SECTION FIVE

Power and Politics of Mapping

5.1

Introductory Essay: Power and Politics of Mapping

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Introduction

There is a long tradition of historical analysis that examines the production of maps, their development over time and their role in society. Such analysis implicitly concerns the power of mapping to influence social and economic relations in particular places and times. More recently, research has focused specifically on the politics and power of mapping; how power is captured in and communicated through maps to assert command and control of territory and socio-spatial relations; how power is bound up in the very creation and use of maps; and how mapping practices are used to resist and contest the exercise of power over space. Much of this research is framed within what has been termed critical cartography (Harley 1989; Crampton and Krygier 2005) and critical GIS (Pickles 1995; Curry 1998; Schuurman 1999; O'Sullivan 2006). Critical cartography is post-positivist in its approach, drawing on a range of social theory to re-examine cartographic representations and the wider milieu of mapping processes. It is often avowedly political in its analysis of mapping praxis, seeking to deconstruct the work of maps and the science that produces them, often undertaking to produce alternative maps that are sensitive to the power relations at play. On the one hand, this has led to an examination of the power of maps and the work they do in the world, and on the other to new forms of collaborative and counter-mapping that seek to produce empowering and emancipatory cartographies, which subvert the status quo. In both cases, there is an explicit recognition that maps are a product of power at work and that they are powerful tools in struggles of domination and resistance. In this section excerpts from a number of key readings that seek to document and theorize the power of maps are provided.

Cartographic power, nation building and colonial conquest

> 'As much as guns and warships, maps have been the weapons of imperialism'.Brian Harley, *Maps, Knowledge and Power*, 1988.

Mapping has been, and remains a key device in the formation of nation building, colonial projections of power and the control of distant imperial lands. This is achieved in part because of the unique properties of maps to project a coherent representation of territorial continuity and the unity of people to a common cause (be it monarch, religion or government ideology).

Maps then have been important devices in forming national identity and nation building. Anderson's (1991: 175) thesis of nationalism as imagined community, for example, highlights the extensive symbolic power of 'map-as-logo', deployed in an 'infinitely reproducible series, available for transfer to posters, official seals, letterheads, magazine and textbook covers, tablecloths and hotel walls. Instantly recognisable, everywhere visible.' Maps showing space divided according to political authority are a powerful assertion of state sovereignty and have become so

ingrained as a 'natural' template that such borders are present even in maps which are not explicitly political (e.g. weather maps). The symbolic power of cartography to make borders is endlessly exploited in the 'grand games' of geopolitics between states, where the 'maps provided the master image of the nation's superiority and centrality in global affairs' (Vujakovic 2002: 198), such as Halford MacKinder's cartographic articulation of the 'Eurasian heartlands' thesis at the height of British imperial power.

The instrumental role of Western mapping in imperial exploitation through the erasure of indigenous peoples from the colonisers' maps provides perhaps the strongest evidence of the malignant power of cartography. In the partition of India, the annexation of Palestinian land, or the 'terra nullius' of Australia, cartography has been integral to colonial practices, providing both spatial justification and a rationalising tool for colonisers, past and present. For example, Bassett's (1994: 333) analysis of maps made by European imperial powers at the end of the nineteenth century demonstrates how effectively they 'promoted the appropriation of African space under the rhetoric of commerce and civilisation.'

Winichakul (1994, excerpted as Chapter 5.4) provides a detailed example of how mapping was a key instrument in the formation of a nation, charting the tensions between the Siam royal court and the struggle between French and British colonial interests in South East Asia. Competition in surveying and a small number of cartographic artefacts at the end of the nineteenth century reveal the constructive power of mapping. Up to this point, Siam was largely unmapped, in terms of formalised Western representational science, and its territorial borders were tacitly known by local knowledge and observed tribal customs. Through the process of surveying and mapping Siam underwent a cultural re-imagining to produce a new 'geo-body' (a socio-geographical understanding of the country). Winichakul discussed how the cartographic representations produced did not simply reveal the geography of Siam, but also brought forth a new sense of what Siam was and could become; they anticipated a shared vision of a nation, rather than depicting one already established. Moreover, maps enabled monarchical power to assert its authority over territory and to enforce new forms of administrative control, significantly enhancing their power to influence local communities and shape social life. In a similar vein, Herb (1997) on Germany, Ramaswamy (2010) on India and Schulten (2001) on the United States of America analyse the power of mapping to shape national consciousness in the service to certain interests.

Along comparable lines Sparke's article (1998, excerpted as Chapter 5.7), The Map that Roared, documents the ways in which such large-scale, centrally organised and administered Statist cartographic programmes produced a 'geo-body' that had the power to undermine the validity of local knowledges and obliterate the legitimacy of indigenous mapping traditions. By carefully tracing out how First Nations maps, territorial claims and knowledge were treated during a long court trial, Sparke reveals the subtle ways in which Western cartographic practice built up and maintained its hegemonic status as the only legitimate form of spatial representation, and thus the arbiter of property claims and disputes. The select set of map artefacts of the Canadian government thus enjoyed a particular sovereign status that worked for the interests of the state and settler populations and at the expense of indigenous First Nations peoples. This kind of cartographic power is evident in many colonial and postcolonial struggles including contemporary geopolitical situations (e.g. Gregory's 2004 analysis of cartographic logics underpinning imperial moves in Palestinian land, Iraq and Afghanistan; all areas were heavily mapped by earlier rounds British colonial cartographers and geographers.)

That maps have this power is, for a large part, due to the fact that they have certain, universal qualities. As Harvey (1989, excerpted as Chapter 5.2) notes, Western European cartography was transformed during the Renaissance, adopting perspectivism and Cartesian rationality to seek to produce a universal system for mapping the whole of the known world. For Latour (1992, excerpted as Chapter 1.9) this new scientific approach enabled maps to become 'immutable mobiles'; that is, mechanisms used to generate and circulate cartographic information which fixed particular meanings. The form maps took (in terms of scale, legend, symbols, projection etc.) became familiar and standardised through established protocols so that the map became a stable, combinable and transferable form of knowledge, portable across space and time. As such, maps produced in distinct political and cultural contexts, say in the royal courts of France, Germany, Portugal, Spain, The Netherlands and so on, became decipherable and applicable to someone from another country because they shared a body of common principles and standards that rendered them easily legible. Moreover, cartographic data transported from around the planet in the form of latitude and longitude observations and measured surveys could be reliably interpreted and meaningfully applied to update charts of an area, or be combined with other information, despite the fact that the cartographer was unlikely to have ever visited the area they were mapping. As such, the media of maps became increasingly important because they were mobile, immutable, flat and foldable (and therefore easily carried), modifiable in scale, reproducable, capable of being recombined and

layered, but also optically consistent and amenable to insertion into other texts. The results were significant, one can argue, because they contributed to the efficiency and effectiveness of small European nations projecting their military and commercial power over far distant lands and with large indigenous populations.

Like Harvey, Latour contends that these qualities allowed exploration and trade and ultimately contributed to the brutal violence of colonialism by: making territory knowable, navigable and claimable; allowing control to be exerted from afar; and enabling knowledges about new territories to be effectively transported globally. Maps became a vital part in the cycle of knowledge accumulation that allowed explorers to '*bring* the lands *back with them*' and to successfully send others in their footsteps (Latour 1987: 220, original emphasis). Latour thus argues that the European mapmakers of the Renaissance produced centres of calculation (key institutions of knowledge accumulation and cartographic practice) that came to dominate much of the world. In so doing, he contends that the maps produced did not simply represent space at a particular time, but were mappings bringing into being in new space-times. Maps opened up new possibilities – such as reliable long distance trade and territorial conquest by tiny forces, operating many thousands of kilometres from home – and thus created new geographies and histories. Maps thus served political and economic interests, enabling the demarcation of boundaries, assigning property rights, detailing rights of passage, securing transportation routes and guiding military campaigns. Such pursuits were critical for those in power, such as the sovereign or religious elites, to assert, exploit, control, maintain and extend their effective rule over people and places. As time went on, Western cartography became ever-more sophisticated in design and capacity to project power, including the effective display of statistical knowledge relating to populations (providing a spatial overview of inhabitants as well as lands) and the use of propaganda mapping explicitly aimed at creating particular views about specific places and to reinforce national and regional identities (Anderson 1991; Pickles 1991, excerpted as Chapter 5.3).

An important way that the power of the 'cartographic gaze' works, is by dehumanising the landscape, allowing powerful groups to exercise power at a distance, 'removed from the realm of face-to-face contacts' (Harley 1988: 303). Maps are foundational to modern systems of governmentality, as evidenced in the extensive use of statistical mapping by state bureaucracies. These cartographies are designed to produce a 'rationality of calculability of populations' (Crampton 2004: 43), where people can be managed *through* the map more easily because action can be taken without witness to human consequences. Indeed,

maps come to symbolise the governmental processes of regimentation in which particular places, individual homes and complex lives are rendered as mere dots. This kind of de-socialisation of space through cartographic abstraction is seen most brutally in the military. Modern war making is now frighteningly like a map game in which death is played out on digital geospatial interfaces that render human landscapes into an impersonal terrain of targets and threats that can be engaged by so-called precision-guided weapons (Gregory 2010).

The meaning and power of maps

In addition to examining in broad terms how maps have been enrolled as potent instruments of state control and colonial security, there is now a significant body literature examining in detail how power is constituted in the very design and creation of maps, and how maps are used to reproduce specific power relations. For example, Wood and Fels (1986, excerpted as Chapter 1.7), Harley (1989, excerpted as Chapter 1.8) and Pickles (1991, excerpted as Chapter 5.3) all argue that all maps are inherently ideologically loaded, vested with the interests of their creators. This is most visible in maps employed as overly propagandist displays, designed to reshape how people think about a particular area or stir up emotional response to an issue, but is inherent in even the most seemingly benign maps, such as the supposedly neutral, scientific productions of the topographic map, or school atlas. This is because all map designers have to make a whole series of decisions regarding content, presentation, scale and so on that directly affect what the map communicates and how it is read. As a consequence, maps designed by state agencies claim a particular authority and communicate selective messages and include all kinds of 'silences' about other information. Over the past two decades a number of scholars have actively critiqued such maps from a variety of perspectives, such as feminism and post-colonialism.

This analysis looks beyond the aesthetic connoisseurship of the map collector or the rules of 'good design' considered in Chapter 3.1, and focuses on the 'second text' of the map. As such, deconstructing the map means exposing the reasons behind the selectivity of what is displayed and demystifying the origins of the signs used. Everything about the look of a map is subjective and to some extent arbitrary in semiotic terms, but people usually ignore this because they read modern maps as 'natural', having been thoroughly indoctrinated into the conventions of cartographic sign systems (i.e. a blue line for a river). This has important implications because '[o]nce it is accepted that certain conventions are "natural" or "normal", the danger is

that they acquire a coercive and manipulative authority' (Harley 2001: 202).

For example, feminist scholars have critiqued the Cartesian rationality of modern cartography as being a particularly masculinist way of thinking and representing the world. Such a way of thinking employs the 'god trick' of a disembodied and emotionless view from nowhere, floating some way above the Earth, wherein spatial relations can be holistically mastered and manipulated (Haraway 1991; Rose 1993). As noted by Huggan (1994, excerpted as Chapter 5.5), from a feminist perspective mapping codifies, defines, encloses and excludes, subjugating land to a male gaze and representation (also see Kwan 2007, excerpted as Chapter 5.9). Such an approach pre-supposes that it is possible to objectively and neutrally capture and process the world, and to know, dominate and master it. From a related perspective, Brown and Knopp (2008, excerpted as Chapter 5.10) detail how Seattle's gay history had been written out of the city's spatial register through past maps silences concerning the venues important to its gay citizens. Maps then are most often hetero-normative; that is, they assume and reinforce a heterosexual orthodoxy, wherein traditional maps only portray a heterosexual world.

Other work along this vein on includes consideration of the potential of mapping to reinforce able-bodied stereotypes and map a world that fails to serve the interests of different groups of disabled people (see for example Matthews and Vujakovic 1995 on mapping for wheelchair users and Gleeson 1996 on visually impaired people and their marginalisation through sighted map design). Other social categories are also 'off the map' with interests that are rarely mapped out. Research in this context has focused in particular upon ethnicity and the Othering potential of mapping that reflects largely white governing interests (Winlow 2001); but research has also focused on social class (Harley 1988) and age (Gerber 1993). The last twenty years has also seen a significant rise in the amount of 'map art', (Wood 2010), in which artists are playing with norms of cartographic representation to challenge different politics of space (Biemann 2002; Mogel and Bhagat 2007).

Cartographic power, surveillant knowledge and spatial control

As well as expressing power through their meaning, and selectivity and 'silences', maps can work explicitly as tools of the powerful for controlling territory and populations by enabling spatial surveillance and rendering people visible and identifiable to those in power. As Crampton (2003, excerpted as Chapter 5.8) and others such as Monmonier (2002) detail, maps have long been employed by states as a means to plot and track social, economic and environmental phenomena through statistical mapping. For example, during the nineteenth century a panoply of new forms of data generation, such as censuses, health and education records, housing registers, crime counts and so on were introduced as means to monitor societal changes, with much of these data represented in newly developed thematic mapping (Robinson 1982). Indeed, maps became important tools for identifying and addressing particular societal problems that were deemed significant or threatening, such as John Snow's celebrated epidemiological mapping of cholera cases in London which provided evidence that the disease was water borne. Mapping became a vital instrument for new, emerging systems of governmentality (how societies are organised and governed to fulfil certain aims) by revealing key spatial patterns and processes (Joyce 2003), and the surveillant potential of digital technologies described in Chapter 2.1 continues to grow.

The myriad ways that the state has come to rely on 'power through the map' to govern means that it is still far and away the largest patron of cartography, but mapping is also integral in capitalist accumulation by (re)ordering lived lives into markets, potential markets or obstructions to markets. For example, geodemographic mapping profiles individuals, fitting them into idealised consumer types, fixing them into a spatial grid of quantifiable economic value and ranking them based on their 'worth' or 'risk' (Curry 1997; Goss 1995). This easily leads to the discriminatory practice of 'redlining' – the term is derived from the mapping practice where communities deemed unprofitable or high risk and are denied services (e.g. Hillier's 2005 historical analysis of mortgage loan discrimination in Philadelphia).

In recent years, improvements in surveillance systems and mapping technologies have led to marked change in the ability to track and profile people and places. As Dodge and Kitchin (2005) show, the digital age has brought with it a qualitative shift in the amounts and kinds of data that can be generated and analysed. It has now become feasible and cost effective to harvest vast sums of data, at an increased spatial granularity, to process and map this data in real time, to collate and combine data in ever more sophisticated ways, to distribute the data instantly, display it on maps against other relevant layerS, and to store it in multiple forms for future use. Maps become a medium through which it is possible to spy in real time on most citizens. For example, it is possible to track the movements of people and vehicles through cities by mapping data automatically generated by ANPR traffic cameras, smart-card-ticketing on metros and mobile phone identifiers (Ratti *et al.* 2006). These changes raise significant

1 concerns with respect to civil rights, equity and privacy,
2 and yet they are supported by powerful discourses con-
3 cerning security, safety and economic rationality as well as
4 opening up profitable opportunities for business, which
5 inexorably encourage continued implementation for the
6 foreseeable future.
7
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9 # Cartographic power, counter-maps
10 and participatory mapping
11
12 While the potent role of cartographic power in social
13 domination by the state and corporation is unquestioned,
14 such hegemonic mapping is dialectical because it also
15 opens up new ways to resist. The practical and rhetorical
16 power of maps to articulate alternative perspectives is
17 always available. The power of the map can be used to
18 re-frame the world in the service of progressive interests
19 and to challenge inequality (such was the goal of the Peters
20 projection project), while the logo-map used to bolster the
21 state can be re-imagined as a potent emblem in anti-
22 colonial struggles (Huggan 1994, excerpted as Chapter
23 5.5). Wherever power is expressed it is met with some
24 forms of resistance and often counter movements, yet until
25 recently maps have only rarely been used to challenge
26 authority. Given the need to access data, specialist carto-
27 graphic resources and advanced cartographic skills, the
28 limits to counter-mapping are perhaps unsurprising. How-
29 ever many of the same technologies that facilitate carto-
30 graphic surveillance have been enrolled to create new forms
31 of counter- and participatory mapping that seek to
32 empower and emancipate people from specific forms of
33 oppression (for example Paglen's (2009) use of surveillant
34 tactics and techniques to expose the extent of the secret
35 state; for an example of protest cartography, see Colour
36 Plate Six, page xx). Q1
37 Greater availability of mapping software, new open
38 source tools and online services have drastically reduced
39 the skill base needed to produce professional looking maps
40 and have enabled users to scrutinise official data sets in
41 new ways and share their own data for analysis. These
42 trends have contributed to more people being able to
43 produce what Peluso (1995, excerpted as Chapter 5.6)
44 has called 'counter-maps'; maps that challenge power and
45 hegemony of state and commercial maps by representing
46 other interests, but which maintain the same standards of
47 production. In that sense, counter-maps appropriate the
48 state's 'techniques and manner of representation' in order
49 to re-territorialise the area being mapped and to make a
50 case for a redistribution of resources. Their creation and
51 circulation is designed to empower citizens and enable
52 resistance and protest. Counter-maps, then, are explicitly

political in ambition and seek to counterbalance the dis-
courses of government and capital by inserting local
views into the decision making process. In Peluso's case,
the counter-maps were of forest areas and resources as
delineated by local communities who used the maps to
challenge omissions of settlement and biodiversity, the
categorisation of land and management, and the placement
of boundaries. In Sparke's case (1998, excerpted as Chapter
5.7), the First Nations tribes used counter-maps to chal-
lenge the territorial claims and political administration.

Cartographic power has also been exploited by environ-
mental pressure groups and anti-globalisation activists to
counter the dominant corporate discourses by using the
authority of the map against itself (e.g. maps of the ozone
hole over the Antarctic become potent images in the mid-
1980s). This kind of counter-hegemonic cartographic
potential is evident in the work of radical geographer,
Bunge (1975: 150), and his expeditionary geography, map-
ping socially-polarised urban America, to 'depict a region
of super-abundance adjacent to a region of brutal poverty'
(Figure 5.1.1). In many examples of counter-cartography,
the actual maps themselves are not alternative in design
terms, making use conventional cartographic signs (e.g.
Bunge's 1975 dot maps, or Kidron and Segal's 1995 use of
choropleth mapping). The distinction that marks these
mapping projects as 'subversive' is that they exploit the
authority of cartography to ask difficult questions by
mapping the types of human phenomena (war, poverty,
violence against women) and landscape features (toxic
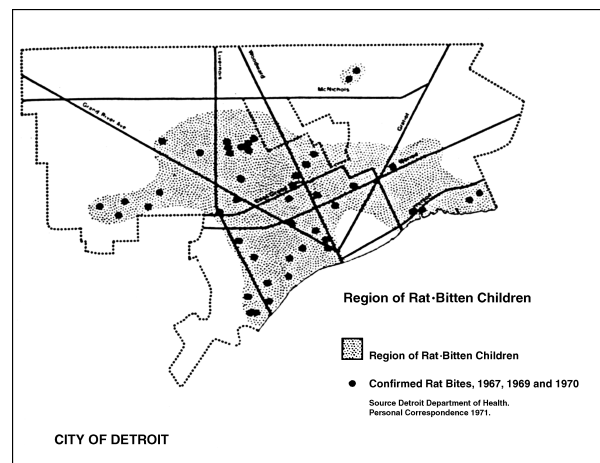waste sites, rat bites) that are usually deemed insignificant,

Figure 5.1.1 Example of the counter-cartography of William Bunge showing the rhetorical power of thematic maps to challenge the status-quo. (Source: Bunge 1975: 161.)

inappropriate or otherwise 'difficult' by mainstream gov-
ernment and commercial cartography and, therefore, gen-
erally left unmapped. They confront the norms of society
by using the conventional signs of the society's elite.
Another significant tactic in counter-cartography is chang-
ing scale and opening up authorship, for example in eco-
mapping, which stresses the importance of mapping local
areas by local people (Aberley 1993), and the empowering
of marginalised groups, such as having physically disabled
people map their experiences of hostile streetscapes
(Kitchin 2002).

The inclusion of local voices is often pursued through a
strategy of participation. Participatory maps are produced
with and by, as opposed to for, local groups. For example,
Kitchin (2002) reports a participatory mapping project
with a group of disabled people to create an access map of a
town to illustrate the problems of urban inaccessibility and
to campaign for inclusive planning. The group worked
together to devise a work plan, identify issues, create a
symbol set, survey the landscape, create and distribute the
final map. In so doing, the participants not only took
charge of the process, but gained new skills and knowledge,
and helped influence local decision making. This process of
collaboration and negotiation can be very rewarding to
both researcher and locals but it can also be fraught with all
kinds of issues and be time consuming, as detailed by
Brown and Knopp (2008, excerpted as Chapter 5.10). Such
'bottom-up' mapping is not without is own politics and
partiality of representations.

More recently, internet mapping portals have allowed
users to access and interact with growing volumes of
geographic data, such as map layers, high resolution aerial
photographs and satellite imagery, by using straightfor-
ward interfaces to produce their own maps. For example, as
Farman (2010, excerpted as Chapter 5.11) and Geller
(2007, excerpted as Chapter 2.12) detail, Google Earth is
one such online platform that enables users to access,
interact with, and update spatial data and to share related
information such as overlays, photographs, video clips,
artwork, notes and so on. Moreover, Google Earth is
complemented with bulletin boards that allow mappers
to discuss issues relating to the platform, the data it uses
and the data uploaded by other users.

In this sense, Google Earth is an example of what
Crampton (2009) terms 'Mapping 2.0'; mapping that is
distributed, participatory and social. Mapping 2.0 offers a
new form of mapping experience in which users can
become authors and through which the content is built
collaboratively. This collaboration is a form of so-called
'crowd sourcing', wherein many people volunteer perti-
nent information usually on their local patch, as detailed by
Goodchild (2007, excerpted as Chapter 4.10). Another well

documented example of a collaborative mapping is Open-
StreetMap, an open source project that largely uses 'crowd
sourced' GPS data to provide an alternative online map-
ping system to commercial and state systems. (See visual-
isation of the extent of OSM mapping in Colour Plate Five,
page xx.) The resultant detailed map database is distinctive
in that it is a wiki (everything is editable by everyone) and is
available to be used in projects without the burden of
restrictive copyright licenses that often limit how govern-
ment and commercial data can be used. Similarly, there are
discussion forums that encourage collaboration and
debate, and data are open to be edited and updated by
other users (which is not the case with commercial
and state data). Mapping 2.0 therefore has political and
practical ramifications, as it radically blurs the division
between mapmaker and map user, and begins to expose the
partiality of authorship and the ways authority of map
representations has to be manufactured.

Conclusion

The chapters excerpted in this section all make the case that
maps are not neutral, value-free spatial representations of
the world. Rather, they contend that power is inherently
bound within their very making and representation, in
their design and content, to communicate spatial relations
in a certain manner that seeks to assert or reproduce a
particular way of thinking about the world. Maps then
are ideologically loaded, representing the interests of
their creators, forming part of an armoury of political
instruments used to underpin claims with respect to ter-
ritory, to monitor people and police the places they live.
Given the power of maps, cartography has played an
important role in the building of nations and national
identities, the development of empires and colonies,
including the waging of war and violence, and in the
construction of efficient trading routes and the accumu-
lation of capital. Maps have served, and very much
continue, to extend and reproduce the power and influence
of those that created them. More recently, this power has
been harnessed by those who are usually subjugated by such
maps through the production of counter-maps that seek to
provide an alternative viewpoint and subvert dominate
socio-spatial relations. Indeed, new mapping technologies,
along with more access to relevant data, are significantly
reshaping who can produce maps and how they are
produced, in the process reconfiguring established carto-
graphic power relations. As such, a somewhat paradoxical
situation is arising – on the one hand, mapping is being
evermore used by states and corporations as a medium
through which to survey and control populations, and, on

the other, maps are being used to provide counter-discourses to states and corporations with the aim of producing more emancipatory and empowering outcomes. There is no denying then the power of maps.

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