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"Praxes of “The Human” and “The Digital”: Spatial Humanities and the Digitization of Place"

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Abstract

The spatial humanities have evolved much in the last ten years or so, and much of this evolution has been driven by project and problem-based GIS applications. It is argued here that the field lacks a theoretical framework analogous to Critical GIS in human geography. I argue that, just as Critical GIS drew on the intellectual hinterlands of human and hybrid geography, so must the spatial humanities draw on the intellectual hinterlands of how humanities discourse have always formed and transmitted concepts of place. Rhetoric, and especially the rhetorical devices of ekphrasis are given as an example of this; a project co-led by the author, the Heritage Gazetteer of Cyprus, is given as an example of how the digitization of (humanistic) place has been operationalized.

Keywords

Spatial humanities, critical GHIS, text, rhetoric, Cyprus

Introduction

The “Spatial Humanities” is a broad term, encompassing many dimensions of theory, practice and method surrounding the study of place and space in human history and culture. Recent texts have positioned the spatial humanities in terms of a “spatial turn” across the humanities, a shift of intellectual and epistemological emphasis by which place has become a subject of study in its own right (Bodenhamer, Corrigan, and Harris 2010, vii). Much attention has focused on the fact that the spatial turn has been driven, in large part, by technology, principally

the application of geographical information systems (GIS) in specific humanities domains, and to specific humanities problems (Gregory and Geddes 2014, ix-x). However, a major issue with the application of GIS in research, including research in the spatial humanities, is the lack of a single, satisfactory definition of what GIS is. GIS incorporates hardware, software, methods, tools, data, databases and maps: a wider-ranging and diffuse definition, which has changed little in over twenty years (Maguire 1991, 9). The advent of online digital mapping has only added to this breadth of definition. Some, such as Farman, include Google Earth, released to the community in 2005, as a part of GIS (Farman, 2010), whereas others apply terms such as “Neogeography” to such web mapping platforms (Graham, 2010; Haklay, 2013). Others stress the analytical functions of GIS, drawing a distinction (for example) between results generated using GIS software, and visualizations (i.e. maps) generated using computers (Knowles, Westerveld, & Strom, 2015). Such tool-based analytical functionality, subjected to the critical frameworks of the disciplines of human geography, led to the emergence of “critical GIS” in the 1990s. This fusing of geographical theory with technical practice was a highly significant moment, as the adaptation of theoretical checks applied to qualitative information for data which is otherwise reduced to rows, columns and vectors extended the range and capabilities of that practice. In “critical GIS”, the “Critical” part refers to the processes of preparing observed information according to spatial formats, so that they may be interrogated spatially by a GIS computer programme, such as ArcView or QuantumGIS (Jung and Elwood, 2010). This raises key question here, most significantly the distinction between quantitative and qualitative data relating to place (Leszczynski 2009, 351-352) or, in the more nuanced terminology of Leszczynski, “infological” views of the world which are fuzzy and uncountable and not amenable to description in a geospatial database, versus “datalogical” views of the world, which are enumerable in quantitative terms. Many recent applications of GIS to

humanities data have likewise struggled with these questions, sometimes explicitly, sometimes implicitly.

However one defines GIS, for both the spatial humanities and human geography – i.e. two of the major areas of academic research which make use of it – a key issue is how the data it makes use of is created in the first place. While “the human” is a concept which links both areas, over two decades or more, both have developed different methods and critical frameworks to facilitate the creation of digital GIS data. This is what might be called “the digitization of place.” The purpose of this paper is to explore and compare the frameworks which make up this digitization process in the spatial humanities.. I examine briefly the digitization of place from cartographic and textual sources, comparing the political affordances of historic maps, and the work of two authors for whom spatiality was especially important, George Orwell and William Least Heat Moon. I explore some of the key concepts in the rhetorical representation of place, and bring together these different aspects of representation in an example of a recent spatial humanities project, the Heritage Gazetteer of Cyprus. It is argued that the key theoretical feature of the “digitization of place”, as represented by the Cyprus project, is the fact that the material in which place is described and represented and the point at which it is digitized is separated in time. This temporal separation, in addition to the representation of place across different forms of humanities discourse, holds the key to the development of a “critical GIS” for the spatial humanities.

Such a review must necessarily be limited in its scope and ambition; and I focus primarily on the content and discourses of the spatial humanities, without presuming to equivalent depth in human geography. By focusing on digitization, an instrumentalist practice whose history is tightly entwined with that of the Digital Humanities (Berry 2011, 11), I suggest that, in their responses to “the digital”, and in recognizing the key temporal distinction between them, spatial humanities and human geography can transcend epistemological and methodological

distinctions, and provide a shared framework for the critical understanding of how place is created and represented in the digital world.

The Digitization of Place

Digitization, as defined by Unsworth, is “the production of a digital surrogate from a physical object”¹ This is crucial for understanding what is meant by the “digitization of place..” I consider “the digitization of place” to mean the production of any digital media in which place (or space) is represented, either semantically or in Cartesian vector or raster form, which derives from information in the human material, cultural or intellectual record. Therefore, “digitizing place” most obviously means removing physicality from the digitization process: it is the representation of a concept, not an object. The objective properties of a physical artefact which define what the object *is* are replaced by a framework of critical assumptions about what place *is*. That framework is conditioned by a number of properties of the platial “object”, and reflects the theory of “humanistic place” envisioned by Yi-Fu Tuan. For Tuan, humanistic place is defined in its extent and quality (i.e. as an object) by human perception, experience and memory: in his memorable phrase, “[a]n armchair by the fireside is a place, but so is the nation-state” (Tuan 1976, 269). The “placeness” of these places, whatever their geometric scale, derives from the fact that they can be experienced and perceived by humans. Exactly the same principle may be applied to places attested in the human record of literature history, the arts, performance or archaeology. Such places may be fictional or factual, historical or contemporary; they may be written explicitly in a text, marked on a map, or reflected implicitly in a prehistoric sherd on the ground’s surface. Encoding these properties of place is effectively what both spatial humanists do when they create GIS models with data digitized from such content (or any kind of digital map); and the criticality of this process has echoes in the processes of critical GIS undertaken by human geographers in the preparation of their

¹ <http://people.brandeis.edu/~unsworth/newberry.04.html>

observations of the contemporary world for GIS analysis. For the first part of this discussion therefore, I seek to situate the digitization of place within the well-established Digital Humanities traditions of digitizing maps and text.. I then draw on selected literature from the critical GIS subfield of human geography to suggest, tentatively, what a critical framework for the digitization of place in the spatial humanities – and more broadly the Digital Humanities – might look like.

Digitisation of old maps

Non-digital maps are based on the “spatial primitives” of points, lines and polygons (Lock 2010, 91). These are interchangeable and dependent on scale: a town can be represented as a point or a polygon; and a river might similarly be a polygon or a line, depending on the extent and frame of view. Andrews defines maps made up of these primitives in similarly reductionist terms: A map is “a partly schematized graphic representation whose signs are interrelated in ways that resemble, or could reasonably be thought to resemble, the horizontal relations connecting the objects represented” (Andrews 2009). However, most researchers in the history of cartography would see maps as rich mediators of human-spatial information, laden with value, themselves repositories of communication and consumption of place as an entity that both conditions and is conditioned by the immediacy of human experience. For places encoded in historic maps, extracting and understanding this value means extracting and understanding both historical and cartographic context. For example, maps of Ottoman Cyprus, which predate trigonometrical survey techniques, tend to exaggerate the east-west plane of the island and “flatten” the northern coastline, whereas the southern coast, which was typically where ships bearing European travellers (and cartographers) landed, is represented in more detail. This is a subtle and unintentional nuance in the mapping of perceived fourteenth century reality. Maps are simply one channel of conveying complex spatial clues about the formation of place in the

human mind.. This is an immediate challenge for the critical digitization of place derived from historical cartography. .

Such values can be co-opted or manipulated for overtly political purposes. *The Naked City*, a conceptual map of Paris published in 1957 by the *Mouvement Internationale pour un Bauhaus Imaginist*, affiliates of both the London Psychogeographic Society and the *Internationale situationniste* movement (the Paris Situationsits), sought to undermine “authoritatively” mapped space in Paris and replace it with a “grassroots” version (Pinder 1996, 418). In *The Naked City*, the authoritative, government-produced *Plan de Paris* was divided up into seemingly random segments, and the pieces rearranged according to a conceptual vision focusing on the ease of physical communication between those places. It thus explicitly rejected the positivist shallow-map geography as represented by the *Plan*, and stressed an intangible “unity of atmosphere” as the principal determinant of human movement through the urban cityscape, rather than the cold, quantitative and deterministic layout of space planned by central authority. While the “social geography” of the Situationists and other post-historicist movements focus on the contemporary world of 1957 (McDonough 1994, 64-68), a key challenge for the spatial humanities is recreating and understanding space mapped the past in the present.

The Naked City demonstrates that a map is a complex dataset which can be arranged *and unarranged* in different ways. One mode of nuanced digitization, returning to the distinction of Leszczynski 2009, is the separation of “datalogical” Cartesian points from “Infological” descriptors of what they mean in historical or cultural terms, and the management of links between the two: the production, in other words, of digital gazetteers (of which the Cyprus project described below is an example). For example, on a map of England, “London” represents not (necessarily) a quantitative and definable spatial footprint – in any case, defining a spatial footprint in the form of a polygon, and declaring that the inside is London and the outside is not would be futile. “London” is not a specified collection of buildings (or other

features, natural or anthropogenic) with definitive spatial footprints, but rather it is an ontological whole based on a framework of common social and cultural understandings of what “London” *is*, which has moreover changed significantly over time. Particular examples which purport to map London are single perspectives on that understanding. London can be mapped based on its administrative or political geography, for example, but this is itself an outcome of various “readings” of London’s geography over time by local and national authorities, based on administrative and political processes, negotiations, agreements and disagreements, and represents the culmination of a set of decisions reached by those with the power to do so. Naturally, these will also vary vastly through time. They are only objective inasmuch as they have official administrative legitimacy at a particular point; but one would not have to look very far to discover examples of such objectivity which impose narrative geographies that are rejected by those being mapped.

This is a form of digitization which associates descriptions of places (such as a name) and a geometry, and frequently this means falling back on point data. To map London in the GeoNames.org gazetteer for example, one of the most widely-used geospatial platforms on the World Wide Web (Hahmann and Burghardt 2010, 2; Ballatore 2016, 3), “London” is represented by a single web-readable Universal Resource Identifier (URI): www.geonames.org/2643743, with numerous associated child records (Figure 1). A single-point set of coordinates is associated with this URI (51.50853, -0.12574) but such precision is meaningless cartographically. But the power of this form of platial digitization is not that it is meaningful as such a representation, but that it converts the information contained in the map (or its “infological” content, to use Leczyński’s term) to data records which are linkable. This aspect is explored in more detail below.

Text to digital place

Digitization has always been closely linked to the textual and literary branches of the Digital Humanities. There is a clear distinction between the straightforward conversion of text from analogue to digital form, and the creation of digital edition of a particular text which makes use of the affordances of the digital medium to add value, such as hyperlinking and remote annotation (Romanello et al 2009, 158; Pierazzo 2011). A text which has simply been digitized as a letter-for-letter facsimile is a different kind of object to a text in which the digital medium is used to annotate the text, mark it up semantically using a schema such as the Text Encoding Initiative, or provide a critical apparatus. Both make use of the digital medium, but in different ways. This is significant because the histories of, the representation of place on maps and in text are closely intertwined. Before the advent of trigonometrical survey, photogrammetry and, eventually, satellite imagery allowed the direct recording of landscapes based on observation (Collier 2002), cartographers of the early modern period constructed maps of the Old and New Worlds in part by supplementing ancient sources such as Ptolemy's *Geography*, which identified locations of towns and cities from astronomical calculations, with texts - the logbooks and itineraries of returning travellers for example (Peuquet 2002, 149). This led to many errors in the representation of placenames, their positioning on the map, and in the position and interpretations of major locations themselves (examples of this from Venetian period maps of Cyprus are discussed later). Such maps were therefore imperfect aggregations and visualizations of data from multiple sources, which included text. This illustrates the complex inter-media relationship which underlie the representation of historical places represented in texts and on maps.

"Textual place" can be defined digitally in various ways. Mark up using semantic web-readable standards such as the Text Encoding Initiative (TEI) allows places to be defined (using the <place> element), and qualitative relationships between those places to be expressed using annotations (Simon et al 2015, 51). This is the basis of geospatial data alignment tools such as

Recogito, which annotates links between textual references and gazetteer entries (Simon et al. 2015, 51-52), and is a powerful and effective way of quantifying the representation of place in and across text, and has the effect of decoupling authorial context from the place itself: of, in effect, simultaneously digitizing and reifying place as an entity in its own right, defined by XML protocols, and annotations.

Literary texts

The same logic applies to place in both fictional and nonfictional and academic texts (Cooper and Priestnall 2011, 256-258). Hones has argued convincingly that drawing boundaries between fiction and nonfiction is not in fact useful when considering literary geography, rather that both readers and authors are always actors in a bidirectional relationship, which culturally elaborates the text (and the places within it) whatever its genre (Hones, 2008). George Orwell (1903-1950), for example, was an author for whom place was extremely important as a narrative device, and which conditioned his communication of aesthetic and political values, pervading his work as a means of framing the key themes of his writing, including exclusion and entrapment (Wright 1985), and underscores the political and social messages with which he was concerned. We see examples of this in the dystopian uniformity of the accommodation blocks of *Nineteen Eighty-Four* (Orwell 1949); and the same dehumanising and depersonalizing theme of uniform space(s) emerges in his description of lower middle class suburbia in *Coming Up For Air* (1939): “Do you know the road I live in – Ellesmere Road, West Bletchley? Even if you don’t, you know fifty others exactly like it.” (Orwell 1939, 9). However Orwell also uses fictional spatial description for precisely the opposite purpose as well. In *The Moon Under Water* (1946), he presents his ideal English pub.. in idealised and personalized terms This famous piece of platial description published in the *Evening Standard* of London, paints a mental picture of the pub, what it looks like, what it contains, and what happens there - “...cast-iron fireplaces, the florid ceiling stained dark yellow by tobacco-

smoke...”; the aural surroundings – “...it is always quiet enough to talk...” and the food served “...[y]ou cannot get dinner at the Moon Under Water, but there is always a snack counter...” (Orwell 1946). These description of the experiential and existential qualities of the pub form a composite reading of the place itself. Platial references such as these can be marked up, tagged, analysed, and referenced using different technologies and different standards, or defined using an ontology such as schema.org or dpPedia (Ballatore 2016). However the Moon Under Water is entirely fictional: it is Orwell’s imagining of *the perfect* pub, not a *real* one. It is visualized internally and mediated textually as an illustration. It is a place which can exist on no map (except to the extent that we learn that it is somewhere in London), and which cannot be cartographized at any scale that would satisfy Carestian geographic accuracy, except in the same imaginative and fictional fashion. Yet most spatial humanists would agree that the study, conceptual mapping and critical discursion of the Moon Under Water as a place, albeit an imaginary one, would fall into any definition of that field’s epistemology.

The Moon Under Water therefore represents a conjuring of place from the writer’s imagination using literary and rhetorical devices. The mind’s eye breaks place down into ontological components, which are then linked in sequence by the description. The mental visualization this creates is also a mental map composed of linked statements conveying geographical realities, embedded in the reader’s perception and memory. These devices are also essential to factual genres of text which foreground concern with place, such as travel writing. This also underscores Hones’s point about the futility of placing literary geography within conventional genre boundaries. A particularly famous example of textual geography in the travel writing genre is William Least Heat-Moon’s 1991 survey of the people, landscapes, events and histories of Chase County Kansas, *PrairyErth: A Deep Map* (Heat Moon 1991). Least Heat Moon was, like Orwell, profoundly interested in the human dimensions of place, and *PrairyErth* is, often taken as the starting point of the “deep map” movement in the spatial

humanities (Wharf 2015, 135) Least Heat-Moon's methodology was to document the region of Chase County, Kansas, through twelve "quadrangles", semi-random divisions of the map of the county, in which he situated minute by minute close observation, anecdote and historical reflection, all linked as a narrative through the places he described. This simultaneously foregrounds and subverts the text's "thin map" nature, in Harris's terms (Harris 2015, 30), terms that would more reductively fit the definition of Andrews (see above), of the twelve Cartesian quadrangle divisions, whose unexplained randomness demonstrate their lack of depth and perspective. A story particularly illustrative of this point is an interview with a retired railroad worker, Fidel Ybarra who, in the presence of Least Heat-Moon, draws a map of the stretches of the Santa Fe railroad on which he spent his working life, detailing the points of significance to him personally:

"He draws and loses himself in the map, and he forgets to speak, sometimes only nodding an answer, sometimes writing it as part of the drawing ... I watch the map fill in. Artless and accurate but for its scale, it is a portrait of sixty years spent along the skinny rail corridors of the county, but it is a trackman's picture: bridges without rivers, curves without trees, villages only sidings with labels lick trackside signs, and Chase with hills, a level place of inclines you can't perceive." (Heat-Moon 1991, 233).

This is an example of a map emerging from the literary process of describing a place second-hand in/through text, with the added rhetorical complication that the process of drawing a map of that place is being described. Least Heat-Moon does not reproduce Ybarra's map as an illustration, and he does not need to: the product, and the process of producing the product, is described in the text as pieces of narrative reflection which, as such, are distinct from one another and thus ontologically separate. This is a piece of literary *ekphrasis* (see below) where the landscape of Kansas is "built" in the reader's mind by Ybarra's recollection, and the reader is guided through that landscape by the narrative. The units which make up this (deep) map are

not (only) points lines and polygons; but the *narrative events* that Ybarra describes from his own experience – where he has driven spikes in to the ground to repair the track; or “Dad lived here ►” sometimes writing it as part of the drawing: “I went to work for A. T. S. F. in 1944-1988”, etc. These events are given spatial context by the map he draws, and this is expressed in Least Heat-Moon’s text. Thus, Ybarra’s map might be considered a rhetorical representation of space: a *spatial narrative*. Considering this in tandem with historical maps based in part on the literary accounts of travellers demonstrates the shared roots of image, text and rhetoric in “inhabited”, non-Euclidean, geographic representation of human culture and history. The object of the process is the construction of location as an object in the mind of a human observer/reader (or possibly, thus of space as an artefact). The ekphrastic models of Least Heat-Moon and the notion of *periegematikos* developed by Ruth Webb (see below), are also traditions of visualizing place in the mind from words that break the world down, but in a non-Cartesian way.

Digitisation versus reduction

What does the “digitization of place” mean, when the “place” is, the *Moon Under Water* or Ybarra’s railroad? Both can be represented in digital map form, or in digital gazetteer form (a list of placenames referred to in Kansas, or abstract/imagined maps of the hypothetical pub), and mounted online, with varying degrees of imagination. This process may be described as “literary cartography”, the creation of a map, as opposed to “literary geography”, the understanding of spatial representation within the text (Piatti 2016). Such a process of platial digitization perforce objectifies the places described, and removes them from their narrative and authorial contexts. It is a process of “flat” representation where, essentially, the “spatial primitives” of Lock are represented in geometrical and binary form. Rossetto describes this as a “cartography of literature”, which “fails to engage the recent development of post-representational approach within cartographic theorization” (Rossetto 2013, 4). What,

therefore, would a “post-representational” spatial humanities look like, given that there is a tension between the textual (literary, or linguistic) organization of place and its digital representation? Referring to location with URIs in digital gazetteers is a non-visual way to create digital place from text (although it is powerful in an information and “datalogical” sense); but this overlooks the use of language itself, the generation of meaning through sequence, the spatial narrative.

The *benefit* of a “representational”, as opposed to post-representational, digital map is that it makes the geospatial component of the text machine readable and web mountable, and therefore linkable, expose it to search engines and allow linking with other resources (Fleet 2008, 259-262; Simon et al. 2015). However, when it comes to forming part of “cultural discourse” (Schuurman 2005, 48), digital maps are forced by their nature to make *a priori* representational assumptions about a place’s ontology first, including most obviously its Cartesian geometry. This reduces and removes subjects of interests to humanists, such as events. As Mostern and Johnson point out, “Locations become places only when events occur that cause them to become imbued with meaning’ (Mostern and Johnson 2008, 1092). Notional events pervade Orwell’s *Moon Under Water*, historical ones Ybarra’s railroad; yet the spatial humanities lack a detailed theoretical framework for the digital expression of place from both maps and text, in the way that Digital Humanities has well established frameworks for producing critical editions of text following digitization. This reflects the problems of terminology described by Rossetto (2013); although rather than an uncritical adoption of cartographic terms, much platial digitization (i.e. the production of digital maps from discursive sources) involves uncritical, or semi-critical, adoption of quantitative data structures, which masks complexity rather than engages with it. Cacquard has noted a distinction between “story” maps which “describe forms of spatial expressions that embody our personal experiences of the environment and contribute to creating a deep understanding of places”, and “grid maps”

such as those of railway networks, which are “seen as a way of suppressing alternative geographical imagination, just like any other authoritative and functionalistic map” (Caquard 2011, 3). There is an inherent danger that the (uncritical) digitization of place from humanistic (/cultural) sources will similarly suppress alternative readings of those sources.

The Paris Situationists were reacting against such perceived suppression when they rejected the *Plan de Paris*. In rejecting the term “shallow map” Harris states: “[The term “shallow map” intentionally or otherwise implies a meaning of superficiality and inconsequentiality and that they are lightweight and lacking in substance. There is overwhelming evidence to disprove these ... descriptions” (Harris 2015, 30). The terminology “shallow map” disavows a critical relationship between cartographic representation and geographic information. However, it can be said to apply when a *digital map* is rooted only in *digital data*, without any critical framework. Just as the human geographers who developed the principles of critical GIS drew on the intellectual hinterlands of hybrid geography and nuanced mappings of the relationship between quantitative qualitative to develop the critical frameworks in which the technology was used (Schoorman 2000), so the spatial humanities must turn to the traditions of non-empirical spatial description and representation which make up its intellectual hinterland.

Rhetorics of place

What traditions might the spatial humanities call upon for a framework which allows place to be digitized and keep its meaning? One is rhetoric itself, specifically the form of Classical rhetoric known as *ekphrasis*. Ekphrasis is the formal rhetorical process of expressing images in words, and became a central meme of the visual turn in cultural studies in the 1980s, which sought to understand more critically the importance of visual media in society and history. In this context, many observers focused on the continuity (or not) of ekphrasis from its Classical roots in Homer to the relationship between words and image in the contemporary world. Rhetorical textbooks and ekphrastic literature of the early modern and modern periods, for

example being Keats's *Ode on a Grecian Urn* and Shelley's *Ozymandias* (Heffernan 1991 305; Mitchell 1994), are all textual representations of physical human-made objects. Other recent discussions of the subject have focused relationship of ekphrasis to photography (Coombes 2012), bearing similar emphasis on ekphrasis as a representation of a representation. Webb has argued that a contemporary reinvention of the parameters of ekphrasis with each generation of scholarship has divorced it from its Classical meaning as the verbal description of things, where "the visual" is subdivided into many possible subjects: places, persons, events, "even a crocodile" (Webb 1999, 13). For Webb, the defining feature of ekphrasis is *vividness*, a description which "leads one around", *periegetikos*, just as one is "led around" the Moon Under Water by Orwell, and the railroad by Heat-Moon/Ybarra (the significance of the difference in scale between these two examples will be the subject of another paper). One can trace vividness of a kind in maps, although of a kind different from that of an artistic image, presenting a different kind of "truth" to that which is contained in representational art. Heffernan explores such abstraction by focussing attention on the role of ekphrasis as a bridge between the visual and the verbal, as "the verbal representation of a visual representation" (Mitchell 2005, 263). This definition stresses two points of mediation, that of the graphical artist who creates an artwork, and that of a poet or author who writes a description of it. Heffernan makes a point of distinguishing ekphrastic representation from pictorialism and iconicity, since the latter two are themselves representations of the natural or physical worlds, whereas an ekphrasis in the Classical sense is only ever a representation of another representation (ibid). In cartography, even "thin" maps do this (Harris 2015). In almost all cases these are augmented with secondary information, such as placenames, labels, features and other meta-information, whose physical positioning on the sheet is organized according to spatial principles, and therefore combine at least two forms of representation.

Ekphrasis therefore breaks down place from different sources into identifiable and definable elements using that most humanistic of discourses, text; and acknowledges that further abstraction and/or domain level modelling is neither possible nor desirable (at least for the intellectual purposes which spatial humanities sets out to achieve). The breaking down of cultural space may be seen as a counterpart of both qualification and quantification in their more grounded senses in human geography.

Past place, present place

The observational characteristics of ekphrasis bear comparison with the observational characteristics of critical GIS, which seeks to break down observed place into ontological units which can be subjected to computational GIS analysis. In both, the observation occurs in the here and now, and involves a process of breaking down perceived place into ontological units for expression in non-visual media; yet the examples above accommodate – are forced to accommodate - the separation in time between the thing/place observed and the observer. This is seldom an issue which critical GIS has had to deal with. An example of this is Kwan and Ding's "geo-narrative" analysis of the pathways taken by female Muslim residents of Columbus, Ohio as they navigated their environment in the aftermath of 11 September 2001. In this study, the authors use GIS extensions to define, visualize and map highly qualitative attributes, such as feelings of fear, and give them spatial coherence by mapping the pathways the study participants took (Kwan & Ding 2008, 458). The sections of the routes are colour coded according to the emotion the participant felt in each section of the pathway. There is a qualitative breakdown of the text/data – a process of representation - before it is exposed to GIS analysis, but with the further step of qualifying the emotions. Quoting Strauss and Corbin (1998), Kwan and Ding define "qualitative" itself as "any type of research that produces findings not arrived at by statistical procedures or other means of quantification. It refers to *research about people's lives*, lived experiences, behaviors, emotions, and feelings as well as

about organizational functioning, social movements, cultural phenomena, and interactions between nations” (Strauss and Corbin 1998, emphasis added). Critical GIS thus overcomes a tension between qualitative and quantitative data. As Elwood and Jung have put it, there is “a common concern with mediating between humans’ conceptualizations and articulations of space, spatial attributes, spatial objects and relationships; and feasible mechanisms for representing these conceptualizations in the computational models of digital spatial technologies. At heart, they grapple with the complex and shifting meanings that are created and modified through human perception, in language, and in ‘data’, however we define it” (Jung and Elwood 2010, 66).

This process of “mediation” is the central plank of critical GIS, and would accord with what I am calling here the “digitization of place” in a post-representational spatial humanities. However, importantly, the “human” conceptualizations and articulations of space” relate to the *contemporary* world (in this case contemporary Ohio), to a point of great trauma and disruption, rather than temporal separation, mediated through observation, interviews, harvesting of transactional data, etc... Most uses of GIS in human geography more broadly deal with phenomena observed, and data gathered, in the contemporary world (Goodchild and Janelle 2010; Sui and DeLyser 2012; Cresswell 2014). These applications share the temporal framework of the Internet and Volunteered Geographic Information. Critical GIS scholars have drawn a distinction between the epistemologies of GIS for the detached analysis of observation of contemporary human existence from digital spatial data generated by the public in the course of contemporary internet use – so-called Volunteered Geographic Information (VGI) (Goodchild 2007), otherwise known as neogeography (Turner 2006). Human geographers such as Stephens (Stephens 2013, 993-995) and Leszczynski (Leszczynski 2014, 75) have advanced powerful arguments as to how the *lack* of a critical framework for neogeography has left it vulnerable to neoliberal socio-political influences and appropriation by multinational corporate

interests. Leszczynski in particular goes out of her way to argue that “[u]nlike Critical GIS, neogeography is not concerned with the serious trappings of the politics of uneven knowledge production or digital divides” (Leszczynski 2014, 66; see also Haklay 2013). It is the cotemporality shared by critical GIS and VGI/neogeography which renders this distinction necessary in the first place.

The dichotomy between the competing capabilities of critical GIS and VGI/neogeography is not limited to the socio-political aspects of the data in question, but also to what functions the technology enable. The need for interoperation of data and services, rather than critical analysis, lies at the heart of the Web. Therefore most digital geographic data online is expressed as point data which can be easily parsed by browsers, platforms, databases, apps etc and, most importantly, easily linked to other Web resources and services. Such data is created at a single point in time – the interview, the trace capture, the participant diary, and so on; and this fact conditions both the purpose and the form of subsequent analysis. One could even view Massey’s famous example, in *A Global Sense of Place*, of the diversities of Kilburn High Road as being derived from a set of contemporary spatial narratives which are constrained spatially by Massey’s physical presence in the environment, and temporally by when she was there (Massey 1991). The qualification and quantification of place however functions differently in literary, historical and/or archaeological spatial discourse, where the original articulation of the place is separated in time from the “reader.” “Past place” is communicated and received via multiple trajectories through multiple media (broadly defined), with multiple potential points, through history, at which the spatial discourse is created. The question, therefore, for the spatial humanities is how can this technological affordance be harnessed for the treatment of geographically significant information from the human record, which is separated from the contemporary world by time? This question of the disconnect between past and present finds echoes in phenomenology in archaeological theory (and the reactions against it), which argue

that the original significance of features such as monuments can only be understood through contemporary sensual experience of them (Tilley 1994). This “Being-in-the-world” perspective of the past asserts the centrality of the existential and experiential point of view of the observer (Tilley 1994; Brück 2005; Barret and Io 2009). The study of past dynamism, pathways, movement and mobility are all framed by the ideas of “lived in” social space developed in and after the 1950s; an interpretation of space that cannot be mapped using conventional representational

Despite these two decades of interest in existential human space and the relationship between original articulation and contemporary observation, and despite varied exercises in place ontology modelling recently reviewed by Ballatore (2016), the digitization of *historic/cultural* place in the intellectual assets of the humanities such as maps and text, has not reached the level of epistemological maturity visible in critical GIS (a point underscored by Rossetto’s critique of cartography’s links with literary criticism). Ballatore’s critique notes that there is “no consensus on what place is”, and argues for an “intermediate conceptual layer” linking first principles of place that apply to everything, and domain specific ontologies in different sub-domains (including, in his analysis, Digital Humanities). However the main problem in this approach lies in the distinction between “place cognition” and “place engineering” – the understanding of place, as opposed its construction or description; the ontology versus epistemology of Leszczynski (2009). While this is a distinction which permeates most work on the “digitization of place” in critical GIS for the contemporary world, it is not a distinction that works easily in the spatial humanities. A fifteenth century itinerant’s understanding of the places he experiences cannot be decoupled from his “engineering” of those places in the form of map he draws of the itinerary he writes; nor can Orwell’s understanding of the Moon Under Water be decoupled from his engineering of it in the imaginative processes involved in the creation of his prose. Ybarra’s railroad map was created from historical/personal observation

(not from imagination), mediated by him in the map he drew in Least Heat Moon's presence, later again by Least Heat Moon when he wrote the passage above, and finally by the reader of *PrairyErth*. Understanding such non-contemporary understandings/constructions of place requires reference back to the "being in the world" thesis of Heidegger, to notions of what it means to (re)construct place through personal experience, to the theories of phenomenology advanced by Christopher Tilley, and the debates about whether it is possible to access place as perceived and experienced by past peoples (Tilley 1994; Brück 2005; Barrett and Ko, 2009).

Cyprus: digitizing place from history and cartography

Cyprus is situated in close proximity to Europe, the Levant and Africa, giving it a key place in the history of these regions' interaction. Its history is one of multiple meaning-laden places overlaid on one another, and described by numerous textual and cartographic sources from periods of Greek, Roman, Byzantine, Venetian, Ottoman and British rule. Since the Turkish occupation of Northern Cyprus in 1974, it has been partitioned, with the so-called Green Line separating the Greek Cypriot south from the Turkish Cypriot north. Representing and modelling place on Cyprus in a meaningful way illustrates the problems with even domain level ontological mapping, or of applying qualitative criteria. Modern disagreements exist over the construction of the "place" that is Northern Cyprus, a political entity not generally recognized by national or international bodies; and this led to OpenStreetMap's first edit war over contested toponym spaces in 2007 (see <https://lists.openstreetmap.org/pipermail/talk/2007-November/019670.html>).

The digitization of place in Cyprus, therefore represents many of the problems of multiplicity and multimedia representation that have emerged in the course of this paper. It calls for the systematic treatment of information before it becomes data which can be quantified and interrogated in a GIS. This approach was adopted in a project co-led by the author between 2013 and 2015 on the geo-heritage of Cyprus. The Heritage Gazetteer of Cyprus (HGC) was

funded by the A. G. Leventis Foundation and based at King's College London (Heritage Gazetteer of Cyprus 2014), with the purpose of developing an authoritative digital account/index of the most important historical and archaeological places in Cyprus from a corpus of texts and historical maps. Human readers found place references (attestations) in texts and maps, and used these to create profiles of these sites in the form of gazetteer entries, based on references to them in the sources. The approach thus blends the spatiality of humanistic resources with a bibliographical approach to place, and relies – like all humanities scholarship – on robust referencing. Like most regions, Cyprus's settlements and natural features are described in multiple ways in multiple sources; and in the HGC we focused on those sources and variations in placename spelling. In this sense, digitizing place in Cyprus is a problem of (carto-)bibliography: every name of every place can be traced back to a sourceable reference, and every such reference represents a spatial footprint which is imbued with meaning by the author. Indeed, the authorial act of making that reference could be described as an “event” in the language of Mostern and Johnson (Mostern and Johnson 2008, 1092). The key question for the HGC was when author X writing at time Y refers to place Z, *what geographic entity are they referring to?* This question acknowledges the temporal disconnect between the author or cartographer attesting a placename, and the reader/gazetteer contributor creating the entry. While a conventional Cartesian map forms part of the model (Figure 2), the input is purely textual, and the primary ontological definition of the place being that it was attested in a text or on a map – not that it has a set of formal palatial attributes, as most ontologies for contemporary place assume.

In the HGC, every place is identified by a single URI, which is associated with a “default toponym” drawn from the *Complete Gazetteer of Cyprus*, a UN document which gives agreed Turkish, English and Greek spellings of placenames (and is thus necessary for legal compliance purposes) (Christodoulou and Kōnstantinidēs 1987). The historic names of those places are

treated as variants of this name, and each is given a URI which extends the URI of the default toponym. Names were gathered manually, and for each name, and each variant of each name, full bibliographical information, and (where available) a web link to the source was provided. The process of digitizing the places was therefore based on a very traditional process of close reading and understanding.

The formal properties of the records' spatial footprints are present are purposely broadly defined. Essentially, the HGC makes no effort to push existing digital gazetteer applications beyond the geometric association of the place with point data. Rather, heritage locations treated in one of two ways. In the first case an "Archaeological Entity" (AE) is a named place, with a definable spatial footprint, and an identifiable phase of construction. Examples could include a mosque, a church or a sanctuary. This is relatively unproblematic, as the spatial footprint of an AE can be defined on the (digital) map according to its physical space it occupies on the earth's surface, using an embedded georeferencing tool which employs high-resolution Google Earth satellite imagery. The second kind of place type developed in the HGC is that of Historical Unit (HU). HUs are larger entities of composite nature, such as settlements, towns, attested regions etc, which are far more problematic to locate on the earth's surface. In the current instance of the project, we take the process of approximation outlined above, and use a simple polygon which takes in the HU's approximate surface area (Figure 2). This approach reflects the distinction drawn by Casey between "sites" which have "edges", versus "places" which have "boundaries." In this terminology, we treat AEs as sites and HUs as places (Casey 2011, 70-73).

In the HGC, the map is secondary: the key element for inclusion in the database is that the AE or HU should be attested in published literature, and multiple different attestations over time are allowed. This is our category for digitization. This allows a biblio-textual profile of the place to evolve as more attestations are added. For example, we can express the town of Salamis

as an HU, and assert that it has been referred to using the literary attestation “Σαλαμίς” four times between ca. 600 BC (in a Homeric Hymn) and AD 90 (Acts of the Apostles). We can further attest that it was attested as “Constantina” by George Sandys in 1673, and that its modern toponym is Σαλαμίς’, the same as its attestation in the Classical and postclassical periods. The HGC also asserts that Salamis contains AEs – in the current version of the database, these are the churches of Ἅγιος Ἐπιφάνιος (Agios Epifanios) and Ἅγιος Βαρνάβας (Agios Varnavas). Further attestations for the names of these AEs can be added in the same way. Each AE and HU, and each attested spelling of each AE and AU is given its own Universal Resource Identifier (URI), allowing each attestation of each place, and therefore its container relationships, to be expressed as a singular digital object, following the methodology of the Pleiades project (Elliott and Gilles 2009), and the implementation of this methodology by Barker and others – see above. Thus, while the map accompanying the HGC might be considered shallow in terms of the ‘base map-story map’ dichotomy; it is rendered through a process of aggregating literary attestations, and thus would be understood as being “deep” by most of its definitions. Reading the map on the screen only makes any sense if it is read in conjunction with the database. The HGC might, therefore, be seen as a rudimentary, yet functional, instance of how humanistic place might be digitized.

A key point for the purposes of this paper is that the HGC makes no statement about a) the authority or veracity of any one attestation, or b) its actual spatial footprint. Oftentimes, both of these would be highly subjective. Rather, every HU, AE and individual attestation has its own Unique Resource Identifier (URI). Thus, at the macro level, palatial units are qualified and quantified in to a form which makes sense in terms of human discourse.

Close georeading

The relatively basic ontological structure of the HGC, and its reliance on a carto-bibliographic formulation of spatial information, allows it to treat place digitized from both maps and text

consistently. Both rely on a process of “close georeading” of the source. In a recent extension of the project, placenames from two historical maps of Cyprus, the *Cyprus Insula Nobilissima* by Giovanni Francesco Camocio, published in 1566 (Figure 3), and the *Carte de l’isle cypre*, published in 1720 by Pierre Moullart-Sanson (Figure 4) have been transcribed and prepared for publication in the HGC². Both maps long predate the scientific practices of triangulation and photogrammetry upon which cartography rested before the advent of satellite photography; and are likely to have been compiled from lists and itineraries, as described above; and are thus based entirely on reading of textual sources and secondary observation. On the *Carte de l’isle cypre* 79 placenames are identifiable, on the *Cyprus Insula Nobilissima*. Both rely on Venetian prototypes, and replicate errors therein. On the former, for example, the named places between Pissouri in the south west up to the Akamas Peninsula appear in the wrong order, with Cape Lara conflated with Zephyros, with this location well to the south of Paphonea, which is likely to equate to Nea Paphos; which is in fact to the south of present-day Cape Lara. The HGC’s data structure allows the placename reference to be treated distinctly from the (distorted) cartography of the map itself and allows us to create a schematic representation of the source itself. The output is presented on a Cartesian map which, while imperfect in the ways described, makes a deeper sense when read in conjunction with the gazetteer data.

Conclusion

Digitization has never just been about building resources for (re)use by other scholars, but rather about exposing the thing or things being digitized to new critical processes and analyses using digital methods. The digitization of text has long been one of the key processes of the Digital Humanities, and it has always been hedged with critical frameworks and apparatuses (such as XML, TEI and the competencies which go with it) which enable the texts produced to

² This work was carried out as part of the “Ancient Place of Cyprus” project at Stanford University’s Center for Electronic Spatial and Textual Analysis, with the assistance of students Nicole Follmann, Helen Margaret Thomaidēs and Kevin Garcia.

be structured, interpreted and analysed using the affordances of the digital medium. These are precisely the sorts of frameworks which human geographers working with GIS in the 1990s and 2000s developed for the conversion of platial data into digital form; the resulting set of practices being loosely labelled “critical GIS” (Schuurman 2000; Leszczynski, 2009). My argument here is that a commonly understood and shared set of practices and approaches in needed for the creation of spatial data in the humanities, of the sort that critical GIS has provided elsewhere. A key distinction from what has gone before is that is this this set of practices must effectively handle the separation in time between the author/creator of the material in which the place was first represented, and the digitizer/analyst. The Heritage gazetteer of Cyprus achieves this by adopting a cartobibliographical approach, in which the date of the attestation is preserved as part of the gazetteer record. We trace the passage of time by linking carto-bibliographical information to reductive representations which distinguish one place from another, and different attestations/spellings of the same place at different times.

I have attempted to show here that what – principally – separates the spatial humanities and human geography is the passage of time. Whereas the spatial humanities are overwhelmingly concerned with the artefacts, writings, cultures and texts of the past, human geographers are overwhelmingly concerned with the observation of human behaviour, in place, in the present. However, despite the shared methodologies and technologies of the two domains, future work needs to articulate the overlaps and distinctions between the two in the light of the key epistemological shift from study of the present to study of the past. This would enable what might be characterized a methodological commons for the spatial humanities. The methodological commons is not a new concept in the digital humanities. In 2003, Willard McCarty, developing a schematic map of the field (then known as humanities computing employed a methodological commons as a collective for a set of “computational techniques shared among the disciplines of the humanities and closely related social sciences” (McCarty

2003). In the present context, a methodological commons for the spatial humanities takes GIS as a set of computational techniques shared between the sub-domains of the humanities. The principle characteristic these share is that the places and spaces being mapped are separated in time from the observer/cartographer/mapper/developer; who must therefore rely on a particular set of processes and methods to make data from information (again, employing Leszczynski's terminology).

In areas closely allied areas to critical GIS – human geography being the most closely allied – there is typically little such temporal separation between observer and observed. It is only by appreciating this epistemological distinction that the two areas can absorb lessons from one another. A methodological commons for the spatial humanities must be informed by the standards, data formats, structures and modes of precision inherent in GIS, which can be used to analyse cultural spaces, and must draw on the ways in which humanists already characterize place in text and maps (as they have, in some cases, for centuries). The widespread use of GIS in both the spatial humanities and human geography; the lowering of barriers to participatory practice in digital environments, and a shared set of open web standards for the digital manipulation of spatial data (in the form of vector and raster GIS representation), now invites a critical review of how the 'qualitative extension' of GIS works in both domains; and what bridges can built between their epistemologies.

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Figures

Figure 1. London, represented in the www.geonames.org gazetteer.

Figure 2. Heritage Gazetteer of Cyprus.

Figure 3. *Cyprus Insula Nobilissima* by Giovanni Francesco Camocio (1566). Reproduced with permission from the *Sylvia Ioannou Foundation*.

Figure 4. *Carte de l'isle cypre* by Pierre Moullart-Sanson (1720). Reproduced with permission from the *Sylvia Ioannou Foundation*.