

## **Cartography I: Mapping deeply, mapping the past<sup>1</sup>**

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### **Abstract**

This cartography review examines current developments in geohumanities and work on so-called 'deep maps', as well as considering work building on artistic practice and literary mapping traditions. I discuss developments in the history of cartography and consider the value of old maps in relation to the interests of human geographers and wider notions of popular geography. More engagement with these areas of mapping practice could help bridge the long standing disconnect between much of contemporary human geography and more mainstream cartographic research.

**Keywords:** History of cartography, old maps, geohumanities, deep maps, digitisation

### **Introduction**

2015-2016 has officially been the *International Map Year* (<http://mapyear.org>), with a large series of events and activities organised in many countries under the direction of the International Cartographic Association (ICA), including the production of an edited book *The World of Maps*. The aim was to foster wider engagement with maps, yet I suspect that most readers of this journal would not have noticed because of the persistent disconnect between the mainstream academic-applied cartographic research and the contemporary

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concerns of most human geographers (Dodge and Perkins 2008; Hennig 2015). Despite this disconnection, creative mapping is growing in geographical practice along with more artistic aesthetics (cf. Straughan and Hawkins 2016). There are interesting developments in academic cartography, and by other humanities scholars, that are worthy of note by human geographers, including the growth of geohumanities work, the popularisation of historical cartography as well as launch of two new map-focused journals.

The first, the *International Journal of Cartography* can be seen as a rather 'top-down' attempt by the ICA to reposition itself and raise its profile with a formal peer-review journal (<http://www.tandfonline.com/loi/tica20>). The second new outlet comes from a much more anti-establishment 'bottom-up' direction with the agenda of the *Livingmaps Review* being to "strengthen democratic politics by documenting and disseminating radical participatory forms of cartography, opening up new spaces and forms of creative representation in and against the mappings of power" (Anon. 2016, p1). The main driving force behind *LivingMaps* is Phil Cohen "an urban ethnographer turned cultural geographer", who has successfully galvanised a whole series of mapping events and seminars over the last couple of years. It will be interesting to see how far these new map focused journals can attract enough high-quality papers from human geographers and compete against already well-established outlets (such as the *Cartographic Journal*, *Journal of Maps*, *Cartographica*, *CAGIS*, and *Cartographic Perspectives*) and other allied GIScience periodicals.

### **Geohumanities and Deep Mapping**

In terms of new periodicals of relevance to those interested in social and cultural aspects of cartography, last year saw the launch of a new AAG-sponsored peer-review journal *GeoHumanities*. Novel mapping approaches and artistically inspired ways of envisioning

place and people's lives are central aspects of the research the editors wish to publish (cf. Cresswell et al 2015; Dear 2015). Geohumanities (or spatial humanities) is a growing transdisciplinary research agenda, one that makes much use of cartographic displays and more broadly visual mapping as a mode of enquiry and creative way to communicate meaning to different audiences. It has been characterised as a potent creative convergence, in which Dear et al (2011, p3), key promoters of the agenda, claim a "kaleidoscope of intellectual and artistic outputs is currently emanating" including "the hybrid maps of radical cartographers and the artistic creations of experimental geography". Although the centrality of cartography to praxis is not unproblematic, with Dear (2015, p.13) expressing concern that too many humanities scholars "regard a map as the end-state of research, whereas geographers tend to treat it as a beginning" and that they often fail to "critically reflect on data limitations and error, or the silences involved in cartography representation". To help counteract this tendency Dear (2015) half-jokingly says the motto 'no more free passes for pretty maps' should be adopted in when judging geohumanities publications. Crang (2015, p.315) recently offered another corrective view to the overly upbeat narratives around the novelty and possible methodological impacts of geohumanities, noting "that digital media sometimes reanimate older debates and issues not only in what we study but how we do so, and their significance may be less in new techniques than altering the general tools of our trade."

While some more explicitly cartographic work in geohumanities has been rather hidebound by existing GIS software and established notions of layered historical data (e.g. Gregory and Geddes 2014; Travis 2015), there is very substantial scope for creative methodological development as shown by Knowles and colleagues (2014, 2015) notion of 'inductive visualization' applied to mapping Holocaust survivor testimony. Besides the

cartographic frame and GIS emphasis, the geohumanities agenda can also be allied to established notions of literary cartography and poetic mapping – apropos the influential work of Moretti (1998). There have been several fascinating new additions along this path including DeGraff and Harmon's (2015) *Plotted: A Literary Atlas*, which presents new mapping of the fictive spaces of classic stories like Beckett's *Waiting for Godot*. Also of interest is Whitfield's (2015) richly visual reconsideration of the Shakespearean canon through historic cartography, paintings and drawings. Allied to the literary mapping approaches are attempts to 'map' mythical memories and uncanny traces latent with contemporary space (Parker 2015) and even to design cartographies of the imagined dream space inside people's head (Enescu et al 2015). In these approaches maps often morph into and through wider ranges of aesthetics for space and artistic encounters with place (cf. diverse creative contributions in Dear et al 2013; Straughan and Hawkins 2016).

The most cognizant work for this review, under the broad banner of geohumanities, are the range of recent papers and edited books focus on 'deep mapping', asserting to be undertaking a methodological and intellectual move beyond planar cartography to a more complex spatial-temporal assembling of multiple kinds of evidence and media. Deep mapping aims to evoke the richness of small places and different kinds of experiences and emotions they can engender. From one origin point in William Least Heat-Moon's book, *PrairyErth* (1991), deep mapping is kind of topographic story-telling that captures the spirit of a place and has a political agenda. Further work in this vein includes Annette Miae Kim's *Sidewalk City* (2015) that imaginatively maps the particularities and micro-politics of street life in Ho Chi Minh City, Vietnam (see also the eclectic, inventive range of contributions in Bodenhamer et al., 2015 and Presner et al. 2014). Deep mapping is also the overarching metaphor for an extensive themed issue in the open journal *Humanities* edited by Les

Roberts (a media theorist who has done interesting work mapping cinema; cf. Hallam and Roberts 2014). Roberts' call sought contributions "tapping of a layered and multifaceted sense of place, narrative, history, and memory" ([www.mdpi.com/journal/humanities/special\\_issues/DeepMapping](http://www.mdpi.com/journal/humanities/special_issues/DeepMapping) ) and the contributions encompass many readings of place and approaches to mapping, including cultural cartographer and map critic Denis Wood's (2015) deep mapping project that exposes the transformational processes that bring neighbourhoods into being as rich lived places. Bissell and Overend (2015, p. 478) offer an interesting cartographical analysis of emotional textures of daily commuting in rural Scotland, in which their method "attempts not only to map—to record, document, represent—but also to engage with our commutes actively through a performative engagement with landscape; mobilising a variety of experiences that work against the 'desensitising' systems of contemporary mobile life."

### **Mapping the Past and Popularisation of Historic Cartographies**

This section considers the value of historical dimensions to cartography through recent work that identifies and interprets maps artefacts made in past contexts, seeks to popularise access to this material, and enrolls old maps as empirical evidence (particularly in the field of geopolitics).<sup>2</sup> My focus on the past is prompted partly by a major new publication from the History of Cartography Project, *Cartography in the Twentieth Century* (Monmonier 2015).

Historical studies of cartography are long established but remain a niche area of scholarship. Much of its empiricist work on pre-modern map artefacts is tangential to concerns in the mainstream of human geography. Yet the massive reference books

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<sup>2</sup> For cogent review of earlier material along this line, see Offen's 2012 report on historical geography.

produced by the History of Cartography Project<sup>3</sup> are important for geographers interested in maps and broader aspects of spatial representation and visual culture. The project was started in the early 1980s by Brian Harley and David Woodward at the University of Wisconsin-Madison. The aim was to compile comprehensive narrative histories of cartography that would encompass “all forms of maps and to consider how those maps related to broader cultural and social issues” (Edney 2015, p. 615). *Cartography of the Twentieth Century* is its latest output<sup>4</sup>, a monumental encyclopaedia over 2,000 pages printed as two separate books. Many years in development, it contains much authoritative material of relevance to geographers, creative mapmakers and designers, historians and other scholars interested in visual culture in the last century. The managing editor Mark Monmonier, one of the leading voices in academic cartography for decades<sup>5</sup>, has done an excellent job in selecting a small army of expert authors, including leading human geographers. The breadth of coverage in the more than 500 separate entries is impressive, particularly on the science of cartographic data collection, developments in the means of production and dissemination of print maps, and detailed descriptions of the underlying technological developments that have profoundly changed mapmaking. It also contains insightful entries on social, cultural and political aspects of mapping that are of interest to human geographers including Haft’s *Literature and Cartography*, Culcasi’s *Counter Mapping* and Brown’s entry on *Colonial and Imperial Cartography*. It is undoubtedly an important reference source in the history cartography but with relevance to contemporary mapping.

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<sup>3</sup> Volumes were published in 1987, 1993, and in 2007, *Cartography in the European Renaissance* came out. They are expertly written and published by the University of Chicago Press, who have made the full content freely available online, [www.press.uchicago.edu/books/HOC/index.html](http://www.press.uchicago.edu/books/HOC/index.html) .

<sup>4</sup> Two additional volumes, *Cartography in the European Enlightenment* and *Cartography in the Nineteenth Century* are in preparation.

<sup>5</sup> See his recent autobiography (Monmonier 2014).

In other connections between past and present cartographies, there are noteworthy recent attempts to challenge the 'maps and chaps' ethos that permeates cartographic history. This resonates with current gender concerns around the basis of new kinds of digital spatial media, biased crowd-sourced geographic information and the potential discriminatory impacts of the geoweb (cf. Leszczynski and Elwood 2015; Stephens 2013). Through the nineteenth and much of the twentieth century mainstream commercial and governmental cartography, with its masculinist viewpoint onto the world, was uncritically accepted as 'natural'. The varied creative work of women in mapmaking was accidentally elided or actively denied in standard textbooks and histories of cartography. Academic cartographer Judith Tyner has been active in writing previously unacknowledged female contributions back into conventional histories of mapping including authoring the entry in *Cartography in the Twentieth Century* on 'Woman in Cartography' (Tyner 2015a). Efforts to change public perceptions about cartographic history to help challenge current gender bias are evidenced by *Women in Cartography: Five Centuries of Accomplishments*, a recent exhibition at the Boston Public Library that detailed the mapping work of forty different women from the 17<sup>th</sup> to 20<sup>th</sup> centuries ([www.bpl.org/exhibitions/past-exhibitions/women-in-cartography/view-the-exhibition/](http://www.bpl.org/exhibitions/past-exhibitions/women-in-cartography/view-the-exhibition/)). Co-curator Hudson has long championed creative contributions by women in mapmaking (cf. Hudson and Ritzlin 2000). Of course, there are many *contemporary* female scholars actively engaged in creative mapping and cartographic criticism, including Katy Börner, Laura Kurgan, Kate Mclean, Susan Schulten, Rebecca Solnit (see also Bliss 2015). Tyner (2016) argues that to more fully encompass the work of women in cartography we must think more broadly about what gets counted, noting that "some maps by women have not been conventional; scientific maps tend to be the primary focus of most histories of cartography" (2016, p.12). She recently published a fascinating study of

a genre of unconventional maps (and an antidote to the fetishisation of all things digital in contemporary cartography), looking back at nineteenth century embroidered maps and small silk globes made by girls and young women as part of their formal education at boarding schools (Tyner 2015b).

Another way that past and present cartographies intersect lies in evermore extensive efforts to digitise historic cartographies and make these images publicly accessible on web portals. Projects to capture thousands of old maps are happening in many countries, driven by national libraries<sup>6</sup> and some large academic and civil libraries that feel obligated to ‘unlock’ access to their extensive, out of copyright, map collections. There are also some notable private efforts, particularly the David Rumsey Map Collection which currently has around 67,000 maps and related images online; [www.davidrumsey.com](http://www.davidrumsey.com)). The sheer numbers of old maps now available online as high-quality images is itself significant in popularising cartography, providing depth of coverage across time and through space, diverse thematic cartographies, and multi-sheet topographic series covering whole countries. A leading institution in these endeavours is The National Library of Scotland which has captured a huge number of historic maps for Scottish cities as well as digitising many out of copyright Ordnance Survey series (<http://geo.nls.uk/maps/>). Efforts to georeference old maps add value because the digital images can be overlaid on current geography. Some library initiatives are successfully using crowdsourcing and web-based tools to achieve this<sup>7</sup> (Fleet et al. 2012). Physical cartographic artefacts have often been poorly catalogued and hard to find, but identification of potentially relevant digitised

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<sup>6</sup> The British Library, for example, has around 50,000 map images digitised and is currently cataloguing and capturing the King’s Topographical Collection, an important map collection amassed by George III.

<sup>7</sup> The British Library has successfully galvanised volunteers to georeference over 9,000 maps out of total of 50,000 it has made available online, <http://britishlibrary.georeferencer.com>.

material is becoming much easier with tools like the OldMapsOnline search engine, which currently spatially indexes over 380,000 maps (cf. Southall and Pridal 2012).

The result of mass digitisation, georeferencing and better indexing means old maps can provide new ways for academics - and also amateur historians, map geeks, family genealogists, local activists and the general public – to understand familiar places and past landscapes as portrayed on diversity of cartographic representations. Wider creative re-use can be fostered when digitised map materials are distributed under open access licenses or simply released into the public domain<sup>8</sup>. Such material will support further analysis and integration with other data, for example in historical GIS projects and will hopefully spur novel developments in spatial humanities (cf. Dear 2015; Gregory and Geddes 2014). While digital remediation of historic maps offers many benefits around access, high-resolution images on screen cannot replicate the tangibility of the original - such as the tactile engagement with a large, unwieldy, paper map sheet! Moreover, there is some risk that wholesale digitisation can threaten the preservation and continued public access to original artefacts. Physical map collections are vulnerable to disposal because they are viewed as a niche resource by some library managers and require specialised storage space.

Digitisation has been an important element in marking the bicentenary<sup>9</sup> of an icon in the history of scientific cartography, *A Delineation of the Strata of England and Wales with part of Scotland* completed by William Smith in 1815. It is now widely regarded as first true national geology map and seen as instrumental in improving access to mineral riches beneath the ground, particularly for more reliably locating coal seams, essential to modern capitalism. Its impact derived partly from Smith's unique range of survey knowledge but also his design innovations in representing underground space, which showed geology "in a way

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<sup>8</sup> A notable example here is New York Public Library, [www.nypl.org/blog/2014/03/28/open-access-maps](http://www.nypl.org/blog/2014/03/28/open-access-maps).

<sup>9</sup> Various celebrations and conferences were held to mark the anniversary, [www.williamsmith2015.org](http://www.williamsmith2015.org).

that indicated the sequence of strata ... from oldest rocks to youngest” (Sharpe 2015, p. 230-31) and used colour shadings to create a sense of dimensionality and depth to the earth depicted on a flat sheet of paper. The potency of Smith’s 1815 map and his subsequent cartography can be explored in digital form (<http://www.strata-smith.com>), curated by Peter Wigley, with interactive overlays of different modern and historic maps, surface model and sectional diagrams and fly-through movies.<sup>10</sup>

Besides digitisation efforts by libraries, the popularisation of historical cartographies has been driven by recent publication of many large-format, full-colour volumes of reproductions (driven in part by cost decline in production and potential commercial appeal). The best of these volumes are ‘cross-over’ works deserving of consideration as useful reference sources. For instance, Brotton’s *Great Maps* (2014) and Black’s *Metropolis* (2015) are accessible ‘high-level’ chronological reviews of mapping, encompassing cartographic material from around world assembled by well-respected academic historians and cartography specialist. Dedicated specialist librarians and archivists are exploiting ready access to their own collections; such as the National Library of Scotland’s Chris Fleet and his co-authored *Scotland: Mapping the Nation* (2014); the British Library’s Tim Bryars and Tom Harper and their *Charting the Century* (2015); and the UK National Archive’s Rose Mitchell and Andrew Janes’ *Maps: Their Untold Stories* (2014). Relatedly, Chassuad’s (2013, 2015) volumes mapping the First and the Second World Wars offer an expertly researched narrative history augmented by a rich array of visuals from the cartographic archives of the Imperial War Museum; while Brown and Cohen’s (2015) *Revolution* tells the story of America’s struggle for independence from Britain in the seventeenth century cartographically, through reproductions of important maps from this period, some from

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<sup>10</sup> The wider context of Smith’s profession work and mapmaking can be researched through digitised archive documents at [www.WilliamSmithOnline.com](http://www.WilliamSmithOnline.com), developed by Oxford University Museum of Natural History.

rarely seen manuscripts never published before. Many other books focus on particular cities, using original cartographic artefacts to present chronological histories of urban growth, as in Moore's (2015) *Glasgow: Mapping the City* and Fleet and MacCannell's (2014) *Edinburgh: Mapping the City*. Also urban focused, but with more intellectual significance, is Kain and Oliver's (2015) large format book, *British Town Maps: A History*, that provides a readable and richly illustrated explanation of the forms and scales of urban mapping and how they emerged to serve different needs. The volume is an accessible public output of their multi-year archival research project identifying and comprehensively cataloguing all extant maps of British towns from the earliest times through to 1900.<sup>11</sup>

Providing easier public access to old maps through digitisation projects and recently published reference books has significant intellectual value to mapping scholarship and contemporary mapmaking along several registers. Firstly such historic material can serve as ideas generators for human geographers, providing inspiration for what is map-able and ways to represent space more creatively (the editors and authors of picture books tend to cherry-pick the best, most striking exemplars!). Secondly, a greater appreciation of historic maps speaks to the debate about the 'death of cartography' and the continuing need for handcrafted mapmaking quality over computer generated quantity. Seeing better maps from yesterday directly exposes the relative paucity of good cartography today, particularly in contemporary 'free' urban mapping dominated by a few large corporations and thematic cartography that too often defaults to push-pin uniformity (cf. Kent 2008; Singleton and Brunson 2014). Thirdly, the careful study of the old maps in these kinds of books and browsable digitisation portals can reveal something of the milieu in which they were produced, for example in the ways space was categorised and what kinds of social relations

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<sup>11</sup> The project database lists over 7,000 maps; <http://townmaps.data.history.ac.uk>.

are shown or hidden. This is kind of interpretation and deconstruction of historic cartography as a container of cultural values, harking back to Brian Harley's seminal 1989 paper, might seem a bit 'old hat' in era of post-representational reading of mapping (Kitchin and Dodge 2007) but can still generate useful empirical data and lead to routes into explaining aspects of the past.<sup>12</sup>

One weakness with such populist map books and mass digitisation projects lies in the selection of cartographic material for inclusion which can be haphazard, driven by novelty-value and overt visual appeal, or simply availability and copyright issues, rather than historical importance or intellectual significance. Inherently these approaches to historical cartography also put the map as published artefact on a pedestal, presenting maps as stand-alone images, self-evident visual trophies. They are usually shorn from wider contextual discourse and deny more complex intertextual readings, particularly as presented on some digitisation project websites. Attention focuses almost completely at the aesthetics *within* the map itself and little attempt is made to consider mapping as a practice or think about how particular cartographies were used to solve problems in particular places and contexts in the past. Having said that there may be some potential to exploit archival material in post-representational takes on mapping culture, not least in studying how old maps are performed when different people browse them today on interactive web portals like the David Rumsey site.

There continues to be a rich vein of work exploiting historical cartographies as an evidential source to ask critical questions in the field of political geography and geopolitics. Historians, political scientists and human geographers' continue to seek insights by examining the role of maps in international relations, territorial disputes, state propaganda

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<sup>12</sup> As an aside, the journal *Cartographica* recently marked twenty-fifth anniversary of Harley's 'Deconstructing the Map', with an edited collection of invited essays (Rose-Redwood 2015).

and the projection of national identity. For instance, Branch's book, *The Cartographic State* (2014) demonstrates how map representations were crafted and the ways they circulated in the struggle by Western states in the early modern period to establish and legitimate sovereign control over territory, while Hansen's *Mapping the Germans* (2015) examines the role of maps in the construction of the sovereignty and national identity. Tracing America's deployment of cartographic artefacts at the centre of its Cold War rhetoric, Barney (2015, p.4) details how '[m]aps offered particular choices on how to depict missile silos and peace agreements; how small or large to portray the developing countries of the world, where to intervene; whom to fear; and whom to contain'. Bryan and Wood's book *Weaponizing Maps* (2015) offers a historically grounded and politically charged account of how cartography has been used to control indigenous peoples by militarised states in the Americas but also the potential to deploy counter-mapping by the marginalised to resist dominant power. Other notable contributions to efforts to interpret historical maps and wider cartographic discourses in geopolitics include Boria's (2015) study of the power of border signs within analytical cartographies propagated by key intellectuals like Élisée Reclus, Mackinder and Spykman, and examinations of 'borderscapes' and the complex enrolment of map representations and popular mapping practices (Carlucci 2015; Novaes 2015; Dunlop 2015).

## **Conclusion**

The overarching agenda with this review is to reiterate the need for more human geographers to engage with creative mapping and consider how to exploit the depth of historic cartography being digitised and easily browsable online. Geographers should be alert to the loss of engagement with tangible cartographic artefacts when all mapping – both new and old – is now accessible as digital media. Countering the ephemerality of

screen-based map display I highlighted the lasting value of old maps in their physical form, shown in exhibitions and presented in cross-over books.

Emergent mapping practice, under the rubric of geohumanities, is a particularly fertile and creative area at the moment, and one that has connected with many scholars and practitioners interested in artistically informed and unconventional representation of place. Yet much current work on 'deep mapping' is often rather misleading in the actual 'map' aspects because researchers' lack of engagement with the cartographic conventions for effective communication, as well as the past experience of cartography in representing diverse spatial forms. Too many 'deep mapping' exemplars are intriguing initially, such as gestalt layered montages of interactive spatial imagery, but fail to communicate much actual information about place. Geohumanities needs to connect with experienced cartographers to improve the legibility and usability of their deep maps so they have lasting value and impact.

For 'deep mapping' to impact on the scholarship of mainstream human geography it needs to move from just mapping the agency of people to being able to delineate visually larger structures of society and the latent political-economic processes. Artistic inspired mapping, showing multiple meanings of place and immediacy of personal experiences will still be dismissed by many economic, political and critical geographers, who need a cartographically intelligible way to interrogate the ways by which power, in terms of say finance, cultural norms, laws, or physical infrastructures, is wielded in the processes that bring space into being. Mapping how social space is really made remains the key challenge in cartography.

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