Spatial Humanities 2016
Lancaster University
Lancaster, UK
15-16th Sept 2016

Programme

This major European conference is concerned with the use of Geographical Information Systems (GIS) and other spatial technologies in humanities research. The main aim of the conference is to explore and demonstrate the contributions to knowledge that these technologies enable within and beyond the digital humanities. The exciting programme includes participants speaking on all aspects of using GIS in humanities research from database development to applied research in which spatial technologies have made a contribution to understanding of the past.

Venue: Spatial Humanities 2016 is located in George Fox (building 55 on the campus map). Parallel sessions will take place in Lecture Theatre 1 (Strand A) and Lecture Theatre 2 (Strand B).

Wi-Fi access is available throughout Lancaster University campus using Eduroam or LU_Visitor.

Any enquiries please contact spatialhum@lancaster.ac.uk

Thursday 15th September

8.30 – 9.30	**Registration** (George Fox foyer)
9.15 – 9.30	**Welcome** (George Fox, LT1)

9.30 – 11.00   **Session 1**
Strand A   Critical Perspectives
Strand B   GIS and Text I

11.00 – 11.30   *Coffee and tea break*

11.30 – 13.00   **Session 2**
Strand A   Digital Landscapes of the Past I
Strand B   Countryside

1.00 – 2.00   *Lunch*

2.00 – 3.30   **Session 3**
Strand A   Digital Landscapes of the Past II
Strand B   Infrastructures

3.30 – 4.00   *Coffee and tea break*

4.00 – 5.30   **Session 4**
Strand A   3D Applications
Strand B   Mortality

Evening   *Optional Conference Dinner* (7pm) (Barker House Farm, Lancaster University, building 65 on campus map)

Friday 16th September

9.30 – 11.00	**Session 1**
Strand A	Literary GIS I
Strand B	Urban I

11.00 – 11.30   *Coffee and tea break*

11.30 – 13.00	**Session 2**
Strand A	Literary GIS II
Strand B	Urban II

1.00 – 2.00   *Lunch*

2.00 – 3.30	**Session 3**
Strand A	Literary GIS III: The Lake District
Strand B	GIS and Text II

3.30 – 4.30   *Final round-table (LT1)*

Session 1: Thursday 9.30 – 11.00

Strand A	Critical Perspectives	(Chair: Ian Gregory)

David Bodenhamer
Thickened Time, Charged Space: The Future of Spatial Humanities

Abstract
Mikhail Bakhtin recognized the disjuncture between Enlightenment logical-rational empiricism and Einsteinian relativity and phenomenology. His chronotope, the inextricable linkage of time and space, captured the ideal: "time, as it were, thickens, takes on flesh. … likewise, space becomes charged and responsive to the movements of time, plot and history…." The time-space link reminds us of the distinction between the observed and the observer; and it reflects the dynamic, interdependent, and relative context of all knowledge. But this view is missing from typical applications of GIS to the humanities, which in turn makes the technology less appealing to scholars who might profit from it.

The use of appropriately cast spatial technologies within history and the humanities—in sum, the spatial humanities—promises to develop a unique postmodern scholarship, one that accommodates the contingent, fluid, and ambiguous nature of human beliefs and actions. The goal is not to sacrifice the rational, logical, and empirical approach to knowledge that has been the hallmark of the humanities since the Enlightenment, but rather to complement it with different ways of discovery. For centuries we have defined history, in theory and practice, as the story of experience. Now we have an opportunity to experience the story: we can (re)live time-space in ways not possible before. This paper explores two issues: What impact has historical/humanities GIS made in our disciplines? What will be its future in a world of virtual reality and immersion? The paper also suggests an agenda for the future of this work.

Werner Stangl
HGIS de las Indias: Just "more of (pre-)national HGIS" and a revisionist counter-revolution against the "vision of the vanquished" or vital infrastructure?

Abstract
The proposed paper has two aims: first, to outline the technical/conceptual characteristics of my ongoing project, database and Web-HGIS (www.hgis-indias.net), an effort to reconstruct territorial expressions of Spanish colonial administrative rule in the Americas between 1701 and 1808, alongside with the "evolution" of settlements (in "colonial" conceptualizations), opening it up to discussion and improvement as long as it is funded.

I would like to actively stress the role and possible interpretations of our effort within the mine field of national, colonial, and subaltern discourses, where an HGIS-visualization can easily be (mis-?) taken for a monument of revisionism and 19-th century positivism that serves to "cement the power of the archive". From the other side of the spectrum, nationalist attacks on (or abuse of) our approach are to be expected. In an apologetic stance, I would try to show how a reconstruction done within the strict framework of systematization and determinism inherent to relational databases and GIS, may rather help to get a more complete understanding of idiosyncrasies of colonial spatial concepts.

On a more fundamental level, I would like to raise the question of how innovative our approach is, and whether (which) "innovation" should be the main guiding principle for such historical GIS infrastructure projects, or whether a more utilitarian justification of such projects should be encouraged (and if it is feasible to do so considering the patterns of research-funding).

John Stell
Qualitative Spatial Representation

Abstract
Mapping is a process by which the objects and events of spatial experience are located in another space: that of the map. The space used by conventional digital mapping in Geographical Information Systems (GIS) has two key features that deserve to be treated sceptically for the spatial humanities.

The first is that space is built out of points. A point has no physical dimensions and regions of space, such as the space occupied by a country, are conceptualized mathematically as infinitely many points. Although regions can be represented by boundaries using only finitely many points, the underlying ontology remains point-based.

The second feature is that the space of the map is a container into which things are located. The relational alternative to this is described by Smolin as "The relationships define the space, not the other way round."

The two features of conventional GIS are thus an ontological one (that points exist) and a methodological one (that map-space functions as a container). In this paper I review the disadvantages of these features for the Spatial Humanities and consider various alternatives that have been proposed. One particular alternative is Qualitative Spatial Representation and Reasoning (QSRR) which has been used in Artificial Intelligence. This allows statements, such as that one region touches another at the boundary, to be represented digitally without any commitment to where exactly they touch. The ability of QSRR to represent aspects of human spatial discourse as opposed to geometric ideals highlights its potential for the spatial humanities.

Robert C.H. Sweeny

Historical GIS research infrastructure, pedagogy and the evolution of computer technologies: the Canadian experience.

Abstract

Historical geography has a rich heritage in Canada, with major qualitatively different series of historical atlases in each of the two historiographic traditions, so it is not surprising that Canadian scholars were relatively quick off the mark in developing historical GIS projects. The first and most influential is Montréal, l'avenir du passé (MAP) an interdisciplinary research team formed by Sherry Olson of McGill (Geography) in 2000. Initially, MAP involved scholars from across the country in a collaborative effort to create a research infrastructure for the city of Montreal. Six dates were chosen based on the availability of high quality maps and temporally adjacent nominal series: 1825, 1846, 1880, 1911, 1949 and 2000. The first major product was the layer for 2000, created by stitching together thousands of CAD files from the city planning department. This map has been used extensively by epidemiologists. The three 19th-century layers were completed in 2010 and released on Cd-Rom. The turn of the century layers, for it has expanded to include a new map for 1903 linked to the 1901 census, is scheduled for release in the fall. MAP's technological choices, made in a largely pre-web environment, involved the linking of multiple relational databases, each based on a distinct nominal series, to high quality vector shapes files of the city. This permits "peopling" all the distinct objects (lots, buildings, streets, etc.) in the built environment by linking them to the diverse historical sources. This epistemological and ontological approach went on to shape the research strategies of the historical GIS for London, Ontario and Victoria BC. In Quebec, the interdisciplinary collective CIEQ based at Laval and Trois-Rivières developed a different approach, largely influenced by the Atlas historique du Québec experiences. This has led to the development of a more thematic approach to historical GIS, one focusing on particular aspects of life in the past: farming, parishes, hydro-electricity, or support systems for work with census returns for select urban centres.

In both approaches, technological choices were subordinated to research and pedagogical aims. Furthermore, the emphasis was on the relational nature of diverse databases conceptualized as stand-alone applications that would be loaded onto individual machines. The development of Web 2.0, Google Maps, tables in lieu of relational databases, networks and client/server architectures and mobile applications has completely changed the ways in which people are now thinking of historical GIS. In this shift from research infrastructures to applications what has been lost and what has been gained? Are the pedagogical and research objectives that stimulated these pioneering historical GIS projects still attainable in this changed environment?

Strand B	GIS and Text I	(Chair: Paul Rayson)

Bruno Martins

Quantifying affective responses to places with basis on text analysis

Abstract

We explored the application of text mining methods for discovering associations between places and affective responses. In particular, we developed approaches for recognizing place references in textual documents, and for rating places according to affective valence and arousal, with basis on average ratings for the words occurring in the surrounding contexts, together with affective norms collected for these words. To do this, we leveraged an existing dataset made available by Warriner et al., which has 14,000 English words rated on emotional significance. Warriner et al. used a crowdsourcing methodology to collect word ratings in terms of valence (i.e., the pleasantness of the stimulus) and arousal (i.e., the intensity of emotion provoked by the stimulus) and we extended this database to include a much larger set of words (i.e., practically all words occurring in the textual corpora that we wanted to study), through a method based on regression analysis and vector space representations for the words (i.e., we trained models to predict valence and arousal for new words, with basis on their similarity towards words rated in the dataset by Warriner et al.). The paper discusses our evaluation of the methods for recognizing place references and for rating places according to affective significance, and the results of applying the proposed methodology to different corpora.

Kristel Uiboaed, Maarja-Liisa Pilvik, Eleri Aedmaa & Siim Antso
Combining GIS and R for dialectal data analysis and representation

Abstract
Cartographic visualization has always been an integral part of dialectological research and data representation. There are a variety of tools available for these purposes today and this, along with the availability of larger datasets and corpora, has led to new methodologies and techniques being used for the visualization and statistical manipulation of dialectal data. The main aim of the current work is twofold, covering both aspects of dialectological data analysis: first, we show, how to combine different data sources (traditional atlas and corpus data); the second aspect is methodological and demonstrates, how one can benefit from integrating different applications, such as R (widely used statistical computing software) and geographical information systems (GIS), in order to process and visualize linguistic data. We illustrate this by creating interactive map applications with the help of R. Combining applications and converging various data sources provide us more flexibility to present and analyse the data and also enables us to obtain a more diverse picture of linguistic variation and the language phenomena we are interested in.

We discuss the potential of such approaches in terms of popularizing our field of research and making the available information more accessible also to the lay person. In addition, we touch upon the subject of how the two aspects of data analysis described above prompt each other in a cyclic manner: the availability of different data sources nowadays call for new technical approaches; at the same time, methodological pluralism offers a platform also for additional data collection methods, such as crowd-sourcing. References: R Development Core Team 2016, R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing., R version 3.2.4 edn, Austria, Vienna, http://www.r-project.org/.

James Butler
Alts, Abbreviations, and AKAs: Name-based issues in historical geospatial analysis: a Corpus of Lake District Writing case study.

Abstract
This paper will discuss the development process for a placename gazetteer tailored specifically to the Corpus of Lake District Writing resource. It will examine the reasons for (and the difficulties of) the inclusion of specialised data fields, and explore potential automated processes to assist in the identification of specific points that share names but hold major referential distinction (e.g. Coniston serving as a lake, town, surrounding mountain, or vale) – a significant issue within geospatial identification processes. Given the historical basis of the resource spanning three centuries (as well as a single source from the 17th), a number of variant spelling forms was to be expected – but the range found spanned a much wider array of onymic issues, not just limited to those mentioned in the paper's title. The localised gazetteer data represents a valuable means to study the extent to which different onymic forms might be expected in future resources of a similar nature, and introduce discussion into how automated processing considerations might best be developed to handle such a diverse range of name-based issues – particularly given the importance of accuracy for geospatial work.

Session 2: Thursday 11.30 – 13.00

Strand A   Digital Landscapes of the Past I   (Chair: Trevor Harris)

Jonathan Dugdale
Placing Pagodas: a new methodology for the geospatial analysis of Liao Dynasty religious architecture

Abstract
The Liao Dynasty (907-1125) have always been difficult to access from a historical perspective. Their own Kitan texts are few in number and the language is yet to be fully deciphered. The accessible accounts then, arrive almost entirely in the form of Chinese language sources. As a result of this, the Liao have primarily been explored as a peripheral dynasty within the Chinese national narrative rather than as an independent dynasty with political, cultural and religious agency throughout the East Asian region. My research hopes to redress this balance by exploring the extant religious architecture that the Liao and their contemporaries left behind – their pagodas.

This study uses GIS at two distinct levels. Firstly, at the macro, regional level it seeks trends (both chronologically and spatially) in the architectural development of pagodas and where the Liao are situated within those trends. This will allow us the view the Liao as part of an East Asian network of Buddhist exchange for the first time at this scale, incorporating evidence from Japan, Korea and Mongolia, as well as those pagodas situated in what is now China. Secondly, the positioning of the pagodas will be explored at a more localised level within the Liao to shed light on the impetus behind their construction and to hand back the agency to the Liao dynasts that is so conspicuously absent in the historical record.

Andrew Dunlop

Documenting Agricultural Landscape Change Using Historical Aerial Photographs within a HGIS

Abstract

Aerial photographs provide a robust source of data on agricultural land use patterns. To track landscape change in the northwestern portion of the North American Great Plains, a series of photographic prints captured in the 1930s, 1950s/60s, 1970s, and 1990s was digitally converted into a series of land inventory maps within a HGIS. The maps allow calculation of acreages under specific field management techniques such as strip-cropping, and also document other historical agricultural landscape attributes such as abandoned farmland, and soil erosion. Time series maps for case examples in Alberta, Saskatchewan, and Montana demonstrate the usefulness of using aerial photographic information to challenge conventional understandings of historical land use change.

Carina E. Guzman

The Cartographic Expression of the Aztec Tribute Scroll: Using GIS to Analyze a Mesoamerican Primary Source

Abstract

In this paper I will describe how I, a graduate student of geographic history with enthusiasm for GIS, developed a methodological strategy based on the application of GIS to the study of a Mesoamerican primary source of the early sixteenth century. The "Aztec Tribute Scroll" (Matrícula de tributos) is a codex attributed to scribes of the late Aztec fiscal apparatus. Each of its 36 pages has a series of toponymic glyphs and a list of goods that these "towns" (altépetl) paid in tribute to the Aztec capital, Mexico-Tenochtitlán.

In the 1930's Barlow located nearly all the altépetl in the source, established that each page corresponds to a geographic unit he called tributary province, and produced what is considered the first map of the Aztec imperial territory on the eve of the Spanish conquest (1949). Based on the same source, in 1993 Berdan et al. offered a notably changed map that projected the coexistence of differentiated types of provinces.

Following Gregory & Ell (2007), Dear et al. (2011) and von Lünen & Travis (2013) among others, I developed a cartographic series of the Matrícula de tributos in which I question both the theoretical and spatial assumptions made by Barlow and Berdan et al., including the very concept of an imperial territory divided into provinces. At the same time, the maps I produced contribute to ongoing studies in the Mexican academy on altépetl settlement patterns, and landscape articulation (Fernández & García 2006).

Candis Haak

Exploring the spatial configuration of a Medieval South Asian Sacred Landscape and the cross-disciplinary spatial literacy instructional tools it has provided.

Abstract

Medieval South Asian research that has considered sacred landscapes has focused primarily on elite strategies of asserting ideas of kingship and ideologies through the use of space, references to mythology, and city planning. However, to date, very little exploration of medieval Hindu architecture, town planning, or landscape design has been done in terms of corporeal experience. To explore this analytical void my dissertation research examines the built environment of the imperial capital city of Vijayanagara (Karnataka, India) throughout two distinct phases of the site: prior to imperial establishment and during its formative years when it first transformed into a ritual central place for kings, elites, and the military. Early on, the site functioned as a liminal pilgrimage space associated with death rituals and folk deities. Whence, through a range of mechanisms, the early rulers of the Vijayanagara Empire coopted the space-specific sacred resources of the site, thus transforming a fringe landscape into their own centralized base of power and legitimation.

My research relies on a database constructed in a geographic information system wherein landscape features, built and natural, are digitized, allowing for mythic, religious, literary, and historic data to also be spatialized. A parallel development is the creation of a Historical Spatial Literacy Tool - a teaching package for humanities-based undergraduate courses on South Asian history, archaeology, religion, and art history. This tool promotes higher order thinking and engagement with course subjects through projects based in interactive geographical information system interfaces, such as Google Earth or Esri's ArcGIS. The teaching package is highly adaptable to other humanities courses and has yielded positive results to date.

Paul Atkinson

Infant health in the nineteenth century countryside: evidence from digital analysis of newspapers

Abstract

What factors influenced the variation in rural infant mortality in nineteenth century England and Wales? My earlier work looking at district-level correlations between mortality and socio-economic variables has suggested a substantial role for maternal nutrition and health, and hinted at one for the social status of women: places where social conditions such as employment and agricultural type enhanced women's status may have been healthier for infants.

This does not lend itself to quantitative analysis. Instead, I look at qualitative evidence using the digitised text of the British Library Nineteenth Century Newspapers collection. My work seeks to detect and analyse discourses about infant mortality and possible health determinants from selected newspapers: two from rural areas with improving infant health (in the south and east), and two from areas where infant health showed few gains (in the north and Wales). I hope to find differences in discourse between the two zones.

Each newspaper title makes up a corpus of over 250 million words. I use corpus linguistic techniques such as concordance analysis, collocation and word frequency over time. The paper will describe research strategies and present results for fields of enquiry such as the welfare of children, women's work (in agriculture and more generally) and public health. This work aims to illustrate how the use of digital methods of 'distant reading' with large text corpora can help to bridge gaps in what is researchable using the statistical approaches which have previously characterised this field.

Thomas Thevenin & Christophe Mimeur

Measuring the network effect: from the graph theory to diversifiable geohistorical data

Abstract

This contribution explores the relationship between the growth of the French railway network and population change of around 36,000 French communes. This work is taking part in the controversial debate of the structuring effect of transportation infrastructure in social sciences. Since the promise to a change of "human existence" in the 19th century, all scientists are showing today the absence of automatic and homogenous effects of the network in the territorial development.

In this presentation we will discuss the process of acceleration along the railroads and explore the direction of the causality between network development and population change between 1860 and 1930. The speed has increased sixfolds thanks to the first locomotives, compared to slow movements on foot or by horse. We achieve this by using a HGIS of all the French railway network since 1837 and all the French census since 1801.

This work is part of the field of Spatial Humanities, as we aim now to give the priority to the production of new geohistorical knowledge rather than collect more and more spatio-temporal information. However this perspective requires to define new graph model to adapt some accessibility measures outside the HGIS but inside new frameworks which are able to deal with great databases over time and able to cover all the country. We confront firstly these new indicators to econometrical approach. Then we investigate a modeling approach which applied simple rules of network development, where the results will be compared to the real network.

Anthonia Ijeoma Onyeahialam & Michael Woods

GIS as a storytelling platform: Case studies from the rural communities

Abstract

With the emergence of web mapping technologies, maps have moved from the once static, fixed and non interactive media to that having multimedia content, text, images and photos that integrates the voices of the researched, allowing an interactive experience which leaves a reader with a feeling of having being part of the process. What we call getting more for less. Here we share our experience of using GIS as a story telling platform via a web mapping interface, as a front end to visualize and communicate narratives on globalisation (migration, remittances, food and agriculture and health) and its making and remaking of rural communities around the world.

We present findings from a case study using historical data on the global sugar trade sourced from open data catalogues integrated with qualitative data and multimedia content from primary research and archives dating as far back as the 20th century. We discuss the methodologies applied, the product, challenges and the way forward.

Global Rural Project is an ERC funded project led by Professor Michael Woods at Aberystwyth University.

Strand A   Digital Landscapes of the Past II   (Chair: Bruno Martins)

Wendy P. Kurtz
Virtual Cartographies: Mapping Historical Memory from the Spanish Civil War and Postwar Period

Abstract

Digital mapping makes it possible to create layers upon layers of culturally, socially, and historically relevant materials to the recuperation of historical memory in the Iberian peninsula. *Virtual Cartographies* is a digital map that combines data collected from the Spanish Ministry of Justice—which identifies over 2,600 mass grave found throughout Spain—, with a rich collection of multimedia texts directly related to specific gravesites [(including fictional narratives, documentaries, YouTube films, social media content, blogs, videogames, academic and online news publications, as well as historical documentation found through the Spanish National Historical archive (PARES - Portal de Archivos Españoles)].

Virtual Cartographies is the digital companion to my dissertation: *Mass Graves and Remembering through Performance: Historical Memory in Contemporary Iberian Literature, Film, and Digital Media*. By studying the performative aspect of the current disinterment and reburial process of mass graves dating back to the Spanish Civil War (1936-1939) and ensuing dictatorship of Francisco Franco (1939-1975), I reflect upon contemporary representations of loss and recovery of historical memory in Spain.

Mapping the dataset acquired from the Spanish government alongside media analyzed in my dissertation, I have built a prototype of *Virtual Cartographies*. Through the creation process, I have been exploring such topics as: how to display multimedia content on a map, how to designate spatial ambiguity, and pedagogical approaches to using digital maps in the university classroom.

Peter Pirker & Philipp Rhode
Mapping Time, Space, Meaning and Actors: Layers of Remembrance in the Cityscape of Vienna since 1945

Abstract

The paper is co-authored by Philipp Rode, Institute of Landscape Architecture, University of Natural Resources and Life Sciences, philipp.rode@boku.ac.at

Our paper will discuss the theoretical and methodological framework of the research project "Politics of Remembrance and the Transition of Public Spaces. A Political and Social Analysis of Vienna" which deals with the symbolic representations of political violence in Vienna during the time of Austro-Fascism and National Socialism. We will show how these visible signs (memorials, plaques, stumbling stones, exhibitions etc.) highlight the shaping of public spaces triggered by politics of remembrance since 1945. So far researchers of the project have collected data on more than 1,800 permanent symbols of remembrance which since 1945 had been located in the urban space of Vienna by a diverse range of protagonists from the public and private sector and several scales. We will present maps (using ArcGIS) and network graphs based on our quantitative research that show shifts and developments of public mnemonic processes with respect to actors, time, locations, and meaning and their being related to each other. In addition we aim to intersect our primary data with secondary data on demographic and socio-economic processes in some significant urban neighborhoods. In conclusion we aim to identify temporal, spatial, thematic and actors related patterns of remembrance that may represent distinctive memory regimes on municipal, national and transnational scales. Thus, we explain the urban space of Vienna rather in terms of a landscape of overlaying strata of remembrance which are simultaneously visible than as a Palimpsest.

Leif Isaksen, Rainer Simon, Andrew Lindley, Elton Barker & Pau de Soto
Early Geographic Documents and the Pelagios Commons

Abstract

Pelagios is an international initiative concerned with the development of Linked Open Data methods, tools and services so as to better interconnect the vast and ever-growing range of historical resources online. Specifically, it uses the Open Annotation[1] RDF ontology to associate place references within those resources to online gazetteers that offer URI-based identifiers for such places. The resulting graph is then exploited in a variety of ways to facilitate research, teaching and public engagement. The Pelagios 3 project addressed three critical challenges for stimulating activity in these areas. First, we developed user-friendly Web-based and Open Source software tools for the production and exploration of Pelagios LOD. Recogito[2] is a Web-based tool for the semi-

automatic annotation of place references. Peripleo is a spatio-temporal search engine for exploring the annotation data. Second we carried out much annotation both in house and by independent contributors. Over the course of the project 90 registered editors identified approximately 130,000 place references in 317 early geographic documents in 8 languages. Third, we developed a mechanism for enabling different gazetteers to be interoperable, allowing for interlinking between data from divergent traditions. In addition to these developments, this paper will report on the Pelagios Commons, a new phase of Pelagios which focuses explicitly on increasing its technical and social decentralization.

Strand B	Infrastructures	(Chair: Catherine Porter)

Eyal Ben Eliyahu
Digital Atlas of the Jewish culture in the Late Antiquity

Abstract
In this lecture I would like to introduce the digital atlas which is currently being prepared: diaspora.haifa.ac.il. This atlas should include all the literary sources and all the archaeological remains of ancient Judaism, by sites. Every site has links to other sites get engaged in the Greco Roman. At this stage, the platform is still in Google Maps, but I will are going to transfer in the next few weeks the site to GIS platform.
The lecture will deal with the uniqueness of the Jewish material and the necessity of integrating it with the rest of the sites operating under the auspices of Pelagios. Although now part of the Jewish material contained within other sites dealing with the Greek Roman world, there is no any database which use have the knowledge to locate and integrate most of the Jewish material, literary and archaeological remains from the Late Antiquity.

Rebecca M. Milligan
Military Aviation in Ireland

Abstract
This paper explores the use of geospatial technologies in digital mapping for use in First World War heritage projects through the creation of an online web app (WWI Aviation in Ireland, see - http://go.qub.ac.uk/ww1airfields). The web app was created using a map from the First World War showing the location of recorded aviation sites as they were on the 16th November 1918. The project brought to life the information contained on this map by creating an online educational resource. The existence of aviation sites during the First World War in Ireland is explored in the web app through the use of heritage science techniques and shows the importance and significance of the whole island of Ireland, during the First World War. Interest in First World War (WWI) heritage is growing in Ireland, however, access to sites is often difficult. The web app was built using Esri's Story Map Journal template. It uses aerial imagery and WWI site plans to show how these sites look today compared to 1918. The development of this web app has enabled those interested in aviation heritage to access information online and disseminate it to others easily. WWI Aviation in Ireland is an online web app which provides virtual access to these sites using geospatial technology as part of a collaborative effort between Queen's University Belfast (QUB) and the Ulster Aviation Society (UAS), developed through the AHRC-funded "Living Legacies 1914-18" Engagement Centre (see http://www.livinglegacies1914-18.ac.uk/).

Pat Seed
Georeferencing for preserving the integrity of original Maps

Abstract
In my recent article "A Map is Not a Picture" I demonstrated the problems with existing digitization practices in a handful of major European libraries. (Between Humanities and the Digital, ed. Patrik Svensson MIT Press, 2015). In this paper I propose two remedies for scholarly georeferencing.

Torsten Wiedemann
The STREAM project

Abstract
This paper presents the first stages of STREAM (A Spatiotemporal Research Infrastructure for Early Modern Flanders and Brabant), a newly funded project (2015-2018) by the Hercules Foundation (Belgium) to develop a spatial data infrastructure for early modern Brabant and Flanders. STREAM systematically collects a range of key data from a diversity of sources to provide us with a geographically comprehensive and long-run quantitative and spatial account of early modern society at the level of localities (parishes, villages, towns) regarding territory, demography, transport, agriculture, industry, trade, labour and social

structure, related to a tailored historical geographical information system (GIS) based on the Map of Ferraris (1778). This paper discusses some of the technical characteristics, possibilities and pitfalls of the data collection and in particular the construction of the spatial infrastructure for the pre-statistical era. In fact, the construction of a GIS for the period before 1800 is particularly challenging, as the early modern units of administration, be it ecclesiastical (parishes and bishoprics) or civil (counties, castellanies etc.) are different from the nineteenth-century administrative boundaries (municipalities, arrondissements and provinces). Yet, the creation of historical maps is indispensable for the articulation of new historical insights and a necessary prerequisite for detecting regional patterns and temporal changes.

Session 4: Thursday 4.00 – 5.30

Strand A	3D Applications	(Chair: Leif Isaksen)

Christopher B. Jones, Jonathan Slade & Paul Rosin
Semantic annotation of historic building models

Abstract
In recent years there has been a proliferation of 3D building models, with many detailed representations of significant historic structures such as cathedrals, castles and manor houses. The emphasis in creating these models has been on geometric and visual detail, with most such models containing little or no semantic annotation of the origins, architectural features and historical events associated with them. This paper presents progress on a project dedicated to semantic enrichment of 3D models to enable mobile and desktop applications to explore the cultural heritage and historical associations of a building, not just its appearance. The research to date has focused on automated categorisation of the architectural style of building features, primarily windows and doors. Computer vision methods are used to match a range of training examples of images of different styles of feature to the texture-mapped images of 3D models, in order to delineate the objects on the model and label them with classes derived from the descriptions of the various source images. At present these descriptions come from informative captions of images in social media repositories such as Flickr and are used for generic annotation. The next stage will match at the instance level, i.e. from images of particular buildings, to allow the unique characteristics of those buildings' features to be described. Future work will identify automatically associations between textual descriptions, from a wider variety of sources such as architectural guides and topographic narratives, and the corresponding buildings and components of a building to which they relate.

Andrew Lowerre
Comparing Anglo-Saxon Administrative Boundaries and Watersheds Using GIS

Abstract
Watersheds have increasingly been used as an interpretative framework for understanding various aspects of the landscape of Anglo-Saxon England. The focus of this paper is on the later Anglo-Saxon subdivisions of the shires – known as wapentakes in the Danelaw and hundreds elsewhere in England – and their relationships with hydrological boundaries derived from natural topography.
Using GIS, and building on spatial statistical techniques developed in ecology and epidemiology, it is now possible to examine systematically the association between Anglo-Saxon hundred and wapentake boundaries and the extents of watersheds. This analysis allows an assessment of the degree to which these administrative units 'match up' with watersheds over the whole of England. It also enables the identification of specific hundreds or wapentakes that show a statistically significant match with watersheds, as well as those that exhibit significant avoidance of watershed boundaries.
The aim of the paper is to explore how past human-environment relationships influenced the formation of territories. In so doing, it will showcase how the rich analytical capabilities of GIS can be used to investigate the territorial organisation of Anglo-Saxon England, and what that organisation may reveal about later Anglo-Saxon society.

Elizabeth E.R. Stewart
'The Royaltie of Sight': Using 3D-GIS to recreate contemporary 'prospects' and 'perspectives' of English designed landscapes, c.1550-1660

Abstract
In 1624, Henry Wotton highlighted the importance of "the Properties of a well-chosen Prospect", a concept of viewing landscapes, which Wotton dubbed "the Royaltie of Sight." Sixteenth- and seventeenth-century English designed landscapes were artificially

organised to optimise the 'prospect' whilst reflecting the landowners' individual perspectives. However, little analysis has been attempted into determining the extent and characteristics of 'prospect' and 'perspective' at specific sites. The destruction and modernisation of estate landscapes has hindered their analysis and reshaped perceptions of their appearance and development. 3D-GIS has the capabilities to change this.

In this paper, I will explain my use of GIS as a tool for producing 3D representations of estate landscapes, constructed using CAD and supported by historical research, fieldwork and community engagement. These virtual recreations will provide the geographical and historical context for GIS's visibility analysis tool called 'viewshed'. This will calculate landscape visibility from vantage points, predetermined by landowners within their estates. The results will be analysed alongside contemporary literature, owned and encountered by landowners, to explore how landscape design has been influenced by landowners' thoughts and ideas. For instance, 3D-GIS will help examine what these landowners' visual perceptions were and the extent of their individuality or conformity to contemporary fashions in landscape design and appreciation. This approach will be used to inform my thesis, which will progress research into sixteenth- and seventeenth-century English designed landscapes whilst demonstrating the benefits of 3D-GIS as a virtual environment, analytical tool, and database, which can subsequently assist professional, pedagogical and outreach projects.

Strand B　　　　　　　Mortality　　　　　　　(Chair: Paul Atkinson)

Isabelle M. Devos
Between Divergence and Convergence. Excess Mortality Across Flanders between the Seventeenth and Nineteenth Centuries

Abstract
In his book on regional cultures and mortality, Stephen Kunitz (2014) showed how current health differences between and within American states can run back centuries. Studies for the nineteenth and twentieth century have likewise acknowledged geographical variations within countries in Europe (Grimmeau, Deboosere et al., 2015; Kluesener, Devos et al., 2014; Van Poppel & Beekink, 2001; Woods and Shelton, 1997). Research for the early modern period, however, is scarce. Most studies on the preindustrial world, moreover, have dwelt upon the urban graveyard phenomenon (Sharlin, 1978; De Vries, 1984). Early modern cities are generally considered to be unhealthier living environments than the agrarian countryside, although Mary Dobson (1997) convincingly demonstrated the existence and impact of rural graveyards for early modern England as well. This paper links up with mortality studies that advocate a strong regional perspective and investigates regional and local variations within Flanders since the seventeenth century. Rather than using administrative boundaries as regional delimitations, we look for meaningful boundaries using a bottom up approach where mortality data are collected at the local level. By proceeding from the village level upwards and combining early modern and nineteenth century datasets (in turn STREAM and LOKSTAT), we examine the geography of mortality across Flanders at successive points of time: To what extent do we discern meaningful spatial patterns in mortality rates in early modern Flanders? Did these spatial (in)equalities increase or decrease into the nineteenth century? And can we identify certain areas with distinct historical health experiences?

Sebastian Klüsener
The Decline of Infant Mortality across Europe, 1910-1930

Abstract
While spatial aspects of the fertility decline in Europe have been investigated in great detail, an in-depth account of spatial aspects of the European mortality decline is so far lacking. This paper focuses on the infant mortality decline across Europe between 1910 and 1930. It has two main research questions. The first is to explore whether a spatially detailed account of the infant mortality decline allows us to improve our understanding of the determinants that contributed to improve the survival chances of infants. The second is to investigate spatiotemporal aspects of the end of the urban infant mortality penalty in Europe, which was an important feature of the spatial infant mortality variation up until the early 20th century. For the analyses we gathered geographically detailed infant mortality statistics that are linked to a European historical GIS-File. To account for changes in the administrative boundaries in the period under study, spatial interpolation techniques are used to derive estimates for a dataset dividing Europe into 500+ regions with time constant boundaries over the period 1910-1930. We apply mapping and spatial modelling techniques. Our findings show that the infant mortality decline was in the period 1910-1930 centred on countries in central Europe such as Germany, Austria and Hungary. This finding is remarkable considering that these countries lost World War I and faced very volatile economic and societal conditions in the 1920s. In addition, we also find evidence for a swift elimination of the urban infant mortality penalty across Europe in these two decades.

Catherine Porter, Paul Atkinson & Ian Gregory
Exploring health and place in nineteenth-century texts

Abstract
How we investigate the millions and often billions of words contained in large corpora is an on-going challenge to academics. In recent years, improved quality of OCR and an increasing number of digitisation projects mean many digitised historic texts, such as nineteenth-century newspapers, have been made available for research.

Geographical Text Analysis (GTA) is a unique methodological approach that introduces a new avenue in corpus research. By combining corpus linguistic methods with geospatial technologies GTA facilitates the spatial and temporal investigation of themes in texts and related statistical datasets. This paper presents the analysis of one nineteenth-century British newspaper and explores the language and geography of health and disease. Firstly, the discussion of disease in the newspaper, part of the British Library's Digital Collections, is analysed and compared with contemporary mortality data. Secondly, the data are mapped to illustrate the places the newspaper was discussing in relation to disease. The paper illustrates that by combining previously disparate techniques from corpus linguistics and geospatial research, we can gain new insight into media discussion of disease and health in nineteenth-century Britain.

Friday 16th September

Session 1: Friday 9.30 – 11.00

| Strand A | Literary GIS I | (Chair Joanna Taylor) |

Beatrice Alex, Claire Grover & Jon Oberlander
Literary Location with Latitude: Evaluating Geo-referencing of Literary Text

Abstract
The setting in most works of narrative literature include the geographic location in which the story unfolds and which helps to set its backdrop. In this paper we will describe work conducted as part of Palimpsest, a collaborative Digital Humanities project between the Universities of Edinburgh and St. Andrews, with the aim to mine the literary landscape of Edinburgh, the first UNESCO city of literature. We will present the results of a detailed evaluation of the Edinburgh Geoparser , a tool which was developed at the Edinburgh Language Technology Group at the University of Edinburgh, to recognise and geo-locate place name mentions in text. In Palimpsest, we adapted the geoparser to process literary text set in Edinburgh and surrounding areas. The results can be explored via the LitLong.org web interface which visualises the 47,000 geo-located excerpts extracted from 550 published literary works and set in 1,600 distinct locations.

The evaluation will examine both the performance of automatically recognising place name mentions in text and the accuracy of geo-resolution, which means resolving place name mentions to correct latitude and longitude coordinates. Both are important steps involved in the geo-referencing process. We will compare the evaluation on optically character recognised text and on manually keyed text to show how quality of input text affects the geoparser's performance. We will also present results for geo-referencing fine-grained locations, i.e. locations occurring within Edinburgh, including street and building names.

Meredith L. Goldsmith
"Is New York Such a Labyrinth?": Mapping Edith Wharton's _The Age of Innocence_ for the College Classroom

Abstract
This article explores the pedagogical benefits of GIS in undergraduate literary studies, based on an interactive map I created of Edith Wharton's The Age of Innocence (1920) using QGIS, an open-source mapping tool. In this presentation, I chart the process of developing the map and its implications as a test case of GIS-informed literary study. Through the process of data collection, map building, and critical reflection, I developed several key objectives. The first was to foster interdisciplinary inquiry: lying at the intersection of grid and landscape, of objective and subjective, maps—whether print, digital, or manuscript—are interdisciplinary at their core. Close examination of maps and mapping tools thus causes students and readers to question the way that maps construct, rather than simply reflect, our environment. The process of creating literary maps through GIS forces readers of literature to reconsider literary texts as data sources, prompting questions about the nature of humanities data and evidence.

Third, the map afforded different, unanticipated close readings, creating yet another angle of literary inquiry. Map building provides a way in which undergraduate students can see themselves as contributors to the creation of new knowledge.

Anouk Lang
Distorted Projections: Spatial Imaginaries and Desired Trajectories in Christina Stead's For Love Alone

Abstract
"In the part of the world Teresa came from, winter is in July, spring brides marry in September, and Christmas is consummated with roast beef, suckling pig, and brandy-laced plum pudding at 100 degrees in the shade, near the tall pine-tree loaded with gifts and tinsel as in the old country, and old carols have rung out all through the night."

From its opening lines, Christina Stead's 1945 novel For Love Alone establishes a sense of being "out of place", signalling to readers that the geography into which they are about to be immersed is distorted and unstable. As the narrative unfolds, the coming of age of the protagonist Teresa is marked by her longing to escape from parochial, provincial Sydney to the great metropolis of culture, London. But this is a trajectory whose fulfilment proves very different to its imagined anticipation, and it serves as a fictional rendition of the spatial and cultural displacement felt by many Australian writers of the twentieth century caught between the cultural authority of English publishers and literary standards, and the imperative to contribute to the project of building a national literature that could emerge out of the shadow of its European and English progenitors.

In this paper, I take the idea of distorted projection, and use it to think about the spatial imaginaries at work in Stead's text, which GIS software makes it possible to grasp in visual form, rather than being restricted to a linear format through the progression of a narrative. I consider both the value and limitations of the process of automated geoparsing (using the Edinburgh Geoparser), and suggest additional coding categories to better account for the different ways that place is invoked, and the effects of these spatial references. Miriam Posner has recently charged the digital humanities with using technologies that commonly "enshrin[e] Western European, Cartesian models of space" (http://miriamposner.com/blog/money-and-time/). Rising to her challenge that postcolonially-inflected digital humanities work should interrogate rather than reinforce the hegemony of projections that reinforce a view of the world from a dominant perspective, I use GIS tools to grasp Teresa's relationship to the physical geography of Sydney and the spatial imaginary of London, and thereby to make a case that GIS mapping can help to show how the text is carrying out an analogical act of distorted projection.

Maria Lopez Sandez
The Use of Geographical Information Systems to Draw Literary Maps of Compostela. Applications in the Educational Field.

Abstract
For three years now, a research group at the University of Santiago de Compostela has been working on the creation of literary maps of Compostela. In this application of GIS to literature with the focus on a city of remarkable symbolic relevance, problems emerged, mainly concerning the mappeability of uncertainty and the codification of recurrence and emotions. The point of departure was a very precise group of texts belonging to the subgenre of the "estudiantina", that depict the life of university students. In this paper, we intend to present the results, showing the achievements, the limits and the new challenges that emerged. We also intend to explore the applicability of such methods in education. Literary cartographies have proofed useful for the study of symbolic production and for tourism. Less attention has been paid to its applicability to education and, yet, the tools used so far for the elaboration of literary cartographies could be applied to the study of literary texts produced by students, so that the resulting maps and graphics could cast important information for the analysis of how students understand and deal with places, how they relate to the cities they live in and, thereby, reveal the constitution of their mental maps. For so doing, we will present a literary map of Santiago as a result of the literary texts produced by at least 40 teenagers, compare it with the literary maps of the project, and reflect on the imaginary of the city on the minds of current students.

Strand B	Urban I	(Chair: Robert C.H. Sweeny)

Sam Griffiths & Katrina Navickas
Combining GIS and space syntax techniques to explore the urban-scale distribution of political meeting places in Manchester c.1790 - 1850

Abstract
Katrina Navickas1, Sam Griffiths2, Panagiotis Mavros3
1 School of Humanities, University of Hertfordshire; 2 Space Syntax Laboratory, Bartlett School of Architecture, UCL Bartlett Faculty of the Built Environment; 3 Centre of Advanced Spatial Analysis, UCL Bartlett Faculty of the Built Environment.

This paper reports on an experimental interdisciplinary collaboration between a social historian and social scientists in the field of architectural research. It examines the conceptual and methodological issues that arise from importing the formal analytical methods of space syntax and spatial analysis in GIS, into a research area defined in the disciplinary context of social history: politics and protest in early industrial Manchester. The explorative phase of research involved the creation of a geo-referenced dataset identifying the location of meetings of a diverse range of political groups, including the Chartists, in Manchester c.1790-1850. The meeting-place data was extracted mainly from newspaper accounts and linked to spatial-morphological data derived from space syntax analysis of Manchester's mid-nineteenth-century street network. This can gauge, for example, whether meetings were more likely to take place on relatively busy or quiet streets. Spatial analysis in GIS was also used to compare the clustering density of meeting places across different urban locations. A key concern of the researchers, in the application of quantitative mapping methods to historical data, was to develop a better interdisciplinary understanding of what might reasonably be added to the interpretative framework of urban-based protest movements already available to historians of this period. Analysing the structure of a historical street network enables historical research to describe the spatial, as well as the social, relationships of a city; in this case of political meetings. The study also raised productive questions about the role of historical context in the interpretation of spatial data.

James A.G. Perry
A Spatial Analysis of the Foreign born Population of London

Abstract
The use of digital humanities approaches to questions of migration within historical contexts is a somewhat developing field, particularly with regards to England. This paper will explore the distribution and behaviours of foreign-born migrants around London, with a particular focus upon the Whitechapel area. This neighbourhood of London was an area that had long been associated with immigrants, having been home to numerous foreign-born groups over time, including the Irish, Germans, and a large community from Eastern Europe. Using Geographic Information Systems (GIS), this study will analyse the distribution of the foreign-born population within London during the period 1901 and 1911. Corresponding aggregate data from the Integrated Census Micro data (I-CeM) dataset will be used to provide a contextual understanding of the socio-economic activity of such migrants. My paper will argue that there is much concerning migration into England and Wales that remains to be explored, particularly with the development of digital humanities. Furthermore, this paper will argue that as historians utilise digital approaches, there is every chance that underlying migrant behaviours can be identified and understood. The existing literature has established that London was a hive for migrant activity, and it served as an important hub for burgeoning transnational migration networks. Consequently, through the adoption of analytical spatial techniques, a clearer picture of the distribution and levels of integration and segregation amongst the foreign-born population in London can be established.

Anne Winter & Hilde Greefs
Trajectories and flows during the 'mobility transition': Spatial recruitment patterns of foreign newcomers to Antwerp and Brussels, 1850-1880

Abstract
This paper aims to investigate changes in the spatial recruitment patterns of single foreign migrants to the Belgian cities of Antwerp and Brussels between 1850 and 1880, by deploying quantitative and GIS analysis to an existing database of c. 10,000 foreign newcomers recorded in the so-called local foreigners' files in a period when both the scale and distance of international migration was increasing markedly. By comparing newcomers' places of birth and previous residence with age, occupation and income, we can test earlier hypotheses on the so-called 'democratization' of long-distance migration in this period and compare patterns of stepwise and direct migration with the proliferation of new overland and waterway transport connections. Although parts of this database have been used in the context of earlier migration research, its possibilities have never been exploited to the full since so far no GIS-analysis was applied. By geo-referencing and mapping all the different place names mentioned in the files, we will be able to both retrace individual migration trajectories and compare flows at the aggregate level, which will greatly enhance our insight into the spatial dynamics of recruitment during this period of the so-called 'mobility transition'. Comparing between the booming port town of Antwerp and the capital city of Brussels, will moreover enable us to evaluate the respective influence of local opportunity structure on the one hand and of urban transport connections on the other hand on the changing spatial recruitment patterns of international migrants.
Anne Winter (VUB) & Hilde Greefs (University of Antwerp)

Strand A   **Literary GIS II**   **(Chair: Christopher Donaldson)**

Santiago Perez Isasi
Digital Map of Iberian Literary Relations: Some theoretical and methodological considerations

Abstract
In this paper I will present the theoretical and methodological considerations that support my ongoing project "A Digital Map of Iberian Literary Relations (1870-1930)", funded by the Science and Technology Foundation of Portugal. This project aims at offering a visual and chartographical representation of the literary and cultural exchanges that took place in the Iberian Peninsula by the turn of the 19th to the 20th century.

This project is located mainly in two different academic and epistemologica fields. On the one hand, it is the result of ongoing research on Iberian Studies, a field that has seen a rapid growth in the past decades, with contributions from both sides from the Atlantic. Iberian Studies are based on the reconsideration of the Iberian Peninsula as a complex, dynamic and multilayered cultural system, with rich exchanges processes between the different subsystems that compose it.

On the other hand, this project takes advantage of the development of Geographic Information Systems and other chartographic representation tools developed within Digital Humanities. Projects such as "Mapping the Lakes", the "European Literary Atlas" or, more particularly in our case, the "Space of Slovenian Literary Culture", offer valuable precedents in the way in which geography, digital chartography and literary studies can contribute to each other's benefit.

Blevin Shelnutt
Broadway, Print Capital: Mapping the Publishing District in Mid-Nineteenth-Century New York

Abstract
This paper and digital project combine techniques of literary analysis, cultural studies, book history, and geography to trace how the material conventions of a specific place shaped literary culture at the threshold of industrial publishing. During the 1840s and 50s, the six-block area south of Manhattan's City Hall Park generated more printed texts than anywhere in the United States, and the adjacent stretch of Broadway was the continual source of content for newspapers, novels, reform tracts, and other diverse genres. Both site and subject of what was emerging as the nation's modern print capital, Broadway became a touchstone for literary reflection on the social and moral implications of mass culture, newly visible through the avenue's dense traffic and the expanding publication of printed texts. Using ArcGIS, GoogleEarth, and GoogleSketch-Up, I am developing 1) an interactive map that charts the locations of the offices and tradesmen who made up New York's publishing district from 1836 to 1860, and 2) a three-dimensional visualization of Broadway during the period. With these tools, I illustrate not only the importance of Broadway to print culture in nineteenth-century New York (whose geography has tended to be imagined around Nassau, Fulton, and Ann Streets), but also, and more broadly, the operation of a very particular locality as setting and inspiration for certain cultural forms. By grounding print culture at precise intersections and buildings, this project models new methods for understanding the material cultures of literary production and for applying the tools of spatial analysis to literary history.

Patricia Murrieta-Flores
'Space, the final frontier': Towards the analysis of non-locational places and spaces in Digital Humanities

Abstract
The success of the field of Spatial Humanities in the last few years represent a major achievement for the Digital Humanities. The use particularly of Geographic Information systems for the analysis of places as depicted in textual corpora, has proven already of great use in fields such as History, Literature, and Archaeology. Going beyond simply mapping a distribution of places mentioned in texts, the Humanities have entered the realm of Spatial Analysis, achieving a significant milestone by creating an innovative approach and novel ways of thinking about humanities research. Although this is without doubt an important way forward, a great challenge has remained. Places and spaces that we cannot necessarily locate in a map, often play a major role in historical and literary narratives. This is certainly the case of imaginary places or locations for which no reference to the real world is offered in the corpus.

Therefore, how can we analyse places that have none or almost no correlation with the real world, using the same combination of macro-analysis, distant and close reading approaches?

Looking to address this issue, this paper will discuss the challenges behind, and propose possible ways forward in the creation of a more holistic approach in the Spatial Humanities,for the analysis of place and space in corpora.

Strand B	**Urban II**	**(Chair: James Perry)**

Andrea Ballatore & Selena Daly
The Avant-garde in Space and Time: Centers and Peripheries of Italian Futurism

Abstract

Founded in 1909 and based in Italy, Futurism was Europe's first avant-garde movement. While much research has been carried out about the movement's manifestations in specific locales, a pan-Italian examination of its over time and space has been lacking. This paper will present the preliminary findings of a study of Futurism in Italy, which utilizes digital humanities tools, specifically historical geographic information systems (HGIS), to quantitatively investigate the development of the movement during its 35-year lifespan (1909-1944). The paper will present an analysis of Futurist cultural activity (exhibitions, publishing, and theatre) in Italy, highlighting the interactions between its shifting centers and peripheries. The data will be sourced from letters, periodicals and Futurist ephemera. Received ideas about the nature of the movement's development will be interrogated empirically, and the paper will seek to answer questions such as: In what ways did Futurist activity spread around Italy? How did the central hierarchy communicate with peripheral groups?
This is the first time HGIS has been applied to the study of the avant-garde and Futurism. We will start from the case study of Futurism to review the nature and type of historical data that can be successfully handled and represented by HGIS. From a practical perspective, we will discuss the tools that we adopted for the task (e.g. QGIS and R), pointing out their advantages and limitations.

Ewa Drygalska
Moviegoing and (deep) maps

Abstract

As Les Roberts and Julia Hallam argue, one of the problems with spatial paradigm in Film Studies is the lack of basic definition of what cinematic cartography or spatial historiography actually mean, and each might be applied in ways that are very different from each other. In the emerging field of geography of cinema, a significant quality of research has been done in the areas of film production, distribution, exhibition and audience. Research questions here vary from the issues of access to culture and film, based on copy accessibility, price, distribution patterns, language, exhibition practices, as well as race and gender. From the theoretical point of view I am particularly interested in the tension between the recently picked up concept of "deep maps" and what M.Delanda and later B.Latour called "flat ontologies", from the perspective of post-representational cartography proposed by John Pickles and others. In short, deep mapping is built on structured, rich, multilayered, narrative view of a small area of the earth. Flat ontology, on the other hand is non-hierarchical and refuses to reduce its objects either by dissolving the object in something deeper or as mere effects of actions, events, language, signifiers or economic forces. I will like to discuss my map project on film. Going through various type of data mainly: maps, statistics, censuses, demographic reports as well as oral history, my aim is to understand a complex relations between Los Angeles and its African American citizens/moviegoers.

Antti V.A. Harkonen
Using spatial segregation indices to measure religious segregation: the case of Vyborg 1880—1920

Abstract

The segregation of different demographic groups has long been a concern for social scientists. Indices are a common way to summarise complex phenomena into manageable numbers. One common problem with segregation indices is the fact that changing administrative units will affect most indices. One way to prevent this is to use spatial segregation indices based on raster surface created with kernel density estimation.
The city of Vyborg lies in Russia near the Finnish border. The town was originally founded by the Swedes during the late medieval period. Russians conquered it during the Great Northern War in 1710. In 1812, after Russia had conquered Finland from Sweden in 1809, Vyborg was attached to the autonomous Grand Duchy of Finland. After Finland declared her independence in 1917, Vyborg was one of largest cities until it was ceded to Soviet Union during WWII.
During the decades preceding WWI, Vyborg grew rapidly due to industrialisation. In the beginning of 19th significant portions of the townspeople had been Russians or Orthodox Finns, while most of the newcomers were Lutheran Finns. From 1880 on, the census documents began recording followers of each faith by household. This data, combined with digitized map, can be used as basis for analysing whether the population groups were segregated.

I calculate several indices with several parameters to exclude single errors. The results should give some evidence of the level of spatial segregation and its development between 1880—1920. The analyses are carried out using Python 3.5.

Session 3: Friday 2.00 – 3.30

Strand A   **Literary GIS III: The Lake District**   **(Chair: TBA)**

Christopher Donaldson
Mapping Aesthetic Terminology in Historical Writing About the English Lake District'

Abstract
This paper models the implementation of an interdisciplinary approach to the examination of historical corpora. It presents a case study that combines corpus analysis, automated geo-parsing, and GIS technology in order to investigate the geographies underlying some of the key aesthetic terminology historically used in writing about the English Lake District. The focus of this investigation is a 1,500,000+ word corpus of writing about the Lake District that comprises works published between the years 1622 and 1900. The paper exemplifies how a hybrid geographical and corpus-based methodology can be used to study historical relationships between landscape writing and physical geography.

Brian Gutierrez
Mapping William Wordsworth's Conspicuous Consumption in The Prelude

Abstract
This paper reports on research performed as part of the '"Residence in London," a Cartographic Journey' project, which is building an urban complement to David Cooper and Ian Gregory's 'Mapping the Lakes' (MTL) project by composing an interactive digital map plotting William Wordsworth's walking route detailed in his autobiographical poem *The Prelude* (1805/1850), particularly Book Seven, 'Residence in London'. Similar to the MTL project, the aim of this research is not simply to visualize place-names within a poem, but to 'open up methodological and critical space for the ongoing development of literary GIS.' At the same time, however, this project differs from the MTL project in that its principle function is to use geospatial visualization to demonstrate that Wordsworth visited Joseph and Josiah Boydell's Shakespeare Gallery (in London) given the walking route mentioned in *The Prelude*. Such a visualization will function as supplementary textual support in making the claim that the dramatic structure of Wordsworth's gothic drama *The Borderers* (1797/1842) is informed by reading Shakespeare through theatrical portraiture art. This map and the associated spatial data, will be built within Neatline, a dynamic interactive platform for telling spatial stories in time that is a plugin for Omeka, designed with the intention that scholars and students can trace the spatial stories of the literature under consideration, and experience the impact of key cultural spaces.

Margaret Linley
Books, Ecologies, Migrations: Placing the Lake District Online

Abstract
If a growing range of scholarship hopes to make locative claims for literary-historical work, then digital tools for describing, interrogating, and visualizing space and place have a new salience and utility. My paper will explore this hypothesis through Lake District Online, a digital humanities research project based on a collection of largely Victorian-vintage English Lake District travel books that have made their way to Vancouver, Canada and are currently being digitized and remapped according to new metadata standards and digital frameworks. The larger question framing the discussion is: in what ways might the physical migration of a rare book collection from the English Lake District to the Canadian Pacific Northwest inform a second migration across media platforms? This paper describes and evaluates some of the research methods we are applying in the project to analyze processes of localizing space, and argues that the dynamic scales of reading enabled by spatial humanities have the potential to reconfigure the way we 'place' our texts ecologically.

Joanna Taylor

Listening in the Lakes: Mapping Sound in Lake District Tourist Literature, 1750-1900

Abstract

Cannon-fire was a regular occurrence in the Romantic Lake District; the firing of cannons was an early tourist attraction, and visitors to the region continued to be much amused by the echoes generated by the loud noise until well into the nineteenth century. By 1814 such events were popular enough that Robert Southey could remark sardonically of the cannon kept at Lodore that 'English echoes appear to be the most expensive luxuries in which a traveller can indulge'.[1] The echo, and its quality or quantity, became a means by which to evaluate the worth of a place for the tourist's experience. This paper uses corpus linguistics and GIS methodologies to investigate the place-making role of sound in Lake District tourist guides in the century and a half after the region's 'discovery'. In the past decade, sound has been increasingly recognised as fundamental for archaeological understandings of historical spatial experience, and the phenomenological turn in archaeology has encouraged this kind of study.[2] That is not the case in literary studies. In both archaeology and literature, however, there is an acknowledged gap between GIS and the representation of lived experience. This paper uses the representation of sound in Lake District literature as a case study to explore ways in which GIS can be used to deepen close readings of literary works and, furthermore, as a tool for exploring historical lived experiences of this canonical landscape.

Strand B	GIS and Text II	(Chair: David Bodenhamer)

Olga Chesnokova, Ian Gregory & Ross Purves

Landscape descriptions in historical and modern landscape corpora

Abstract

In this paper we compare landscapes descriptions from a corpus of 18th–19th century authors describing the Lake District with contemporary descriptions captured through so-called User Generated Content (UGC) in the form of georeferenced images contributed by many individuals. We postulate that UGC provide us with a novel way of exploring modern experiences of the landscape.

We will present the results of preliminary work on three questions. Firstly, we will present a range of methodological approaches, such as topic modelling and spatial similarity measures, to characterising landscape based on georeferenced information, either in the form of UGC or a georeferenced corpus. Using these methods we will then explore two content-related questions. The first of these concerns comparing descriptions over large regions – for example, how similar are modern and historical descriptions of the Lake District as a whole, or when we divide the region into meaningful units (e.g. comparing the Central Fells to the rest of the Lake District) and, where differences exist, what form do these take. Finally, we presume that in both historical and contemporary sources what is described is often seen but not directly experienced. In the case of UGC the coordinates associated with information are typically directly related to the photographer's position, whereas in travel diaries vistas are georeferenced based on toponyms found in the landscape (and not only the location of the beholder). Thus, we will explore whether these differences in position associated with information influences the ways in which descriptions vary at local scales within the landscape.

Trevor M. Harris & Jim Schindling

Deepening Historical GIS: an integrated database solution for linking people, place and events through unstructured text

Abstract

Primary historical source materials represent a very real challenge to GIS. In contrast to modern datasets where tabulated and structured data usually correspond neatly to fixed boundary units, primary historical source materials occur in predominantly unstructured text format. In these instances, people, events, and places must be unraveled from handwritten scripts and, if possible, loosely linked and coupled to some form of mapping. In this presentation a database solution to handling primary source material is presented that enables the original text and its translation to be ingested into the system and for people, familial relations, events, and images to be linked and queried in real time. In particular, the system links these databases via toponyms to a tightly coupled mapping interface. The system enables thesauri of people's names and places to be created on the fly and allows levels of confidence to be assigned by the investigator to these matches. Full database and toponymic search and linking capability is enabled. In addition, a mobile app supports investigation in the field to both access the database and to contribute additional data and information in real-time to the system. Through the use of this dynamic database coupling and union to a map interface it is proposed that the system provides a powerful platform for use with primary unstructured source material and contributes to a deeper mapping and understanding of historical place.

Laura Paterson

Geographical Text Analysis: Discourses of Poverty and Place

Abstract

The Discourses of Distressed Communities project is based in the ESRC Centre for Corpus Approaches to Social Science (CASS) and strives to show how corpus linguistics can be used across different disciplines. This project in particular uses Geographical Text Analysis and multi-million word corpora to produce maps of the UK to visually represent the locations used by the press when discussing poverty. Our analysis focuses on texts from two contrasting news sources - the *Guardian* and the *Daily Mail* - published between 2010 and 2015. We compare the maps generated using linguistic data with census statistics and other quantitative measures of poverty in order to measure how well the two types of data correlate. This paper includes some of our preliminary linguistic and cartographic results and demonstrates the suitability of Geographical Text Analysis for investigating the discourses surrounding social problems.

Final round-table: Friday 3.30 – 4.30 (LT1)

This final round-table will reflect on future directions for spatial humanities research. The panel will be chaired by Ian Gregory (Lancaster University) and includes Sally Bushell (Lancaster), David Cooper (Manchester Metropolitan University), Patricia Murrieta-Flores (University of Chester), Brian Gutierrez (University of Washington), Kieron Smith (Cardiff University) and Elizabeth Stewart (University of East Anglia).