



Cartography I: Mapping narrative cartography

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Sébastien Caquard

Concordia University, Canada

Abstract

This report focuses on the growing interest in the relationship between maps, narratives and meta-narratives. Following a brief historical contextualization of these relationships, this report explores their current state in the Geoweb era. Using the distinction between story maps and grid maps as an analytical framework, I review emerging issues around the extensive use of technologies and online mapping services (i.e. Google maps) to convey stories and to produce new ones. Drawing on literature in film studies, literary studies, visual arts, computer science and communication, I also emphasize the emergence of new forms of spatial expressions interested in providing different perspectives about places and about stories associated to places. In sum, I argue that mapping both vernacular knowledge and fiction is central to understanding places in depth.

Keywords

fiction, geoweb, Google maps, narratives, OpenStreetMap, story maps

I Introduction

‘Story maps’, ‘fictional cartography’, ‘narrative atlas’ and ‘geospatial storytelling’ are some of the terms that characterize the growing interest in the relationship between maps and narratives. This interest is evident in the countless number of blog posts presenting and discussing maps that appear in a range of narrative forms.¹ These posts reflect on the pervasive presence of maps in contemporary literature (Ljunberg, 2003), cinema (Caquard, 2009), and fiction in general (Cartwright, 2010). Maps and cartography are also recurrent fictional themes (Westphal, 2007), a point illustrated by the latest novel by Michel Houellebecq entitled *La Carte et le Territoire (The Map and the Territory)* (2010). In addition, maps are more and more commonly used as an analytical tool to explore the spatial dimension of narratives, marking the emergence of hybridized practices such as literary

cartography (Arias, 2010; Moretti, 1999), cinematic cartography (Conley, 2007), and geomeia (Thielmann, 2010). Finally, the relationship between maps and narratives is also reflected in the growing presence of personal and collective narratives on digital maps. With the extension of Web 2.0, any internet user can easily geotag places with stories and geocode journeys and narratives (Amoroso, 2010). These stories can be individual and anecdotal, as well as collective and deeply politicized.

These numerous relationships between maps and narratives indicate the importance of spatiality in the arts and the social sciences

Corresponding author:

Department of Geography, Planning and Environment, Concordia University, H 1255-26 (Hall Building), 1455 de Maisonneuve W., Montréal, Québec H3G 1M8, Canada. Email: scaquard@alcor.concordia.ca

(Cosgrove, 1999; Sui, 2010; Warf and Arias, 2009), as well as the significance of the visualization of spatial information (Dodge, 2011). They also emphasize the relevance of envisioning contemporary cartography through a narrative lens. In this first of three reports on cartography, I review the multiple relationships between maps and narratives, beginning with a brief historical contextualization of their interactions. I then move to explore these relationships in the context of the geoweb, investigating the distinction between story maps and grid maps (Macfarlane, 2007) as an analytical framework. Finally, I review the current state of the relationship between maps and narratives in contemporary arts, literature and cinema.

II Brief contextualization

The history of cartography cannot be dissociated from narratives. On one hand, cartographers traditionally relied on stories from scouts and explorers to help them fill in the blanks on their maps. On the other, painters, writers and filmmakers have used maps extensively (Orueta, 2010) in order to locate their narratives, to ground them to tangible and credible places (Conley, 2007; Joliveau, 2009), to stimulate the imagination of their audiences, as well as to diffuse ideologies (Piatti and Hurni, 2009; Pond, 2010). Maps have also been continuously infused by metanarratives, as is best illustrated by the allegorical dimension of the famous TO map during the Middle Ages, and by the close relationship between modern cartography and nation-state building (Crampton, 2010b). As pointed out by Martin Brückner (2006) in the context of the nation-state buildings in the Americas, the national map provided a unique way to transform the 'untenable fiction' of a national union between heterogeneous groups and regions into reality. The production of these fictional nationalistic metanarratives has been supported by the modern need to scientifically measure, control, exploit and claim territories with maps.

The fundamental contradiction of conveying metanarratives (i.e. discourses) through the development of modern cartographic practices (i.e. science) has only been revealed since the 1980s with the development of critical cartography. Critical cartographers have exposed hidden, and sometimes hideous, narratives and agendas embedded in maps, including their metanarratives. They have also unveiled the potential of maps to tell stories (Jacob, 1992), inviting readers to journey through imaginary and pleasurable worlds (Wood, 1987). Overall, the critical turn in cartography has dramatically modified the relations between maps and narratives in two ways: by deconstructing and exposing the metanarratives embedded in maps, and by envisioning maps as a compelling form of storytelling.

The potential of maps to tell stories has been further explored by different authors. For instance, Robert MacFarlane (2007) introduces the concept of 'story maps' to describe forms of spatial expressions that embody our personal experiences of the environment and contribute to creating a deep understanding of places. The idea that a story map is defined by its experiential dimension echoes other researchers' acknowledgement of the importance of developing emotionally charged maps and geovisualizations in order to better understand places and to mobilize for action (Aitken and Crane, 2006; Dodge et al., 2009; Kwan, 2008; Nold, 2009). MacFarlane opposes these *story* maps to *grid* maps, best illustrated by road maps, which, as he describes, 'make the landscape dream-proof, impervious to the imagination' (p. 142). The grid map is seen as a way of suppressing alternative geographical imagination, just like any other authoritative and functionalistic map (Phillips, 1997). MacFarlane concludes by arguing that grid maps 'encourage the elimination of wonder from our relationship with the world. And once wonder has been chased from our thinking about the land, then we are lost' (Macfarlane, 2007: 145). This paradox of becoming lost by getting too well located

resonates with previous practices such as the Situationists' drift, which describes a random urban journey in order to challenge the functionalist use of the city and to facilitate the crossing of psychogeographic barriers (see Wood, 2010a, 2010b, for an updated discussion on this topic). It also emphasizes the tension that exists between story maps and grid maps. This tension provides us with an analytical framework for the study of narrative cartography in the Web 2.0 era.

III From grid map to story map

I The new digital grid map

Within the context of the geoweb, any internet user can log on to an online mapping platform and add her own narrative or data on top of a base map (e.g. Google Map). The base map – or grid map – is quickly becoming the reference to locate ourselves in the world, to reach a destination and to share all variety of data, including narratives, associated with places. Base maps are provided by large companies such as Google (e.g. Google Maps) and Microsoft (e.g. Bing Maps), and rely more and more on user-generated content – also known as crowdsourcing – for their updates. OpenStreetMap project (OSM) is the most successful crowdsourcing mapping project, providing a free open source base map for the entire world. Beside some inconsistencies in terms of completeness and accuracy – due mainly to the varying numbers of contributors in a given area (Haklay et al., 2010) and to how well they respect the given guidelines (Girres and Touya, 2010) – this collective endeavour has been quite successful, with over 387,000 registered OpenStreetMap users as of April 2011. This success has been explained by the willingness of individuals and groups to produce and share geographic information (Gerlach, 2010). Just as the sharing of millions of digital pictures over the internet corresponds to 'the desire to participate in the human' (Rose, 2010: 258), the sharing of

millions of spatial objects may correspond to that very same desire.

This feat has attracted the attention of large online mapping service producers who have rapidly developed different strategies to exploit the promising resource that is crowdsourcing. The rapprochement between OSM and Microsoft's Bing Maps in 2010 illustrates Microsoft's business strategy, which can be summarized as such: Microsoft lends its high-resolution satellite images to OSM to allow individuals to digitize road segments and other information; these individuals keep the ownership of their data but they 'are granting to Microsoft free permission to use, copy, distribute, display, publish, transcode and otherwise modify [their] submission' (Microsoft, 2011). The strategy employed by Google is slightly different from that of Microsoft. Google has developed a specific application called Google Map Maker that relies on volunteer contributions to update and maintain its base map. According to Andrew Boulton (2010), Google plays on the commitment to a democratic mapping vision in order to create a sense of belonging to a community that reciprocally stimulates the free participation of volunteers in their project. Both Microsoft and Google's strategies emphasize the trend toward the exploitation of crowdsourcing dedicated to the betterment of private-sector interests. Digitizing, which was once considered as the most tedious part of any GIS project, has been turned by Google and Microsoft – as well as by OSM – into an enjoyable activity. This obviously raises many issues around ownership of data, controls and ethics (Gerlach, 2010), as was discussed in the recent symposium entitled 'Mapping Ethics: New Trends in Cartography and Social Responsibility' (EPF, Lausanne, April 2011). This also raises many major criticisms from within the Open Source Community that accuse Google of exploiting volunteer work and the Open Source model (Maron, 2011). These criticisms add to previous ones regarding the impact that the Google ranking algorithm plays in ordering

and framing places of interest (Zook and Graham, 2007).

Furthermore, these critiques are important in the context of the increasing role given to maps on the internet. More and more pieces of data are now tagged with geographic references – such as geographic coordinates, addresses, and place names – and more and more often these data are accessible through maps. The online map is becoming a ‘navigational platform’ (November et al., 2010), not only to help us navigate through the world, but also to guide us through a wealth of data. The concept of navigational platform reflects the dramatic transformation of the functions of maps on the internet. At a conceptual level, this navigational metaphor is replacing the conventional correspondence theory based on the illusory idea that maps should resemble as much as possible the territory and the phenomena mapped (Crampton, 2003; November et al., 2010). At a more concrete level, this metaphor reflects the growing role of maps in our daily lives. The idea that all information can be searchable by place is what Google calls the ‘GeoIndex’ (Crampton, 2009b). This GeoIndex now frames the way we envision places and commodities, as illustrated by the growing presence of maps as the outcome of search processes using search engines such as Google and Yahoo. Maps have recently become the main interface for accessing data over the internet (Ron, 2008). These maps are framing the way we interact with space and cyberspace as was anticipated by Dodge and Kitchin (2001), as well as with data and commodities. These new digital grid maps are affecting our daily life in an unprecedented way.

2 From mapping stories to story maps

These recent technological advancements have also modified the relationships between maps and narratives. Places appearing in narratives, such as novels and historical documents, can

now be located and mapped automatically (Crampton, 2009b; Goodchild and Janelle, 2010). The increasing popularity of this process, called *geoparsing*, is directly linked to the development of digital gazetteers (Goodchild and Hill, 2008) in which place names are associated with geographic coordinates (e.g. geonames.org). For instance, Sallaberry et al. (2009) have developed a web service that aims to automatically extract places (as well as time) from text-based documents and to geolocate them. Loustau et al. (2008) use a similar approach to interpret and map travel diaries. The promises and expectations of *geoparsing* to systematically locate all forms of narratives – including film dialogues (Joliveau, 2009) – imply multiple challenges such as the best ways to achieve cartographic representation of imprecise geographies and vague places in a systematic way (Guo et al., 2008; Jones et al., 2008; Piatti et al., 2009). Indeed, narrative places are often described in general terms such as ‘south of the city’, and ‘near the lake’. The systematic transformation of human discourses and narratives into mappable entities has also been addressed within the context of ontology.

In short, an ontology reduces the world into entities and categories of entities that can be clearly defined in order to mine them, retrieve them, and map them at will (for more details, see Agarwal, 2005, or Schuurman, 2006). The study of ontology remains at the forefront of critical GIS (see, for instance, the stimulating exchange between Jeremy Crampton, 2009a, and Agnieszka Leszczynski, 2009) *geovisualization* (Elwood, 2008) and cartography (Varanka and Usery, 2010). The potential of ontology to better structure and map narratives has been explored by Kwan and Ding (2008) through the development of a ‘GIS-based narrative analysis’ called ‘*geo-narrative*’ (p. 446). Other authors, such as Evans and Waters (2007), have focused on developing cartographic applications to map the fuzziness and the vagueness of vernacular geography. Beside these attempts, ontology

remains a reductive process of transforming the world (Being) into entities (beings) (Crampton, 2010b), and this raises many issues with regard to its relevance for spatially structuring human discourses and narratives. These issues are compounded with regard to the mapping of oral histories and performances as discussed by Jeremy Crampton (2010a).

Oral discourse and performances are important forms of spatial expression in many indigenous communities. In indigenous culture, maps are often 'at the juncture of performance and artifact, of the visual and the aural, of the static and the dynamic' (Woodward and Lewis, 1998: 10). There has been a recent recognition of the social, cultural, historical and legal importance of these indigenous forms of spatial expressions, combined with a few attempts to give them some cartographic shapes (Caquard et al., 2009b; Pearce and Hermann, 2010). The transformation of oral indigenous knowledge into cartographic artifacts remains a complex issue (Laidler et al., 2010). It raises questions about the documentation, preservation and organization of this type of knowledge in digital form (Pulsifer et al., 2011), as well as about the quality and the depth of partnership building between communities and technical support (Crampton, 2010a; Laidler et al., 2011; Pulsifer et al., 2011; Wood, 2010b).

While, historically, scientific maps have been used by nation states to assert territorial rights over indigenous communities, indigenous groups all over the world are now challenging the authority and the limits of the state borders fixed by maps through different forms of narratives and expressions (Wood, 2010b). Despite these advances, Denis Wood (2010b) argues that the key question raised by Nancy Peluso (1995: 393) regarding 'the impacts of counter-mapping on resource control' have yet to be answered. This question has been reframed in the context of the Web 2.0. When Jeremy Crampton (2010a: 98) provocatively asks 'is OpenStreetMap an "indigenous" project?'

implying that such a project provides reliable data for any community including indigenous communities, Joe Gerlach (2010: 165) counters that OpenStreetMap is not an indigenous or a counter-mapping project since it does not 'tell the stories of disenfranchised indigenous populations faced with the prospect of annihilation by a Western hegemony'. Indeed, OSM can be seen as reinforcing the power of 'digital codes and practices that are unintelligible . . . to people who may need the map the most, but lack the technical literacy to handle them' (Gerlach, 2010: 167). This argument might be supported by the recent rapprochement between OSM and Microsoft, as discussed previously. In the context of the Web 2.0, open source mapping projects and crowdsourcing might be a step towards greater community control over territory and resources, but probably do not represent the breakthrough sometimes asserted.

IV Mapping narratives in the arts and humanities

The relationships between maps and narratives have also attracted the attention of contemporary artists (Harmon, 2009; Watson, 2009; Wood, 2006) and encouraged various interactions between arts and cartography (Caquard et al., 2009a; Cartwright et al., 2009; Monmonier, 2007). Contemporary artists are exploring new ways of expressing their feelings for and understanding of places through the use of maps and through mapping practices. Examples of this fusion of arts and cartography range from GPS drawing by Jeremy Wood (Lauriault and Wood, 2009) to walking as a way of addressing the performative nature of mapping (Vaughan, 2009); and from the political mapping of journeys and stories of illegal migrants crossing borders (Lasch, 2008; Maugeri, 2007) to the mapping of very personal feelings and emotions (Coulis, 2010). Mapping emotions has been framed as a way to politically engage communities and individuals in their processes of reclaiming some

control over the places that they inhabit (Nold, 2009).

In the humanities, the spatial turn has produced a keen interest in maps and cartography. Building upon the extensive work on literary geography (Hones, 2008; Saunders, 2010), literary cartography envisions mapping as a conceptual framework to improve our understating of the narrative structure of a novel (Bulson, 2007; Moretti, 1999). Literary scholars often use mapping as a metaphor to explore the relationships between an author and places structuring her/his work (Buchroithner, 2010; Edquist, 2009, 2010). Other scholars use maps to visualize these relationships (Cooper, 2008; Piatti et al., 2009). Franco Moretti (2007) has developed his own set of maps (to reveal the geography of novels) and diagrams (to reveal their intrinsic geometry, e.g. the relationships between characters). With the Geoweb, it is now possible to geotag novels and short stories and to retrieve them on site via geo-locative media such as cell phones (Løvlie, 2009).

The relationships between maps and narratives have also been addressed through a cinematographic lens. Film directors have been compared to cartographers because each has their own methods of representing time and space (Conley, 2007). A set of 'cartographic shapes' has been identified in early cinema (Castro, 2009), while cinema has been envisioned as a source of inspiration for developing new cartographic practices (Aitken and Crane, 2006; Caquard, 2009; Caquard et al., 2008; Crampton, 2008). Conversely, geospatial technologies are now commonly used by film enthusiasts to access location shooting. Although these technologies 'contribute to the development of an intermediary territory, a space between the real world and the fantasy world' (Joliveau, 2009: 36), questions about the cartographic representation of this intermediary world, which escapes the Euclidean dimension of cartography (Ungern-Stemberg, 2009), remain.

Bertrand Westphal (2007) offers, nonetheless, elements of an answer to this issue through his concept of geocritique. Geocritique can be defined as the study of places as they appear in different forms of fiction and media such as painting, cinema and literature. Building on Edward Soja's (1996) concept of Thirdspace, Westphal recognizes that places emerge from a combination of the real and the fictional. From this point of view, mapping the world is as much about mapping reality as it is about mapping fiction.

V Conclusion

On one hand, 'maps tell stories, and the stories those maps tell both reflect and create reality' (Gibson, 2011). On the other, as soon as a place is mapped it loses some of its potential to stimulate the reader's imagination (Pond, 2010). The map can either be a storytelling stimulator or a storytelling limiter, but this distinction does not necessarily follow the story map/grid map differentiation. Any map can become a storytelling stimulator or limiter depending on the context of its utilization and appearance (Caquard and Bryne, 2009). Furthermore, the distinction between the story map and the grid map is blurred by the fact that more and more often they coexist within a common mapping platform such as Google Maps. This type of application stimulates the production of spatial narratives by making them easy to map and distribute, and simultaneously restricts them through the framework provided by the base map. A theme that appears consistently throughout this review is the trend towards a hybridization: between cartography and creative disciplines; between the grid map and the story map; between fiction and reality; between the map and the territory.

The main character in the *The Map and the Territory*, the latest novel by French novelist Michel Houellebecq, argues that 'The map is more interesting than the territory' (Houellebecq, 2010: 82). The significance of this idea

is slowly developed throughout the novel: the map is more interesting than the territory because it is an idealized simplification of a complex – and often depressing – reality. This resonates with the idea that in the postmodern world most of the time the hyper-real appears joyful beside the deterioration of the environment to which it refers (Westphal, 2007). Translated into contemporary mapping practices, this might mean that Google has been producing a hyper-real perspective on the world through its pervasive mapping applications, a perspective that is often brighter than reality. Paraphrasing Houellebecq, in other words, ‘Google Maps are more interesting than the territory’. This is a fascinating and disturbing trend that requires careful attention.

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Note

1. For example, <http://www.nicholastam.ca/2011/04/18/here-be-cartographers-reading-the-fantasy-map>, <http://www.thecinetourist.net>, <http://spacefiction.wordpress.com>.

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