

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52

SECTION FIVE

Power and Politics of Mapping

UNCORRECTED PROOF

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52

UNCORRECTED PROOF

5.1

Introductory Essay: Power and Politics of Mapping

Rob Kitchin, Martin Dodge and Chris Perkins

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

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

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

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

51 Along comparable lines Sparke's article (1998, excerpted
52 as Chapter 5.7), *The Map that Roared*, documents the ways

in which such large-scale, centrally organised and admin-
istered 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 treat-
ed 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 underpin-
ning 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 par-
ticular 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 map-
ping. As such, the media of maps became increasingly
important because they were mobile, immutable, flat
and foldable (and therefore easily carried), modifiable in
scale, reproducible, capable of being recombined and

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

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

42 An important way that the power of the 'cartographic
 43 gaze' works, is by dehumanising the landscape, allowing
 44 powerful groups to exercise power at a distance, 'removed
 45 from the realm of face-to-face contacts' (Harley 1988: 303).
 46 Maps are foundational to modern systems of governmen-
 47 tality, as evidenced in the extensive use of statistical map-
 48 ping by state bureaucracies. These cartographies are
 49 designed to produce a 'rationality of calculability of
 50 populations' (Crampton 2004: 43), where people can be
 51 managed *through* the map more easily because action can
 52 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 ideo-
 logically loaded, vested with the interests of their creators.
 This is most visible in maps employed as overly propa-
 gandist 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 produc-
 tions 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 thor-
 oughly 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

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

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

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

41 42 43 **Cartographic power, surveillant 44 knowledge and spatial control** 45

46 As well as expressing power through their meaning, and
47 selectivity and 'silences', maps can work explicitly as tools
48 of the powerful for controlling territory and populations by
49 enabling spatial surveillance and rendering people visible
50 and identifiable to those in power. As Crampton (2003,
51 excerpted as Chapter 5.8) and others such as Monmonier
52 (2002) detail, maps have long been employed by states as a

means to plot and track social, economic and environ-
mental phenomena through statistical mapping. For exam-
ple, 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 the-
matic mapping (Robinson 1982). Indeed, maps became
important tools for identifying and addressing particular
societal problems that were deemed significant or threat-
ening, 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 pro-
files 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 discrim-
inatory practice of 'redlining' – the term is derived from the
mapping practice where communities deemed unprofit-
able 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 sophisti-
cated 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.

9 Cartographic power, counter-maps 10 and participatory mapping

11 While the potent role of cartographic power in social
 12 domination by the state and corporation is unquestioned,
 13 such hegemonic mapping is dialectical because it also
 14 opens up new ways to resist. The practical and rhetorical
 15 power of maps to articulate alternative perspectives is
 16 always available. The power of the map can be used to
 17 re-frame the world in the service of progressive interests
 18 and to challenge inequality (such was the goal of the Peters
 19 projection project), while the logo-map used to bolster the
 20 state can be re-imagined as a potent emblem in anti-
 21 colonial struggles (Huggan 1994, excerpted as Chapter
 22 5.5). Wherever power is expressed it is met with some
 23 forms of resistance and often counter movements, yet until
 24 recently maps have only rarely been used to challenge
 25 authority. Given the need to access data, specialist carto-
 26 graphic resources and advanced cartographic skills, the
 27 limits to counter-mapping are perhaps unsurprising. How-
 28 ever many of the same technologies that facilitate carto-
 29 graphic surveillance have been enrolled to create new forms
 30 of counter- and participatory mapping that seek to
 31 empower and emancipate people from specific forms of
 32 oppression (for example Paglen's (2009) use of surveillant
 33 tactics and techniques to expose the extent of the secret
 34 state; for an example of protest cartography, see Colour
 35 Plate Six, page xx).

36 Greater availability of mapping software, new open
 37 source tools and online services have drastically reduced
 38 the skill base needed to produce professional looking maps
 39 and have enabled users to scrutinise official data sets in
 40 new ways and share their own data for analysis. These
 41 trends have contributed to more people being able to
 42 produce what Peluso (1995, excerpted as Chapter 5.6)
 43 has called 'counter-maps'; maps that challenge power and
 44 hegemony of state and commercial maps by representing
 45 other interests, but which maintain the same standards of
 46 production. In that sense, counter-maps appropriate the
 47 state's 'techniques and manner of representation' in order
 48 to re-territorialise the area being mapped and to make a
 49 case for a redistribution of resources. Their creation and
 50 circulation is designed to empower citizens and enable
 51 resistance and protest. Counter-maps, then, are explicitly
 52

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,

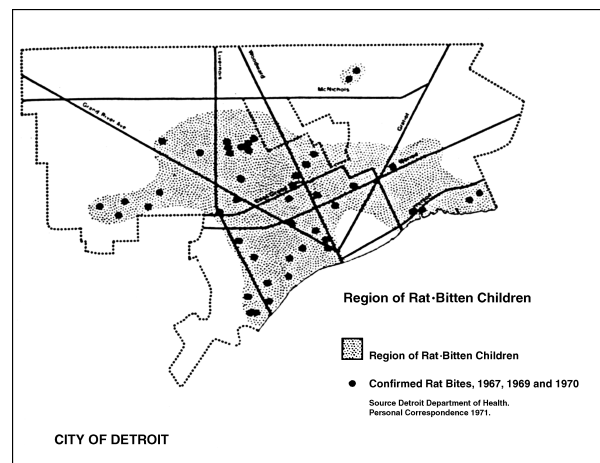


Figure 5.1.1 Example of the counter-cartography of William Bunge showing the rhetorical power of thematic maps to challenge the status-quo. (Source: Bunge 1975: 161.)

1 inappropriate or otherwise ‘difficult’ by mainstream gov-
 2 ernment and commercial cartography and, therefore, gener-
 3 ally left unmapped. They confront the norms of society
 4 by using the conventional signs of the society’s elite.
 5 Another significant tactic in counter-cartography is chang-
 6 ing scale and opening up authorship, for example in eco-
 7 mapping, which stresses the importance of mapping local
 8 areas by local people (Aberley 1993), and the empowering
 9 of marginalised groups, such as having physically disabled
 10 people map their experiences of hostile streetscapes
 11 (Kitchin 2002).

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

30 More recently, internet mapping portals have allowed
 31 users to access and interact with growing volumes of
 32 geographic data, such as map layers, high resolution aerial
 33 photographs and satellite imagery, by using straightfor-
 34 ward interfaces to produce their own maps. For example, as
 35 Farman (2010, excerpted as Chapter 5.11) and Geller
 36 (2007, excerpted as Chapter 2.12) detail, Google Earth is
 37 one such online platform that enables users to access,
 38 interact with, and update spatial data and to share related
 39 information such as overlays, photographs, video clips,
 40 artwork, notes and so on. Moreover, Google Earth is
 41 complemented with bulletin boards that allow mappers
 42 to discuss issues relating to the platform, the data it uses
 43 and the data uploaded by other users.

44 In this sense, Google Earth is an example of what
 45 Crampton (2009) terms ‘Mapping 2.0’; mapping that is
 46 distributed, participatory and social. Mapping 2.0 offers a
 47 new form of mapping experience in which users can
 48 become authors and through which the content is built
 49 collaboratively. This collaboration is a form of so-called
 50 ‘crowd sourcing’, wherein many people volunteer perti-
 51 nent information usually on their local patch, as detailed by
 52 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

1 the other, maps are being used to provide counter-dis-
 2 courses to states and corporations with the aim of pro-
 3 ducing more emancipatory and empowering outcomes.
 4 There is no denying then the power of maps.

7 References

- 10 Aberley, D. (1993) *Boundaries of Home: Mapping for Local*
 11 *Empowerment*, New Society Publishers, Gabriola Island, BC.
- 12 Anderson, B. (1991) *Imagined Communities: Reflections on the*
 13 *Origins and Spread of Nationalism*, 2nd edn, Verso,
 14 New York.
- 15 Bassett, T.J. (1994) Cartography and empire building in
 16 nineteenth-century West Africa. *Geographical Review*, **84**
 17 (3), 316–335.
- 18 Biemann, U. (2002) Remotely sensed: a topography of the
 19 global sex trade. *Feminist Review*, **70**, 75–88.
- 20 Brown, M. and Knopp, L. (2008) Queering the map:
 21 the productive tensions of colliding epistemologies. *Annals*
 22 *of the Association of American Geographers*, **98** (1), 40–58.
 23 (Excerpted as Chapter 5.10.)
- 24 Bunge, W. (1975) Detroit humanly viewed: the American
 25 urban present, in *Human Geography in a Shrinking World*
 26 (eds R. Abler, D. Janelle, A. Philbrick and J. Sommer),
 27 Duxbury Press, North Scituate, MA, pp. 149–181.
- 28 Crampton, J. (2003) Cartographic rationality and the politics
 29 of geosurveillance and security. *Cartography and Geographic*
 30 *Information Science*, **30** (2), 135–148. (Excerpted as Chapter
 31 5.8.)
- 32 Crampton, J.W. (2004) GIS and geographic governance:
 33 reconstructing the choropleth map. *Cartographica*, **39**
 34 (1), 41–53.
- 35 Crampton, J. (2009) Cartography: maps 2.0? *Progress in*
 36 *Human Geography*, **33**, 91–100.
- 37 Crampton, J. and Krygier, J. (2005) An introduction to critical
 38 cartography. *ACME: An International E-Journal for Critical*
 39 *Geographies*, **4** (1), 11–33.
- 40 Curry, M.R. (1997) The digital individual and the private
 41 realm. *Annals of the Association of American Geographers*, **87**
 42 (4), 681–699.
- 43 Curry, M.R. (1998). *Digital Places: Living with Geographic*
 44 *Information Technologies*, Routledge, London.
- 45 Dodge, M. and Kitchin, R. (2005) Codes of life: identification
 46 codes and the machine-readable world. *Environment and*
 47 *Planning D: Society and Space*, **23** (6), 851–881.
- 48 Farman, J. (2010) Mapping the digital empire: Google Earth
 49 and the process of postmodern cartography. *New Media &*
 50 *Society*, **12**, doi: 10.1177/1461444809350900. (Excerpted as
 51 Chapter 5.11.)
- 52 Geller, T. (2007) Imaging the world: the state of online
 mapping. *IEEE Computer Graphics and Applications*,
 (March/April), 8–13.
- Gerber, R. (1993) Map design for children. *The Cartographic*
Journal, **30**, 154–157.
- Gleeson, B. (1996) A geography for disabled people. *Transac-*
tions of the Institute of British Geographers, **18** (1), 387–396.
- Goodchild, M. (2007) Citizens as sensors: the world of volun-
 teered geography. *GeoJournal*, **69** (4), 211–221. (Excerpted
 as Chapter 4.10.)
- Goss, J. (1995) We know who you are and we know where you
 live: the instrumental rationality of geodemographics sys-
 tems. *Economic Geography*, **71**, 171–198.
- Gregory, D. (2004) *The Colonial Present: Afghanistan, Pales-*
tine, Iraq, John Wiley & Sons, Ltd, Chichester, UK.
- Gregory, D. (2010) War and peace. *Transactions of the Institute*
of British Geographers, **35**, 154–186.
- Haraway, D. (1991) *Simians, Cyborgs, and Women: The Rein-*
vention of Nature, Routledge, New York.
- Harley, J.B. (1988) Maps, knowledge and power, in *The*
Iconography of Landscape (eds D. Cosgrove and S. Daniels),
 Cambridge University Press, Cambridge, pp. 277–312.
- Harley, J.B. (1989) Deconstructing the map. *Cartographica*, **26**
 (2), 1–20. (Excerpted as Chapter 1.8.)
- Harley, J.B. (2001) Can there be a cartographic ethics? in *The*
New Nature of Maps: Essays in the History of Cartography
 (ed. P. Laxton), Johns Hopkins University Press, Baltimore,
 MD, pp. 197–207.
- Harvey, D. (1989) *The Condition of Postmodernity*, Blackwell,
 London. (Excerpted as Chapter 5.2.)
- Herb, G.H. (1997) *Under the Map of Germany: Nationalism*
and Propaganda 1918–1945, Routledge, London.
- Hillier, A.E. (2005) Residential security maps and neighbor-
 hood appraisals: the Home Owners' Loan Corporation and
 the case of Philadelphia. *Social Science History*, **29** (2),
 207–233.
- Huggan, G. (1994) *Territorial Disputes: Maps and Mapping*
Strategies in Contemporary Canadian and Australian
Fiction, University of Toronto Press, Toronto. (Excerpted
 as Chapter 5.5.)
- Joyce, P. (2003) *The Rule of Freedom: Liberalism and the City in*
Britain, Verso, London.
- Kidron, M. and Segal, R. (1995) *The State of the World Atlas*,
 Penguin, London.
- Kitchin, R. (2002) Participatory mapping of disabled access.
Cartographic Perspectives, **42**, 50–62.
- Kwan, M.-P. (2007) Affecting geospatial technologies: toward
 a feminist politics of emotion. *The Professional Geographer*,
59 (1), 22–34. (Excerpted as Chapter 5.9.)
- Latour, B. (1987) *Science in Action*, Harvard University Press,
 Cambridge, MA.

- 1 Latour, B. (1992) Drawing things together, in *Representation*
2 *in Scientific Practice* (eds M. Lynch and S. Woolgar),
3 MIT Press, Cambridge, MA, pp. 19–68. (Excerpted as
4 Chapter 1.9.)
- 5 Matthews, M.H. and Vujakovic, P. (1995) Private worlds and
6 public places – mapping the environmental values of wheel-
7 chair users. *Environment and Planning A*, 27, 1069–1083.
- 8 Mogel, L. and Bhagat, A. (2007) *An Atlas of Radical*
9 *Cartography*, Journal of Aesthetics and Protest Press, Los
10 Angeles, CA.
- 11 Monmonier, M. (2002) *Spying with Maps*, University of
12 Chicago Press, Chicago, IL.
- 13 O’Sullivan, D. (2006) Geographic information science: critical
14 GIS. *Progress in Human Geography*, 30 (6), 783–791.
- 15 Paglen, T. (2009) *Blank Spots on the Map: The Dark Geography*
16 *of the Pentagon’s Secret*, World Dutton, New York.
- 17 Peluso, N.L. (1995) Whose woods are these? Counter-
18 mapping forest territories in Kalimantan, Indonesia. *Anti-*
19 *pode*, 27 (4), 383–406. (Excerpted as Chapter 5.6.)
- 20 Pickles, J. (1991) Texts, hermeneutics and propaganda
21 maps, in *Writing Worlds: Discourse, Text and Metaphor*
22 *in the Representation of Landscape* (eds T.J. Barnes and
23 J.T. Duncan) Routledge, London, pp. 193–230. (Excerpted
24 as Chapter 5.3.)
- 25 Pickles, J. (1995) *Ground Truth: The Social Implications of*
26 *Geographic Information Systems*, Guilford Press, New York.
- 27 Ramaswamy, S. (2010) *The Goddess and the Nation: Mapping*
28 *Mother India*, Duke University Press, Durham, NC.
- 29 Ratti, C., Williams, S., Frenchman, D. and Pulselli, R.M.
30 (2006) Mobile landscapes: using location data from cell
31 phones for urban analysis. *Environment and Planning B:*
32 *Planning and Design*, 33 (5), 727–748.
- 33 Robinson, A.H. (1982) *Early Thematic Mapping in the*
34 *History of Cartography*, University of Chicago Press,
35 Chicago, IL.
- 36 Rose, G. (1993) *Feminism and Geography: The Limits of*
37 *Geographical Knowledge*, Polity Press, Cambridge.
- 38 Schulten, S. (2001) *The Geographical Imagination in America,*
39 *1880–1950*, University of Chicago Press, Chicago, IL.
- 40 Schuurman, N. (1999) Critical GIS: theorizing an emerging
41 discipline. *Cartographica*, 36 (4), 5–21.
- 42 Sparke, M. (1998) A map that roared and an original atlas:
43 Canada, cartography, and the narration of nation. *Annals of*
44 *the Association of American Geographers*, 88 (3), 463–495.
45 (Excerpted as Chapter 5.7.)
- 46 Vujakovic, P. (2002) Whatever happened to the ‘New
47 Cartography’? The world map and development mis-
48 education. *Journal of Geography in Higher Education*,
49 26 (3), 360–380.
- 50 Winichakul, T. (1994) *Siam Mapped: A History of the Geo-*
51 *Body of a Nation*, University of Hawai’i Press, Honolulu, HI.
52 (Excerpted as Chapter 5.4.)
- 53 Winlow, H. (2001) Anthropometric cartography: construct-
54 ing Scottish racial identity in the early twentieth century.
55 *Journal of Historical Geography*, 27 (4), 507–528.
- 56 Wood, D. (2010) *Rethinking the Power of Maps*, Guilford,
57 New York.
- 58 Wood, D. and Fels, J. (1986) Designs on signs: myth and
59 meaning in maps. *Cartographica*, 23 (3), 54–103. (Excerpted
60 as Chapter 1.7.)

Author Query

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52

1. Author please check page xx in this chapters.

UNCORRECTED PROOF