COUNTER-MAPPING AND GLOBALISM

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To begin, two images of Enlightenment’s optimism might be summoned to a convention with bravura: Thomas Hobbes’s (1651) Leviathan, illustrating the body politic, is the giant ‘tongue’ of a sovereign straddling the landscape; and Gerard Mercator’s (1600) engraving of Africa as a ‘quiet and scared’ scientist holding the globe in his hand (as opposed to a God shouldering the burden). Modernity’s crisis of confidence in progress, political representation and a shared sense of the global might be attributed to the failure of both conceits: Hobbes’s vision of a society made civil and Mercator’s globe made managable in the age of discovery. We are now perhaps more acutely aware that the Body Politic and the hand-held globe were only ever conceived from a particular perspective and by eliminating contradictory insights through a process of exclusion. So if the project has failed, what is the role of mapping as a means of representation today?

As the spatial arrangement of represented entities, a map or visualisation can orient to reveal complex networks of conflicting interests, flows and environmental change in the era of globalism. Maps and visualisations of weather patterns, oil spills, temperature and CO2 levels, refugee paths of flight and so on can be accessed in an instant. But to what extent can mappings and visualisations be mobilised to the dominant forces that have brought us to the current crisis of confidence, confidence in a stable future? To explore this question I will first address the common deficit of critique in data visualisation and mapping discourse, seemingly exacerbated by an epistemological gap between the related disciplines of computer sciences and geography; then I will explore the challenges of renewing these tools of representation against the powerful interests that have traditionally worked them; finally I will discuss how efforts to theorise and mobilise a resistance in mapping are manifest in renewed efforts to redelineate and re-write space, the emphasis being on a textual as well as visual representation. Ultimately this leads to a conclusion that a map or visualisation by itself is doomed to remain genital unless it is part of what

Bruno Latour (1986, p. 71) calls a ‘cascade of inscriptions’ that bring to the table the accumulated power of an assembly of allies and interests.

Critique and visualisation

The contemporary ‘state of the art’ in mapping is Geographic Information Systems (GIS), which brings together cartography and data visualisation in a powerful technological package, making its development and uses to bring any number of informational layers to the surface of a base map. This convergence of disciplines – cartography, computer science, statistics among others – has happened with such rapidity and technological fervour that critical reflexivity has been largely left behind. That the burgeoning language of data visualisation has a history indebted to cartography is usually neglected in the dominant discourse of the computer sciences. Key texts in the field (e.g. Ware 2000; Card et al. 1983) typically draw from positivist concepts of cognitive psychology based on testing and codifying principles of perceptions that can be, supposedly, universalised. This approach is criticised as an ‘engineering sensibility’ by Johanna Drucker (2000, pp. 72–3), who counts from a perspective of theorists of subjectivity in feminism and cultural studies. We need only a brief of a post-twentieth century history of visualisation to scrutinise the engineering-sensibility, and locate its connection to what geographer Jeremy Corner (2000, p. 9) calls ‘technologies of management’ such as statistics and the emergence of a theory of probability that emerged with data visualisation in the nineteenth century. The specific practice of plotting scientific data against a representation of territory in turn, finds earlier examples in the Age of Discovery; Edward Hall’s seminal thematic 1686 map of trade winds, for example, introduces the graphic device of directional arrows and arrows to approximate the complex system of winds in the Atlantic around the tropics. Edward Hall identifies several conventions to position the map-maker at the centre of the world; his use of the Mercator projection, of graticule and of London as the prime meridian. By the nineteenth century, these conventions had become undisputed ‘facts’.

The discovery of the globe is a measurable whole, in several commentators have shown, emerged alongside the problem of how to order it. Since the scope of this chapter is the visual representation of geopolitical space, we shall endeavour to limit ourselves to discussion of the processes by which territorial interests are translated into, and reinforced by, visual forms. Bruno Latour’s (1986, p. 7) concept of the ‘immutable mobile’ is particularly resonant account of how a map achieves this translation of power. Once a territory is mapped, surveyed, coded, re-presented, authored and fixed in a medium, be it in print or more seemingly fluid interactive forms such as GIS, it becomes both resistant to alteration (‘immutable’) and mobile; as an instrument for preserving the meaning and truth of a scientific observation as it circulates.

Bruno Latour compares a map shown in the sand by an indigenous islander on Sakhalin with a copy of the sand map transcribed in the notebook of the explorer Jean-François de La Pérouse, in an expedition funded by Louis XVI. The former is
allowed to disintegrate with the tide, whereas the latter, rendered in portable form, is the single object of the explorer's mission, "to determine who will own this and that part of the world and doing which course the next ships should sail." (Lavater 1896, p. 31). Both the sand map and the notebook map carry the same valuable information, but the former bears the characteristics of being the first in a "cascade of inscriptions," it is mobile (unlike the sand map, or the ideal itself), immutable and flat, it can be reproduced, scaled and reconfigured at will, merged with geometry and made part of a written text. All of these acts of reproduction and mobilization form the cascade of subsequent inscriptions. In the hands of the French empire, this "incredibly weak and fragile" piece of paper becomes a means with which to "dominate all things and all people" (Lavater 1896, p. 29).

But if this record is entangled with imperialist histories, a map or inscription can vary as the site of the disempowered and marginalized. The act of plotting and representing marginalized interests, and here we might add non-human interests to the list, was wryly described as "counter-mapping" by geographer Nancy Peluso (1995). In her paper on the counter-mapping of Indonesian forests undertaken in the 1990s by local activists and villagers in resistance to decades of massive industrial timber exploitation and the Indonesian government's use of mapping to oversee customary forest rights, Nancy Peluso (1995, pp. 384–5) characterizes counter-mapping as efforts to "appropria[te] the state's "techniques and manners of representation"" (italics added). This is to "state" customary claims to forest resources, which have been traditionally and sustainably managed by villagers.

Counter-mapping and the postmodern condition

The rich history of counter-mapping and critical cartography is not documented in local atlases and the giant drives in map rooms of the world's libraries. This is not simply a reflection of where the power lies but also that counter-mapping always begins with a critique of the map: at first target is the map as an authoritative artifact formed in time. Mapping, which describes the process of selecting and plotting information spatially, shows our attention to the means, method and circumstances under which the final representation was assembled. As such, it opens up for inspection the interim the map server and suggests a way of looking beyond the finished artifact. This is why counter-mapping is always a practice and a process in flux; it suggests an activity that is generative, revealing, troubling, performative and participatory. After a decade of rhetoric on the generative, participatory nature of the architectural diagram, it is not the goal of this chapter to perpetuate the idea that the requisite general representations of traffic, history, geology, etc. by architects and planners constitute a "new" accommodation in design. The aim instead is to explore the limits and potential of mapping as a means of representing interests now that its political history has been exposed. That maps embody a rhetoric of normality that fosters an illusion of democracy is, by now, thoroughly explored. But the concern with "how we represent the world to ourselves" (Harvey, 1990, p. 249) is arguably what has prompted the proliferation of maps and visualizations in the last few decades. The postmodern condition was in effect transformed into a provocation by Fredric Jameson when he suggested in 1991 that the "invisibility of our minds, at least to us, means that the global map is not our only map; that the world is not the site of our preconceived representations, but rather the site of our potential realizations" (Jameson, 1991, p. 46). While Fredric Jameson's hypothesis has been tested in counter subsequent mapping projects, there has been little critical analysis of cognitive mapping calls for a closer inspection of the term.

"Cognitive mapping emerged in the 1990s as a field research method for evaluating the "legibility" of urban space, a concept furthered by urban planner Kevin Lynch (1960). By asking residents of a city to sketch a map and respond to questions about the built environment, Kevin Lynch argued that a shared sense could be derived from an "urban legibility," i.e. the ease with which a city's form can be recognized and organized in a coherent pattern (Lynch, 1960, pp. 2–23). Accordingly, "low-tech and accessible, particularly in the present age of more high-tech successes," Kevin Lynch's method nowadays makes several assumptions. Inherent in the phrase "urban legibility" is the assumption that space can be "read," suggesting a pre-existing text that presents itself for contemplation. As we shall see, this assumption has drawn criticism, notably from the anthropologist Tim Ingold. But even at the most literal level, the lexical bias encourages a focus in Kevin Lynch's methods on fixed or static and therefore spatial representations. As a result, cognitive maps when sketched have a tendency to represent the world not as it is experienced, but as an image of the world as it has been represented to us in print or on screen. Jean Vervaeke's paper on cognitive maps of London revealed a tendency among locals to view the city in terms of the city's influential underground map (Vervaeke 2009). Similarly, the sketch map study made by the geographer Thomas Saarinen in the only 1970s to examine how children pictured maps of the world, elicited received natural images of the world after 3,000 children from various continents were asked to produce freehand sketch maps, "Thomas Saarinen found there was a tendency, stronger in certain countries, to distort the maps to favour Europe, enlarging the continent and putting it at the centre (Saarinen 1987). This tendency even overrode an impulsive to favour proximity and centre the countries the children were drawing from. For example, the orientation of a map composed of children's views put the Soviet Union at the top right, USA top left and Europe in the center, assassinating the classic Mercator projection. A particularly Eurocentric map drawn by Thai children in the 1970s reminded us that a map, as J. B. H. Hudson wrote, replicates not just the territory but the "territorial imperatives of a particular political system" (Hudson, 1984, p. 34). It would seem that, despite being the only country in South-East Asia not to have been colonized by a European power, Thailand has not been immune from the imperial activities around it. Here were the territorial imperatives of Carl Schmidt's Geocoses, in
which a dominant power seeks not annexation but to draw land into its sphere of influence, vividly visualized in a child's map.\[1\]

To move to the present day, Frederic Jameson's call for cognitive mapping of the global order requires, in fact, a series of images. One challenge is that, like maps of the world, the notion of a single geopolitics has been thoroughly denaturalized. The much-cited phrase of Donna Haraway, the 'God-trick of seeing everything from nowhere' has in effect characterized the view of clinical geopolitics (Haraway 1991, p. 189). Colin Hui's account of contemporary geopolitics as 'amodal knowledges' (Flint 2006, p. 16) mirrors the emergence of multiple, conflicting, representations of the world. We might begin with Ulrich Beck's opening to his book What is Globalization? in which the nation-states are undermined by the transnational corporations that dominate the global operation of the economy (Beck 2000). Following a report in the Economist, we might draw a map depicting the largest transnational corporations instead of the dominant continents in Mercator's projection: General Electric, Royal Dutch Shell, BP, ExxonMobil and Toyota (Economist 2013). But where do we place them? GE and Exxon are American, BP is British, Shell a Dutch and Toyota Japanese, but of the 196 companies with the most foreign assets, the Economist tells us, 17 hold over 90 per cent of their assets abroad. If we sought to represent where the transnational workforce is dispersed, it would become clear, as Beck notes, that the transnationals are located where labour costs and workplace obligations are the lowest. Over half the GE workforce is outside of the USA. We might draw the lines representing the flow of goods and services for these corporations, again connecting the places where infrastructure is favourable and labour is cheap. And finally, add some dollar signs, colour coded again, to show where these corporations pay taxes, and benefactors to show where their top executives choose to live. Clearly we arrive at something quite different from the Mercator projection.

Ulrich Beck's geopolitical map is in turn supplanted by the dazzling map of mega-regions, captured in satellite imagery of contiguous lighted areas at night, and releases by economist Richard Florida. Countering both the traditional nation-state map and the now populised notion of the flattened world economy in which geographic place is less and less important, Richard Florida argues that geographic clustering and 'piling together' of economic activity have transformed the importance of place, in terms of economically and politically powerful mega-regions. Profiting from available labour, skilled talent, economic capacity and infrastructure, mega-regions define a two-tiered world order. Two mega-regions with common economic output are more likely to develop similes in terms of culture, politics and built environments. But lagging behind are the 'mega cities' like Calcutta or Delhi, which share little in common with the mega-regions, nor can they look to the global economy for solutions or resources (Florida et al. 2008, p. 461).

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Lack of fit

Ultimately, none of the geopolitical perspectives discussed above suggest a means of resistance to globalism. They depict the flows of power and capital, but ultimately reflect a dominant view of the world back to us, which serves to disempower rather than inspire the political action Jameson hoped for. At a global scale, the mapping of globalism sees only domination and geopolitization. The same might be said of all the 'big picture' counter-mapping and counter-projections that sought to redress the Eurocentric imbalance of the Mercator projection from Joaquim Torres-García's América Javiraíva (1944) to CEPII's 'What's Up South?', both of which inverted the Mercator projection by docting the continents 'upside down'. Since there seems to be no dominant agenda, they end up reinforcing it by promoting it. This is a complex design problem because the very tools that the under-represented used to make maps are shaped by those whose incocks were served by the tools.

A parallel can be drawn with post-colonial literature. The insidiousness of language for the post-colonial writer has been raised by several authors, including Robert Boli, who reflected on his ambivalence toward using English, the language of the colonizer, in terms of a scream: 'To conquer English may be to complete the process of making ourselves free' (1992, p. 17). One group of editors of a volume of The Post-Colonial Studies Reader neatly describe the 'lack of fit' between language and place for those who inhabit the language of the colonizer as a second language (Stern et al. 2006, p. 349). The Canadian writer Dennis Lee has described the mismatch between English and the Canadian landscape: 'The language was drenched with our non-belonging' and 'The colonial writer does not have words for his own'; he writes cited in Atchack et al. 2006, p. 349. Is not the same true of the counter-mapper, crafting lines and shapes to give form to that in turn struggles with its own loaded textures, weights and connotations?

One of old cartography's favourite textbooks, How to Lie with Maps, reveals a glint awareness that the maker's tools, intricately coded abstractions and techniques designed to simplify, select, display, aggregate, abstract, make territory look 'natural' and neat perennially, draw hard boundaries where there are none (Monmonier 1991). 'Not only is it easy to lie with maps, it's essential', writes Monmonier (1991, p. 2), slurring the Hebe's embrace of positivism against the post-war cartographic establishment. After their wartime use for propaganda, the cartographic cartes were enormously repurposed in a technoscience, enabled by no small amount by the emergence of computers, databases and ultimately, GIS, which brings into its own rhetoric of neutrality and precision. The result is a perpetuation of the black-line state of the map, whose codes are deeply embedded with the structures, values, techniques and hierarchy of practices of their colonial history. As Dean Wind has argued, 'Maps mark the interests that bring them into being' (1992, p. 95).

The very utopia of the map contrasts its imperialistic Western cartographic development can be vividly illustrated by looking at the function and symbolism of the legend. Since the majority of social practices and symbols at work in a
cartographic map are silent conventions presented without explanation, the legend becomes a tell-tale index revealing what the mapmakers consider to be worth underscoring. This, despite the widely held view that legends are neutral tools, ‘naturally indispensable to most maps since they provide the explanation of the various symbols used’ (Wood 1992, p. 97). Drawing from the work of B. Harkey, Denis Wood has famously identified the territorial imperative at work in a seemingly innocent road map of North Carolina by unveiling the signs. Denis Wood notes that the legend negates to anticipate 18 of the signs used in the map but provides signs for seven different kinds of road surfaces, along with the revealing factoid, ‘North Carolina’s highway system is the Nation’s largest State maintained Network. Hard-surfaced roads lead to virtually every scenic and vacation spot’. As Denis Wood puts it, the message of this map is one of ‘automotive sophistication’ (1992, pp. 95–97).

Lack of fit becomes apparent when the dominant structures of cartography are put to the service of a counter-mapping project. Conventions around colour, for example, are clearly the product of specific cultural traditions for depicting landscape: blue for water and green for vegetation make more sense in Northern Europe than in the Western Sahara. Similarly imparted descriptive attributes such as ‘primary forest’ can have completely different meanings for a scientific, government official and an indigenous farmer (Rambaldi 2004).

It becomes clear that there is a key conceptual difference between the cognitive sketch map and the everyday practice of experiencing space. In its role to pragmatism, Kevin Lynch’s method of interviewing city dwellers and asking them to sketch their mental ‘rendering of the city’ set on a constituted model of thought, one that assumed that the world ‘out there’ is processed ‘in here’, as the mind. This model, rooted in Cartesian dualism, is often described as a ‘transcendental account of cognition’. As an embodied account of thought, however, shifts this model to an experiential, situated and, recently, transactional understanding of how we encounter the world.

Tin Lingold tackles the limitations of the cognitive model in his extended case for wayfinding in the environment, which suggests to him not a great God-given map but an immensely negotiated terrain of commons and groups, which is continuously taking shape around the traveller even as the latter’s movements contribute to its formation (Lingold 2000, p. 223). This position is developed in a case study of tourists’ wayfinding practices by Eric Lauter and Barry Brown (2008). Eric Lauter and Barry Brown argue that classic cognitive studies of memory and alignment with maps rely on ‘more or less disengaged cognitive models of navigation’ that ‘miss numerous features of what ordinary navigators are doing with maps’. This is illustrated with detailed observations of tourists and car drivers navigating orienting themselves on route, where we see not mental reasoning and spatial models but ‘map ready-looking and reading signage, misnaming street names, grappling with more or less commonplace paper documents and the like’ (Lauter and Brown 2008, p. 34–6).

This key difference between transcendental and embodied accounts of thought also reflects back at us in a contrast between Western and non-Western conceptions of territory, a distinction considered by a number of geographers in recent fieldwork with belagruag groups.

Indigenous cartographies

In his account of a participatory mapping project in the Monguwa region of Hondua, Joel Bryan (2011) notes the incompatibility of boundary lines with local understandings and practices of land use. Mokwe villagers accessed access to land and resources through networks organized in terms of kinship, residence and ancestry, notes Joel Bryan. These were conceptualized as overlapping and dynamic zones:

Insofar as legal recognition required the resolution of these overlaps into boundary lines that could be tried and determined, they ran on a cross purposes with the very forms of customary use and occupancy that they were intended to protect. This was, in many respects, an impossible task.

(Bryan 2011, p. 42)

Joel Bryan adds that it was ‘tautically necessary’ to deploy the representation techniques of Western cartography since indigenous communities in the region had used the land occurred increasingly encroached on by third-party land speculation and agriculturalism. Legal recognition of indigenous land rights had become crucial to stop the encroachment, but at the same time, notes Joel Bryan, producing these boundaries ‘carried the risk of dispossessing villagers access to land and resources and becoming a source of conflict’ (Bryan 2011, p. 42).

The ambivalence at the heart of the project is aptly felt by Joel Bryan, who was tasked with helping villagers from FINZINSOS (the Federation of Indigenous and Native People of the Rio Negro Zone) design and develop methodology for mapping indigenous claims to land. For all its rhetoric of empowerment, participatory mapping has been criticized for its capacity to extend neoliberal modes of governance by translating claims to territory and autonomy in terms of the constitutional freedoms associated with property ownership’ (Bryan 2011, p. 42). Efforts to chart boundaries and simultaneously reproduce the pre-existing forms of colonisation that the boundaries preclude are recorded in vivid detail: Joel Bryan and his team of GPS-enabled researchers follow a local guide seemingly able to navigate indeterminate boundaries in the unknowns by marking blues on pine trees with a machine. At boundary markers, PINZINSOS representatives signed agreements, written in Mokwe, affirming villagers ‘rights to cross’ boundary lines in accordance with customary practices of use and occupancy.

In walking the boundaries and validating the maps, Mokwe organisations found new ways of creating new forms of relationships between communities, notes Joel Bryan, providing a means of critically assessing the potential of legal recognition and creating an awareness of other configurations of territory. The inscribed boundaries and ‘rights to cross’ agreements, in other words, both set up potential for protection and conflict. In conclusion, notes Joel Bryan (2011), the mapping
simple elude the need for more maps, an aspect of state mapping practices that indigenous mapping had sought to challenge. The ambivalence of this confron-
tation points to the impossibility of returning to a vulgar, pre-staged state. Once
mapped, a territory is consigned to be continuously mapped.

In her account of the negotiations between indigenous Karen communities and the Thai Royal Forestry Department in Thailand, Robin Ruth identifies two
opposing conceptions of space: résumant Gilles Deleuze and Félix Guattari’s (1987) notion of smooth and steered space. The Thai Royal Forestry Department,
which was seeking to establish a national park in the region, had Western-style
tools to impose boundaries. The Karen, who had inhabited the area for over 1,000 years, did not see themselves as owners of the land – it was owned by spirits of land, water and forest. Their notion of the delineations between forest and agricultural land were ambiguous as a result of shifting cultivation practices: temporary private land is embedded within a communal framework.

For example, a household in need can borrow land from a household within the village or a neighboring village. After two rotation cycles the land becomes the ‘property’ of the homemaker. At the same time, opportunistic gathering of chilies and vegetables (but not rice) from someone else’s field is practiced. Citing Tim Ingold and Henri Lefebvre’s conceptions of space as something that is both rooted in social and ecological relations and dynamics, ‘as a constant state of becoming’, Robin Ruth embarked to map Karen communities using the concept of ‘dwelling’ space instead of the abstract space of the Western cartographic map (Ruth 2009, p. 211). Again, the project ended in ambivalence. Given the needs of the villagers to negotiate in the terms of the Western cartographic map, an uneasy compromise was achieved by Robin Ruth training the Karen people to create ‘dynamic’ maps of land use.

Nevertheless, Robin Ruth’s case for mapping ‘dwelling space’ straightforwardly draws from a Heideggerian account of space that Tim Ingold advocates in Perceptivity of the Environment (2005). In place of the map that represents the earth as a surface to be occupied rather than a world to be inhabited, Tim Ingold argues for a conception of the world that ‘continually comes into being around the inhabitant’ (Ingold 2000, p. 143). Livelihood, with its practical, material and technical interactions with the environment cannot be understood as separate from human, religion and community. A human-gathers-gatherings group in Zaire, for example, builds dwellings that are relatively informal and are regularly adapted to reflect the effects, groups on between community members; a contrast to the often-narrated preconception
in architecture, characterised as ‘site plan and build the houses, then import the people to occupy them’. (Ingold 2000, p. 189).

To build a case for the validity of such alternative and counter-knowledges, it is useful to refer to Jeremy Crampton’s diagram of contemporary mapping as a field of knowledge and power relations’ being pulled in two different directions (Crampton 2010, p. 5). On one side of a compass-like circle are the experts pushing the secunurisation of mapping, focusing on technical issues in isolation from their socio-political context. On the other side is the resistance: mapping as art, as aesthetic

practice and as a force that has allowed the restructuring of what Michel Foucault called ‘subjugated knowledge’. The resistance is further subdivided between those practitioners who critique existing GIS and cartography while supporting the growth and those who practice map art, performivity and counter-mapping. An example of the former group is the USA-based OpenStreetMap (OSM), which set out in 2004 to map the world using a crowd-sourced, web-based system, whereby volunteers with handheld GPS uploaded data and imagery to the OSM server. To date, the platform has registered over 5 million users, 30 per cent of whom have contributed at least one point to the map; the project has effectively forested the UK’s Ordnance Survey to supplement its right-licencing and copyright controls on its maps, making geodata freely available (Grechuk 2010).

While few would fail to be impressed with the power and promise of this web-based endeavour, GIS nevertheless reinforces the same visual syntax as its dominant rivals, and one would argue is ill-equipped to deal with the space of the modern city. The dominant form of the cartographic map can abstract through visualising physical features like hills, trees, parks, buildings, rivers, infrastructure, and administrative and political boundaries like state and county lines and census blocks, but has never been very good at showing fast-moving, local things like vehicles or people, and even worse at showing the connections between those things; including the administrative, political and corporate jurisdictions and legitimations that define modern city space. With the advent of GIS, we have a layered means of making cartographic tools more adept at revealing the variability of space, but its manyomnous one aimed at scaling the local to the global. It tends to serve the forces that seek to profit from standardisation of space. This deficiency would explain why Jeremy Crampton is at pains to separate the resistance forces supporting the growth from those practising map art and counter-mapping.

To help foster the latter, Jeremy Crampton draws together threads that connect Gaston Bachelard’s poetics of space with Martin Heidegger’s concept of dwelling and Georges Perec’s practice to describe urban space in his books in autobiography form. Also cited is Michel de Certeau’s well-known contention that maps, or surveys of routes, end up agonizing or forgetting one being in the world, the act of ‘passing by’ (Crampton 2010, pp. 164–3). The recent work of many practitioners pulling in the map art and counter-mapping directions of Jeremy Crampton’s diagram is directly concerned with the visualisation of this ground-level experience. In the spirit of George Perec’s Species of Space (1974), I will now venture a tentative taxonomy of alternative conceptions of represented space: Air Space, Automated Space, and Ruptured Space.

Air Space

As the most fundamental level, the space of the air we inhabit has been utterly transformed in a matter of decades; one simple conclusion from the work of philosopher Peter Sloterdijk is that the biophysical crisis has brought about a realisation that we humans live in spheres of influence, in atmospheres that are shared.
To define humans is to define the envelopes, the life support systems that make it possible for them to breathe. Peter Sloterdijk’s call for a new Rights of Man, ‘reformulated in topological terms’ points to the shift required for us to re-vindicate contemporary space:

all men are not only born free and equal but they’re all condemned to look after the space in which they live and ensure the breathability and livability of their environment. This definition concerns so-called private space as much as it does public space. However, the relationships between citizens are those of mutual poisoning.

(Sloterdijk 2005, p. 230)

This calls for a new metrics, to measure the extent of poisoning caused by our actions, which can be tried to the emergence in the 1980s of the concept of ‘environnemental injustice’ designating the social impacts of environmental degradation. Efforts to correlate and visualize economic depression and environmental hazards are a significant counter-mapping endeavor, inevitably challenged, as Denz Wood has pointed out, by the extreme costs of compiling databases on the environment, which has led researchers to rely on often problematic data sources provided by government and institutions (Thompson and Caquard 2011). In a recent survey of contemporary mapping practices, Silvianne Caquard concludes, depressingly, that the hyper-real perspective that Google has been producing through its pervasive mapping applications has come to seem bigger than the determined environ-
ment to which it refers. Paraphrasing the novel of Michel Houellebecq, Silvianne Caquard often the ‘disturbing’ provocation, ‘Google Maps are more interesting than the territory’ (Caquard 2013, p. 143).

The hyper-real perspective of a hegemonic mapping platform negates to depict the deterioration, or poisoning, of space is almost identical to the critique levied by the IRC when analysing a celebratory 1660 map of London produced under Charles II: both neglected to depict actual living conditions (BHC 2015). But a significant distinction can be made between the shift and player-inhabited city of the early Enlightenment and today’s megalopolis, one alluded to earlier in Janus’s characterization of the ‘great global multinational and decentralized com-
municational network’. At stake is our ability to visualize the colonisation of space by this network of interests. Continuity, one of the commercial organizations most associated with the democratization of mapping tools, is also implicated in this colonization: Google.

Automated space

Google is entangled in the definition of space in several ways. On the surface level it has become the platform的地图 that several critics have noted a homogenizing effect in popular cartography: colour schemes have become less nuanced, roads have been widened, fauna made uniform, to the effect that it has

diseminated, perhaps unwittingly, a decidedly homogenous version of the world devoid of geographical, political and cultural diversity, despite the variety of user groups adding information to its applications (Walker 2009).

But on another level, Google’s acquisition of a mapping platform in the early 2000s from the CIA-funded software company Keyhole was a strategic addition to its remit. To add locative technology, to which we can now add the smart phone, to the world’s most powerful search engine erects a disciplinary space quite unprecedented, one far beyond the suspicion first thrown by Michel Foucault.

To trace out the threads of this entanglement requires a more dimensional and historical account of space, developed by geographers Nigel Thrift and Shaun French. In the past 50 years or so, are Nigel Thrift and Shaun French, the ‘technified subsumptions’ of Euro-American societies has been completely redefined as software and come to intervene in everyday life and at the same time assume an unchallenged, ‘taken-for-granted’ position in the background. Drawing from the ‘machine space’ identified by Ron Haviv in 1974, which described a desperate and threatening territory devoted primarily to the use of machines, Nigel Thrift and Shaun French extend the definition to describe space that is automatically produced:

Wherever we go, then, in modern urbanized spaces, we are directed by software: driving in the car, stopping at the red light, crossing the road, getting into an elevator, using the washing machine or the dishwasher or the micro-
wave, making a phone call, writing a letter, playing a CD or a computer game, the list goes on and on.

(Thrift and French 2002, p. 328)

The effectivity of this automatically written space, they argue, means from these different but intersecting geographies: a geography of software production, a geography of power and a geography of play. All there are situated by Nigel Thrift and Shaun French within critical discourse; software production is concentrated in the US, and characterized by hierarchies of places and people; its geography of power is recorded in Foucault’s terms to describe how software is an expression of ‘rules of conduct’ which ‘operate at a distance’ so that ‘too often the code seems to have little to do with the situation in which it is applied’, and its geography of play is defined, epistemically it seems, in terms of its indeterminacy and lack of closure, which is properties that must being captured by dominant orders, provide a means of creating ‘new kinds of rules’ (Thrift and French 2002, p. 328).

A decade after Nigel Thrift and Shaun French’s precocious provocation, automatically produced space is running rampant, and sensibly so in terms of waysfinding.

Space is increasingly inscribed by software to the extent that where we go, why we go and what we do when we go is dictated through and by the smart phones, social networking apps and online navigation systems we carry around with us. The Apple and Google maps on our smart phones also provide a cartographic view of
Ruptured space

Space is increasingly ruptured, by its automatic production, development, colonisation and, quite often, by disaster. The use of locative technologies to sever connections in re-connecting ruptured space seems to illustrate Nigel Thrift and Shumi Furman's case for 'new kinds of order' emerging from the exploitation of software's indeterminate nature. A case in point is the use of OSM as the basis for Ushahidi, an open source platform started in Kenya as a way of tracking post-election violence in 2007. Essentially a way to geo-locate reports sent to a website, the platform, together with its visualisation tool Crowdsnap, translates, classifies and geo-references (using Google maps/OSM) reports sent by email, SMS, social media, traditional media and voice messages (see the M人事) (Sheller 2012).

In the wake of the Haiti earthquake of 2010, Ushahidi set up a Haiti crisis mapping operation through which people and organisations posted their needs, and volunteers scanned and picked up geo-coded reports, and reportedly helped save many lives. The adventurous addendum to this much-celebrated project is that very few Haitians had smart phones and broad band access after the disaster. As Mami Sheller notes, this meant that the vantage points and centres of calculation for the relief effort were outside the country (Sheller 2013). Nevertheless, the mapping of post-shatter space usefully identifies a temporary space that slowly makes its way into a map, but has increasing relevance as the other the waning stages of a physical crisis.

To return to Jeremy Cranbrook's diagram, the uneasy tension between securitisation and resistance suggests intriguing problems for the art of mapping resistant practice. Mapping post-shatter space brings up complex issues around data access and ownership. A mapping of least surveilled areas provides material for the next wave of camera. A mapping that seeks to galvanise networks of hackers, grass roots activists and hacktivists also requires providing valuable information for criminal investigators and procurers. A security map of network vulnerabilities by the same token potentially provides a valuable tool for cyber-criminals.

The sense of an impasse remains, however, only if we retain at the level of the map, the visualised outcome of acts of resistance. If instead we consider the acts themselves as part of specific, situated social movements, then the effectiveness or ineffectiveness of a map becomes a secondary concern. This first requires a rather different interpretation of Jeremy Cranbrook's diagram using Gilles Deleuze and Felix Guattari's concept of deterritorialisation. This broad-ranged concept, describing the forming of a possibility from its former state (Deluze 1981), is often used to describe the transnational movement of cultures no longer anchored to place: the migration of people, the displacement of religions, border-crossings and so on. Following anthropologist Amatu Escobar, we might attribute to the securitisation side the forces that seek to globalise through bureaucratisation of mapping, and to the resistance side the forces that seek to localise. Both sides display technology to network; their activities, the key distinction being that the strategies of securitisation practiced by the e-chauvinist establishment produce a dissolving effect due to their politics of scale (to map the globe requires the imposition of an abstract system upon it). But if the same time, the forces that seek to globalise are not, as a Marxist reading of Jeremy Cranbrook's diagram might suggest, a single, unified bloc moving on us. They too are engaged in processes of deterritorialisation and externalisation. Amatu Escobar proposes that we learn a transcendent 'ethical critique of power' that fractures this epistemological model of a unified bloc and replaces it with a set of scattered practices across the globe: 'fractionalising the identity of capital - capitalism - demands ... the disruptive liberation of places (and the consciousness from a real determination by capital, or modernity for that matter') (Escobar 2001, p. 158).

This move, characterized as giving capitalism an 'identity crisis' (Gibson-Graham 1996, pp. 266-1) grants potency and autonomy to alternative models of development, or rather, post-development. It echoes the writings of many anthropologists on globalization and elaborates a framework for Amatu Escobar's discussion of ecological and ethnic movements such as the alternative strategies for sustainable use of bio-diverse resources practiced by activists in the Colombian Pacific rainforest. Confronted with the rapid expansion of palm plantations and industrial shrimp cultivation in the south of this region, activists have initiated research of traditional production systems and redesigned the entire Pacific rainforest region in terms of 'wild commons' that link people with the natural environment. For example, there are life corridors linked to mangrove ecosystem, foothills, traditional gold mining or women's shell collecting in the mangrove areas. The point is not to unity or preserve indigenous practices as 'untouched' but to challenge the conceptual model that always commercialize the local as succumbing to the global (Jacobs 1996, p. 15).

We might also complicate Jeremy Cranbrook's diagram with Gilles Deleuze and Felix Guattari's less polarized model of resistance and control, in which 'resistances are no longer marginal or active in the center of a society that opens up in networks' (Hariri and Negi 2001, pp. 24-5). In a disciplinary society, control was exercised in the form of public executions and punishments; today control is internalised in the social body, as Michael Hardt and Antonio Negri argue. In short, it would seem that mapping against globalization first requires identifying where globalisation has colonized in our habits, or the structuring structures that shape how we navigate the world.

A prime reflection on this internalised battle is our ambivalent relationship with technology, which seems to cleave space itself, expelling us from immediate environment and senting us to remote spaces. In his last book, Felix Guattari used exactly these terms, impiety and anarchy, for acts of deterritorialization. A particularly resonant phrase echoes that counter-mapping is a resistant and fertile impulse in the bid to make some of the conflicting interests that confront us in our daily
Conclusion

The thrust of this chapter has been to explore how visualization and mapping assist globalization has taken shape in the past and how it might take shape in the future. The idea that visualization’s language – visual and textual – is inadequate provides reason enough to see revaluation as both possible and inevitable and the forces of globalization. But a Latnamese analysis would remind us that to focus on the visualization above is to miss the point that the map is the synthesis or accumulation of interest into immobile form. The reason why an experimental map of indigenous dwelling space would likely not have been successful is because the community needed to treat a convincing counterargument, as opposed to formal innovation.

In other words, a map or visualization must always be understood as the mobilization of interests, without which it is destined for failure: it is successful only when it can become immobile and mobilized, by gathering support and persuading in class to myth in myths. This is why formal graphical innovation might always be the product of a groundswell of change to change anything: otherwise it is doomed to remain general and faddish. We are left to consider how the myths of human progress that are written into the language of cartography and visualization might yet be confronted with new myths. To paraphrase Claude Lévi-Strauss, myth is countered not by argument but by other myths.24 Amnon Schoon’s suggestion, then, is that the capitalistic myth of an “impossibly large number that cannot be changed” is a hindrance to the establishment of new myths, myths of alternative models, of paradigms of localized practice (Schoon 2001, pp. 164, 169).

The challenge is simply put, as Andre Leroi (1984) would have it, that “The Money’s Think Will Never Destroy the Master’s House.”25 That the very syntax of visualization and mapping is inscribed with the interests of the dominant forces that mobilised them, is a reminder that space must be re-imagined to be re-wrapped.

Notes


3. Johanna Drucker posits an alternative approach to visualization which acknowledges the plural nature of knowledge. To Johanna Drucker, the representation of human thought is characterized as ‘a continual attempt to open up space for subjectivity, individual expansion, and specificity as challenges to the cultural authority of alignment, normalization, and systematic approaches to knowledge’ (Drucker 2009, p. 129).


6. Practice then is in fact the same as what Stuehler (2009) presents it as discovery.

7. See, for example, Cottamson (2010).

8. This leads to a number of interesting reflections on the ‘abusive’ in maps that reveal their ideological significance. J. B. Harley is by far a critical legacy that works to reveal the manner of maps through a critical reading of signs, graphics, decorations, logos, and in so doing, following Michel Foucault’s Discourse analysis, J. B. Harley has shown how maps came to prominence, and the state of the manner of and how their principal patron those nations who rely in them a means of planning and controlling knowledge of the region, knowledge of political boundaries. Rather than see maps as in the institutionalization of power/knowledge (Harley 1984).


10. See a discussion of Carl Schenck’s influence on contemporary international relations, see Ellingsen (2010).

11. See, for example, Ellingsen (2010, p. 21), Lacer-Lotter (2004, pp. 2–13). Also this says, “The world does not have a model of a species in which we find maps; it is always in the order of making adjustments in the world around us” (2010, pp. 3–8).


13. Post-development theory challenges the assumption that a ‘developed’ world can impose a standard of progress on the rest of the world; identifying the origins of this assumption as late President Truman’s 1949 speech. See Robins and Busse (1997).

14. See, for example, Clifford (1990, 2012).

15. See a discussion of Claude Lévi-Strauss and myth, see Lacer-Lotter (2013).


References


8

A NOTE FROM BRAZIL

Looking at the production of design knowledge in Brazil

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Working with the homeless has been a process of exchange and of learning; a process that has marked my research interests and has given design and development new meaning in the context of São Paulo. Driven by the wish to understand a prevalent phenomenon of the twentieth century, the research, in the mid-1990s, involved the relation of design to aspects of the informal habitat of the homeless, looking especially at the character of life on the streets and the material aspects of the culture of the homeless. Informal habitat as created by the homeless was explored and investigated in relation to its impact on the urban environment of global cities, such as São Paulo, Los Angeles and Tokyo. Without a doubt, homeless culture in each of these three cities has its own specific causes, political, social and cultural components. But in each of these places the material culture of the homeless reveals their creativity, ingenuity and the spontaneity of their design.

Accordingly, it needs to be stated that the material environment of the homeless culture is constructed from the trash of our technological and industrialised culture. These people create a world for themselves mostly out of plastic and cardboard; cities on the margins of, and also within, the spaces of our daily life. Facing the experience of diving vertiginously into the shadows, it is here that they mine for the materials, which allow the construction of a fragile habitat. Moved by the need for shelter, homeless people have transformed the concept of the city. As such they are both present and absent, seen and invisible, included and excluded. In every respect they simultaneously exist inside and outside the physical, social and political world and place themselves, willingly or unwillingly in an intermediate space. Every single homeless person has a history, a story, which is erased by that very classification of ‘homeless’, as well as neglected by policy makers.

The study of the survival repertoires and ecologies of the homeless in São Paulo, Los Angeles and Tokyo took years to complete. It has become intertwined with other research about a phenomenon strongly connected to design: the development