of mapping to literature and on the affordance of current mapping technologies. Similarly, Angharad Saunders's 'The Spatial Practices of Writing: Arnold Bennett and the Possibilities of Literary GIS' draws out the latent spatiality of the works of Hardy's contemporary Arnold Bennett in order to consider those elements of a

literary work's geographical investment which GIS technology struggles to convey. A comparable interest in mapping writing practice distinguishes Jon Anderson's chapter, 'Between "Distant" and "Deep" Digital Mapping: Walking the Plotlines of Cardiff's Literary Geographies', which employs GIS and mobile technology to trace the creative practices of three writers, Peter Finch, Gillian Clarke and Lloyd Robson, investigating how their journeys through the city of Cardiff inform the characters, plots and themes of their fiction. Les Roberts's chapter, 'The Cestrian Book of the Dead: A Necrogeographic Survey of the Dee Estuary', which concludes this section, traces the narrative psychogeography of the Dee Estuary, using a self-consciously experimental blend of GIS and storytelling to bring the literary and cultural heritage of this shifting landscape to the surface.

The third and final section – 'Mapping Futures: Collecting, Curating and Creating' – moves away from reflecting on extant and ongoing projects and, instead, gestures towards future research paths and possibilities. In 'Making the Invisible Visible: Place, Spatial Stories and Deep Maps', David J. Bodenhamer expands the idea of exploring the inherent complexities of space and literature through an extended consideration of the concept of deep mapping. This exploratory method of geographical representation, as Bodenhamer explains, approaches space – or better said, place – in a multidimensional way, offering an exploratory path to geographies, stories, narratives and experiences. In a similar fashion, Trevor Harris, Frank Lafone and Dan Bonenberger's chapter, 'From Mapping Text in Space to Experiencing Text in Place: Exploring Literary Virtual Geographies', extends this discussion of exploratory multidimensional geovisualisation by showcasing an immersive virtual environment called the CAVE to bring to life the historical world of the nineteenth-century American author Rebecca Harding Davies. The third chapter in this section, Gary Priestnall's 'Spatial Frames of Reference for Literature using Geospatial Technologies', moves from the lab into the field with analyses of the creative and critical application of projected augmented relief models and geovisualisation as

approaches that blend digital and non-digital forms to create tangible models of literary worlds. In a similar view, but from a more theoretical perspective, Tania Rossetto's 'Geovisuality: Literary Implications' explores the affordances of geovisuality for literary studies by considering the implications of geospatial technologies on the practices of readers and writers alike.

Extending the discussion of geovisualisation and literary creativity initiated by Rossetto's chapter, this collection ends with a chapter that deliberately proffers a contrasting approach to the overarching theme of literary mapping in the digital age. Instead of concentrating on the use of geospatial technologies for the visualisation and analysis of literary texts, David Cooper's critical gaze focuses on some ways contemporary British writers have represented and used digital mapping technologies in their own creative practices. This final chapter, therefore, represents a departure from critical literary mapmaking by offering a movement towards the critical exegesis of literary texts born in the digital age. Crucially, though, Cooper's chapter is implicitly undergirded by the belief, voiced by Walford Davies, that the digital mapping of extant literary texts ought to be predicated on a willingness 'to analyse critically the cartographic "gene" of the literary imagination' (Walford Davies 209).

6. Literary Mapping in the Digital Age

Before making way for the contributors, we want to conclude this introduction with some final first thoughts about the position this collection occupies within the broader intellectual contexts of both cartography and the digital humanities. These twin interests have been recently brought together under the name of Doreen Massey: a geographer whose theoretical reflections on place have figured prominently in the interdisciplinary practices of many critical literary geographers. In March 2015, the seventh Doreen Massey Annual Event, held at the Open University in Milton Keynes, focused on 'Digital Geographies' and was framed by key

research questions which chime with the interests of this collection. 'How is the digital reformulating geographies' objects and methods?' 'How have objects of concern altered and how is geographical practice – its tools and techniques – altering to reflect the ubiquity of digital technologies?' Saliently, the online advertisement for the interdisciplinary event began with the assertion that: 'Digital technologies are now so diverse that, as David [M.] Berry has suggested, the category of "the digital" is becoming almost meaningless' (*OpenSpace Research Centre*). Berry's argument, that the label 'digital' is on the verge of redundancy, returns us to ideas explored at the beginning of this Introduction. That is to say, we are moving towards an age in which maps – of all kinds – will invariably be digital. This collection of essays, therefore, is a modest attempt to document a particular liminal moment in the history of literary mapping; a transitional moment at which mapmakers – from a range of disciplines – are constructing new theoretical frameworks, and fresh critical, paradigms in an attempt to understand the potential and limitations of geospatial technologies. This collection, then, emerges at a time when digital literary mapping is still coming-into-being.

The deliberately inclusive nature of this collection means that it is not underpinned by a single, monolithic thesis; but, crucially, the final sentence of the previous paragraph reinforces the emphasis on the processual nature of (literary) mapping practices. This preoccupation with the processual means that we are acutely conscious that the contents of this Introduction, and the collection as a whole, are inescapably partial, selective and incomplete. So, for instance, we are sensitive to the fact that both the Introduction and the contents concentrate, almost exclusively, on Anglophone literature. In addition, we are alert to the fact that the book might benefit from more sustained interrogations of both the politics of mapping and the mapping of different literary genres. Ultimately, however, a processual understanding of maps and mapping practices corresponds positively with the conceptualization of digital literary mapping which is in evidence throughout this collection.

In spite of the differing methodological approaches on display, there is a collective sense in which the practice of mapmaking is framed as an interpretive act and the literary map is understood as being repeatedly remade with each individual engagement. To return to the epigraphic quotations at the start of this Introduction, digital literary maps prompt the asking of further questions through both their geovisualisations and their lacunae. They may not always offer literary geographical explanations then; but invariably, and crucially, the act of mapmaking opens up space for the processes of rethinking and reconceptualising which, for Hayles, define the work of the digital humanist.

Works Cited:

Axon, Stephen, Janet Speake and Kevin Crawford. '"At the Next Junction Turn Left":
    Attitudes Towards Sat Nav Use.' *Area*, 44.2 (2012): 170-77.

Berry, David M., ed. *Understanding the Digital Humanities*. Basingstoke: Palgrave
    Macmillan, 2012.

Bodenhamer, David J., John Corrigan and Trevor M. Harris. 'Introduction: Deep Maps and
    the Spatial Humanities.' *Deep Maps and Spatial Narratives*. Ed. David J. Bodenhamer,
    John Corrigan and Trevor M. Harris. Bloomington: Indiana University Press, 2015. 1-6.

---. 'Introduction.' *The Spatial Humanities: GIS and the Future of Humanities Scholarship*.
    Eds. David J. Bodenhamer, John Corrigan and Trevor M. Harris. Bloomington: Indiana
    University Press, 2010. vii-xv.

Bradbury, Malcolm, ed. *The Atlas of Literature*. London: De Agostini Editions, 1996.

Brotton, Jerry. *A History of the World in Twelve Maps*. London: Allen Lane, 2012.

Bushell, Sally. 'The Slipperiness of Literary Maps: Critical Cartography and Literary
    Cartography.' *Cartographica*. 47.3 (2012): 149-60.

Cachey Jr., Theodore J. 'Maps and Literature in Renaissance Italy'. *History of Cartography.*

Ed. David Wooward. Vol. 3. Chicago: University of Chicago Press, 2007, 450-60.

Cardiff Plotlines. 2015. Web. 20 March 2015.

Cooper, David and Ian N. Gregory. 'Mapping the English Lake District: A Literary GIS.'

Transactions of the Institute of British Geographers. 36.1 (2011): 89-108.

Crampton, Jeremy W. *Mapping: A Critical Introduction to Cartography and GIS*. Oxford:

Wiley-Blackwell, 2010.

Cultural Atlas of Australia. Web. 20 March 2015.

Darby, H. C. 'The Regional Geography of Thomas Hardy's Wessex.' *Geographical*

Review 38.3 (1948): 426-43.

A Digital Literary Atlas of Ireland. Web. 20 March 2015.

Draper, Clarissa. 'Planning Your Novel with Google Maps.' *Clarissa Draper: Listening to*

the Voices. Web. 20 March 2015.

Editing Robert Burns for the 21st Century. N.d. Web. 20 March 2015.

Elwood, Sarah and Meghan Cope. 'Introduction: Qualitative GIS: Forging Mixed Methods

Through Representations, Analytical Innovations, and Conceptual Engagements.'

Qualitative GIS: A Mixed Methods Approach. Eds. Meghan Cope and Sarah Elwood.

Los Angeles: Sage, 2009, 1-12.

Evans, Andy and Tim Waters. 'Mapping Vernacular Geography: Web-Based GIS Tools for

Capturing "Fuzzy" or "Vague" Entities.' *International Journal of Technology, Policy*

and Management, 7.2 (2002): 134-50.

Farman, Jason. 'Mapping the Digital Empire: Google Earth and the Process of Postmodern

Cartography.' *New Media & Society*, 12.6 (2010): 869-88.

Google Lit Trips. 2006. Web. 20 March 2015.

Gregory, Ian N., and Paul S. Ell. *Historical GIS: Technologies, Methodologies and*

Scholarship. Cambridge: Cambridge University Press, 2007.

Gregory I.**,** Cooper D., Hardie A., and Rayson P. (2015). "Spatializing and analysing digital texts: Corpora, GIS and places" in Bodenhamer D., Corrigan J. and Harris T. (eds.) *Spatial Narratives and Deep Maps.* Indiana University Press: Bloomington, pp. 150-178.

Harris, Trevor M., L. Jesse Rouse and Susan Bergeron. 'The Geospatial Semantic Web, Pareto GIS, and the Humanities.' *The Spatial Humanities: GIS and the Future of Humanities Scholarship*. Eds. David J. Bodenhamer, John Corrigan and Trevor M. Harris. Bloomington: Indiana University Press, 2010, 124-42.

Hayles, N. Katherine. *How We Think: Digital Media and Contemporary Technogenesis*. Chicago: University of Chicago Press, 2012.

Hewitt, Rachel. *Map of the Nation: A Biography of the Ordnance Survey*. London: Granta, 2010.

---. 'Turn Around When Possible.' *The Guardian: Review*. 19 April 2014: 2-3

Jockers, Matthew L. *Macroanalysis: Digital Methods and Literary History*. Urbana-Champagne: University of Illinois Press, 2013).

JoyceWays. iTunes App. 2012. Web. 20 March 2015.

Kerouac, Jack. *On the Road*. Penguin Books Amplified Edition. iTunes App. 2011. Web. 20 March 2015.

Kerrigan, John. 'The Country of the Mind.' *Times Literary Supplement* 11 September 1998: 3-4.

Knigge, LaDona and Megan Cope. 'Grounded Visualization and Scale: A Recursive Analysis of Community Spaces.' *Qualitative GIS: A Mixed Methods Approach*. Eds. Meghan Cope and Sarah Elwood. Los Angeles: Sage, 2009, 95-114.

Kitchin, Rob, Chris Perkins and Martin Dodge. 'Thinking about Maps.' *Rethinking Maps*. Eds. Martin Dodge, Rob Kitchin and Chris Perkins. London: Routledge, 2009. 1-25.

Lang, Anouk. 'Canadian Magazines and their Spatial Contexts: Digital Possibilities and

      Practical Realities.' *International Journal of Canadian Studies*, 48 (2014): 213-32.

A Literary Atlas of Europe. 2015. Web. 20 March 2015.

LITMAP: Mapping Literature. N.d. Web. 20 March 2015.

Macfarlane, Robert. *Landmarks*. London: Hamish Hamilton, 2015.

---. *The Wild Places*. London: Granta, 2007.

Mapping the Lakes: A Literary GIS. N.d. Web. 20 March 2015.

Mitchell, Peta. '"The Stratified Record Upon Which We Set Our Feet": The Spatial Turn and

      the Multilayering of History, Geography, and Geology.' *GeoHumanities: Art, History,*

      Text at the Edge of Place. Eds. Michael Dear, Jim Ketchum, Sarah Luria and Douglas

      Richardson. Abingdon: Routledge, 2011. 71-83.

Moran, Joe. *On Roads: A Hidden History*. London: Profile, 2009.

Moretti, Franco. *Atlas of the European Novel, 1800-1900*. London: Verso, 1998.

Mulliken, Jasmine. *Mapping Dubliners Project*. 2012. Web. 20 March 2015.

OpenSpace Research Centre. N.d. Web. 20 March 2015.

Palimpsest: Literary Edinburgh. N.d. Web. 20 March 2015.

Piatti, Barbara and Lorenz Hurni, 'Cartographies of Fictional Worlds.' *The Cartographic*

      Journal. 48.4 (2011): 218-23.

Presner, Todd, David Shepherd and Yoh Kawano, eds. *HyperCities: Thick Mapping in the*

      Digital Humanities. Cambridge MA: Harvard University Press, 2014.

Placing Literature. Web. 20 March 2015.

Reuschel, Anne-Kathrin and Lorenz Hurni. 'Mapping Literature: Visualisation of Spatial

      Uncertainty in Fiction.' *The Cartographic Journal*. 48.4 (2011): 293-308.

Richardson, Douglas. 'Geohistories.' *GeoHumanities: Art, History, Text at the Edge of Place*.

      Eds. Michael Dear, Jim Ketchum, Sarah Luria and Douglas Richardson. Abingdon:

Routledge, 2011. 209-14.

Richterich, Anna. 'Cartographies of Digital Fiction: Amateurs Mapping a New Literary

   Realism.' *The Cartographic Journal*. 48.4 (2011): 237-49.

Saunders, Angharad. 'Literary Geography: Reforging the Connections.' *Progress in Human*

   Geography. 34.4 (2010): 436-52.

Schilling, Derek. 'On and Off the Map: Literary Narrative as Critique of Cartographic

   Reason.' *Literary Cartographies: Spatiality, Representation, and Narrative*. Ed. Robert

   T. Tally Jr. New York: Palgrave Macmillan, 2014. 215-28.

Spatial Humanities: Texts, GIS, Places. Web. 20 March 2015.

Speed, Chris. 'Walking Through Time: Use of Locative Media to Explore Historical Maps.'

   Mapping Cultures: Place, Practice, Performance. Ed. Les Roberts. Basingstoke:

   Palgrave Macmillan, 2012. 160-80.

Tally, Robert T. Tally Jr. (ed.) *Literary Cartographies: Spatiality, Representation, and*

   Narrative. New York: Palgrave Macmillan, 2014.

Thacker, Andrew. 'The Idea of a Critical Literary Geography.' *New Formations*. 57 (2005/6):

   56-73.

Thrift, Nigel. 'Driving Through the City.' *Theory, Culture & Society*. 21, 4/5 (2004): 41-59.

Turchi, Peter. *Maps of the Imagination: The Writer as Cartographer*. San Antonio, Texas:

   Trinity University Press, 2004.

Walford Davies, Damian. *Cartographies of Culture: New Geographies of Welsh Writing in*

   English. Cardiff: University of Wales Press, 2012.

Sharp, William. *Literary Geography*. London: Pall Mall Publications, 1904.

Wilmott, Clancy. 'Cartographic City: Mobile Mapping as a Contemporary Urban Practice.'

   Refractory: A Journal of Entertainment Media (2012). Web. 20 March 2015.

Zook, Matthew and Martin Dodge. 'Mapping Cyberspace.' *The International Encyclopedia*

of Human Geography. Eds. Rob Kitchin and Nigel Thrift. New York: Elsevier, 2009,

356-67.