9 Counter-mappings

Cartographic reason in the age of intelligent machines and smart bombs

> To the young practitioners of this new art, the old geographers believe in a flat earth – two-dimensional, static, and Euclidean, akin to a page in a book. The new view is three-dimensional, organic, and Mandelbrotian, akin to a moment of video. The old craftsmen worked with paper, ink, and a list of coordinates; the new breed has massively parallel computers crunching ever-expanding lodes of information. The veterans believe that they have limned a landscape that is knowable; the punks are anxious to discover and map new realms of dynamic ambiguity.
>
> (Hitt, 'Atlas shrugged: The new face of maps')

> He inquired about the geological structure in his landscapes, convinced that these abstract relationships expressed, however, in terms of the visible world, should affect the act of painting. The rules of anatomy and design are present in each stroke of his brush just as the rules of the game underlie each stroke of a tennis match. But what motivates the painter's movement can never be simply perspective or geometry or the laws governing color, or, for that matter, particular knowledge. Motivating all the movements from which a picture gradually emerges there can be only one thing: the landscape in its totality and in its absolute fullness, precisely what Cézanne called a 'motif'.
>
> (Merleau-Ponty, *Sense and Non-sense*)

What are the implications of seeing our world as not only produced by maps, but decoded, recoded, and further decoded by many maps and their attendant social interests over time? What does it mean to think geographical and social identities in terms of ongoing processes of socio-spatial decoding, recoding and over-coding? What, after all, does it mean to stand in your garden and watch the squirrels tumble through trees in autumn? Architectural lines, built walls, designed windows, bounded decks, easements and rights of ways, floodplains (insured and not insured), electric wires crossing a near-sky while contrails stretch across the higher skies, and beyond them silent tracks of satellites keeping inner and outer space under surveillance, road systems behind the neighbours' property, fenced along the survey line. Leaving the garden to go to pick up the post/mail, walking up the utility easement – the hidden complex of sewers, drains, and wires tracking in and out of platted and plotted houses, roadways, and streams – to the roadside, the liminal boundary of public and private space (itself deeded, over-deeded, surveyed and oversurveyed, delimited and redelimited, and designated and re-designated on map and document). In this liminal space (perfectly symbolized by the US mailbox, owned and erected by the property owner but controlled, regulated and specified by and for the sole use of the US Mail), letters arrive from banks offering credit cards based on zip-coding databases that track and map purchases and payments. Geo-referenced databases give complete strangers more information about me in two minutes than my friends and families will learn in thirty years. Map after map, layer after layer, identity after identity, combining and recombining, crashing and compounding, erasing and reconfiguring ... sedimentations, striations, inscriptions, projections, gorings, scalings ... markings on the multi-subject that is walking through the garden to check the mail. Codings and recodings producing subject and world along axes of difference, as dwelling, access, flow, consumer, owner, borrower, neighbour; identities and codings that multiply subjectivities in interesting and always unexpected overdetermined ways. We are, in this sense, over-coded as multiply coded shifting, decentred identities. That is, we are rhizomatic:

> The rhizome is altogether different, *a map and not a tracing* ... What distinguished the map from the tracing is that it is entirely oriented toward an experimentation in contact with the real. The map does not reproduce an unconscious closed in on itself; it constructs the unconscious. It fosters connections between fields, the removal of blockages on bodies without organs ... The map is open and connectable in all of its dimensions; it is detachable, susceptible to constant modification. It can be torn, reversed, adapted to any kind of mounting – reworked by an individual, group, or social formation.
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> (Deleuze and Guattari 1987: 12)

What would it mean, then, if our maps were indeed schizoid, evoking the new realms of dynamic ambiguity and the Cézannean 'motif' with which I began this chapter?

The post-war history of technical development, combined with the longer, western history of observer epistemologies, have produced a highly efficient and widely used science of mapping predicated on technical instrumentation, accuracy and representation aimed at mapping these social, economic, political and geo-strategic relations. On the other hand this scientific cartography has in the process and in important ways written out its own social, cultural and institutional histories and commitments. The complex interweaving of descriptive and perspective scopic regimes has worked to create cartographies with global reach, planetary consciousness, and a commitment to unfettered criticism and openness to the world. But this global view and its attendant critical openness, with all its powerful universalizing and distancing perspectives, has also overlooked or hidden its social commitments and interests, particularly its repressive and productive ties to state, corporate and military power. This combined technical–historical project has been one in which Cartesian–Kantian conceptions have framed science and space as world-as-picture, the God-trick of the all-seeing eye, at one and the same time viewing all places from some particular position of privilege (Metropole, Europe, Male, White, North, Wealthy, Industrial, Urban).

Second, in the hands of post-structuralists the crisis of representation (in part produced by the very reproducibility and manipulability of mapped images, as Hitt indicates in the quotation that begins this chapter) has opened up new sites and questions for a reinvigorated mapping studies – a cultural studies of mapping. The very issues overlooked or hidden by traditional statist and institutionalized cartographies, as a result, have become the subject of intense scholarly interrogation. While cartographers renew their commitments to the business of pursuing the technical 'march of progress', within cultural studies and science studies the origins of mapping techniques in land surveys, the role of imperial projects of territorial expansion and control, the ordering and disciplining roles of national topographic mapping agencies, and the rendering of nature and society as objects to be represented graphically as well as scientifically and politically, have all become sub-fields for critical analysis.

Third, we have seen how, in this rethinking of how maps work, some fundamental assumptions about vision and representation have also been brought into question. One result has been that a geographical imagination has begun to destabilize universalist and totalizing visions of mapping and cartography, producing in their stead geographically and historically specific understandings of scopic and representational regimes. The idea that vision and mapping have their own intrinsic geographies is in turn reshaping science and technology studies in new and interesting ways.

Fourth, the reinvigoration of a particular history of representation by a geographical imagination is also tied to the challenge Brian Harley gave us to study maps in human terms, to unmask their hidden agendas, to describe an account for their social embeddedness and the way they function as microphysics of power, and to analyse how they are part of a domain of social practices whose effects have ethical implications for the societies in which we live. As Brian understood so well, when these *broader* social contexts are forgotten, as they have been in much scientific cartography, power is exercised without mediation or reflection and the public sphere is distorted. In 1986, I argued that a society gets the kind of geographical education it deserves; that a democracy that shuns deep geographical engagement and practice has little or no interest in fostering a critical geographical imagination. This was Brian Harley's concern over the generalizing of digital cartography and geographical information systems. We both felt that what appeared to all intents and purposes to be a debate about epistemology, technique and information, was actually central to the kind of society we produce and reproduce, and specifically the kind of democratic possibilities that are forged and protected in the public sphere. It was never the case that geographical and mapping practices were unimportant. Far from it. It was the case that the significance of cartographic and geographic reason in the structuring of modern economies, states and lives was, for whatever reasons, overlooked. As Gunnar Olsson and Frank Farinelli remind us, it was a pity that Immanuel Kant, a teacher of geography for over thirty years and author of the *Critique of Pure Reason*, *Critique of Practical Reason*, and *Critique of Judgment*, never did write the fourth critique; *Critique of Cartographic Reason*.[1] It is perhaps also to our shame that for so long we geographers allowed the cartographic and geographic imaginations to be written out of discussions of social life.

Harley's concern with this issue can, I think, be equated with Juergen Habermas's (1994, 1997) concern with the role of the public sphere at the point of transition and reunification in 1991. Habermas argued that the achievements of the Federal Republic of Germany after 1945 (consolidated and extended after 1968) had led to social gains and specific controls on the predatory nature of capitalism. These needed to be protected after the reunification process of 1991, a fact prefigured in the constitution. Recognizing its own origins in a divided Germany, the Federal constitution required a renegotiation of its own basic principles at the point of reunification. But this constitutional imperative was ignored as the map of a united Germany was redrawn after 1991. Habermas saw this as both a moral failure of the Federal Republic's politicians and a historical mistake that would extend the imperial power of the West over the East, unleash new forms of predatory capitalism, and deepen the processes of uneven development within the new country.

Harley saw a similar ambiguous danger in the emergence and wholesale acceptance of computerized information technology, and especially GIS. Although maps were, he argued, instruments of power and embedded in social systems of ethnocentricism, privilege and control, they were also ambiguous objects as a result of their widespread dissemination by the state and the printing presses. The national topographical paper map and its variants had been disseminated to a broader public, popularizing and democratizing the topographic map (see Matless 1999). Ironically, it is Harley (1990: 1) the theoretician of the power of maps who argued most directly and strongly for retaining topographical maps in their paper form and against the possibility of 'going digital' 'on the grounds that they can offer a democratic and humanistic form of geographical knowledge'. The emergence of digital cartography and GIS required, in his view, a wholesale renegotiation of the relationship – the modern constitution – between technological science and society.

In the ten years since Harley wrote those words, computer mapping has become ubiquitous in societies in which the topographic map was widely available and disseminated. But it has also begun to emerge in important ways in societies without available topographical maps or where topographical maps did not function as democratizing tools. State socialist countries experienced their own crisis of representation in 1989 as popular forces rejected the apparatchik control over information; environmental data, financial accounts and topographic maps were classified as top secret in nearly all state socialist societies, serving few direct roles in the body politic except through agencies of the military and the state. One consequence has been a rapid, albeit ambiguous, adoption of GIS and digital-imaging and mapping systems in recent years leading to a widening and a democratizing of access to information, but also an entrenching of bureaucratic and centralizing tendencies within the planning system (see Pickles and Mikhova (1998) on the role of topographic maps in state socialist Bulgaria and digital mapping in post-socialist Bulgaria. Also see Ben Orlove (2002: 20ff.) for a parallel discussion of the role of maps in Peru). Non-representational mapping cultures encountered their own crisis of representation as one of 'imposition'; textual representations such as topographic maps, with all their attendant objectifications and erasures, were literally and figuratively imposed on their lived worlds creating deep social and economic crises.

Current interest in counter-mapping and local access to global mapping technologies reflects these imperatives to respond to the rapid expansion of information, imaging and mapping technologies. But these responses are also ambiguous as social struggles over natural resources and resource extraction, for example, are increasingly waged with scientific mapping tools such as GIS and remote sensing.

It is to these that I turn in this final chapter by asking the question: how have cartographers (of the paper form and the digital form) begun to think beyond the unmasking of the silences in traditional maps to the production of new maps for new worlds? To what extent have new critical cartographies emerged as a form of deconstructive practice, disseminating, deferring/differing and recontextualizing the world in the interest of a broader democratization of knowledge and information? And, to what extent have these 'Other' crises of representation been considered? In so doing, I want to resist the temptation to read the new cartographies and critical theories as somehow transgressing traditional boundaries, as if those boundaries were themselves univocal and hegemonic. If Enlightenment cartography was always highly contested and conflicted, then the question of counter-mapping must itself be rethought.

CRITICAL CARTOGRAPHIES

In his 1999 book, Marcus Doel asks us to consider the possibility of a cartography that shimmers. Doel seeks to dislodge our commitments to solid and fixed identities, and instead asks us to think about ways in which flows, relations of difference, and change can be mapped. He asks us to begin to think objects as bundles of relations and challenges us to think of a cartography appropriate to such objects. Before turning more fully to this de-ontologized cartography, and before picking up its implications for nomad cartography, I want to first return to Bill Bunge. In so doing I want to suggest that a de-ontologized cartography is not just about new forms of cartography, new representational practices, and the rendering of new objects. It is also about de-ontologizing cartography-as-we-know-it. That is, it is about both the alternatives to Enlightenment cartography (e.g., post-modern cartographies) *and* it is about the *dissemination of cartographies*; a post-representational account of actually existing cartographies. *It is not only that the instrumental logics and representational epistemologies of universalist cartography are to be countered by new mapping forms, but that the discursive practices of modernist cartography are to be deconstructed and read differently.* In so doing, I ask whether it might be the case that the counter-mappings we seek have been with us all along.

In some ways, Bunge prefigures our concern with nomad cartography. But his cartography is nomadic in a very particular way. By all accounts, Bunge was himself a nomad. Cast out from the hallowed halls of academia, Bunge was what Zizek (2001: 1) calls one of the 'free-radicals' neutralized 'to help the social body to maintain its politico-ideological good health'. In his nomadism, Bunge established the Detroit (and later Toronto) Geographical Expedition to bring radical geographers into the inner city to work together with local groups struggling for civil and environmental rights. In encouraging expeditionary geographies that adapted the skills and insights of geographers to socially relevant issues, Bunge suggested that existing mapping practices could easily be adapted to the concerns of the poor and powerless. In this way, the geographical expedition was to be a reclaiming of the traditional geographical claim to expertise, especially to mapping. Geography had for too long worked in the service of the state, empire and capital. Why could the skills so sharply honed at the workface of capitalism and the state not also be used to benefit ordinary people in their everyday struggles against pollution, underinvestment in social and material infrastructure, against physical danger, and against the diktats of urban planning machines? To this end, Bunge insisted on 'the use of any means necessary' to fight for basic human rights in the city and globally. One central tactic of this urban insurgency was to use cartographic methods to fight for particular causes.

What was particularly interesting about this deployment of cartographic skills was Bunge's tactical commitment to using whatever means were at hand to the best of his ability (to deploy the latest mapping and analytical techniques in the struggle), to proliferate their use (the many thousands of maps he produced to demonstrate the alternatives that Detroit Education Board had in making their decisions about school zoning), and to develop and use these techniques in consultation with the local individuals and groups most in need of them.

Bunge was committed to science as a tool of progress or 'critical modernism' (see Pickles (2001, 2002) and Peet and Hartwick (1999, 2002) for a broader discussion of critical modernism), but he was also committed to a pragmatics of map use.[2] He aimed to challenge the traditional fetishes of cartographic and planning practice. Uneven distributions of income, health and education were illustrations of the extreme pathologies of a society and a 'measure of the degree of biological breakdown among the species *Homo sapiens*' (Bunge 1975: 149). In his cartographies of Detroit, abundance and lack, super-abundance and brutal poverty are depicted side by side, whose boundary is 'an intermediate zone in constant danger of falling into poverty' (p. 150). Organic instability, violence, tension, starvation and desperation populate Bunge's cartographies, as he asks us to consider the simple (yet often overlooked) geographical question: how can children go hungry when 'overabundant' food is stored in warehouses, where it often is allowed to rot? How can a cartographic imagination assist those in dire need in Detroit's 'City of Death' to achieve their species-being and the equality that is their right?

Such an insurgent cartography required the adoption of different 'perspectives'. Instead of the rationalizing 'God-trick' of the universal gaze, Bunge insisted on a repositioning of the cartographer vis-à-vis those being mapped. Instead of mapping from the point of view of the urban planner, he insisted on community-based mapping. One result was *Fitzgerald*, a geographical biography of a neighbourhood with a very different social cartography of urban life. Embedded in needs and struggles identified as important to the community, expedition members literally 'mobilized' cartography to make visible the conditions of existence of the ghetto, unemployment, and social conflict. Instead of preparing maps from the planner's point of view or from the 'adult's-eye' view, Bunge (1971, 1975) used abstract mapping to unveil inequality and social violence, committing one project to the preparation of maps relating to children's safety. Simple maps of hazardous materials along streets, incidences of rat-bites, or unlit alleyways would provide useful tools for empowering communities to improve the lives of their children; to literally and figuratively take back the streets. The resulting maps are powerful and poignant images, not the least because they are stark reminders of how few cartographies have – until recently – actually taken a stand in this way, and how much of modern cartography is focused on other objects and interests.

In *Ban the Bomb: The Nuclear War Atlas* (1988), Bunge again asserted the power and necessity of a geographical imagination in dealing with the terror of strategic planning based on mutually assured destruction. In contrast to 'geographers' near criminal neglect': 'Geography's intrinsic insight is that there are plenty of half-lives in physics' infinite time in which to recover from radioactive war, but no place on our finite earthly domain in which to do so.' The atlas is a tight, technical presentation of the geographies of potential impacts of nuclear war. In his 'geography of civilization' he asks, what happens when the upper half of the urban hierarchy is destroyed by nuclear blasts? What are the distance decay curves for the blast, heat and radiation effects of a nuclear bomb, and what are the trend lines of speciescide, nuclear proliferation and weapons accumulation? Deploying the tools of demography, economics, and spatial/urban analysis, Bunge 'enlivens' the geographies of nuclear war. But nowhere is this political dissemination of technique more effective than when he turns to cartographic methods.

> Therefore, gentle reader, read on and then after the hour it takes to study this atlas, act for peace as if the lives of the children in your family, and your own personal life too, depended upon it. To save humanity, save the children from nuclear war!

Today we perhaps reread the history of modern geography too much from the perspective of the end of century, the end of the cold war, and 'the end of history'. But Bunge reminds us of a different time and place when the children of 1968 saw history as a barrier to social progress and the future as open with possibilities (see Watts 2001). If spatial analysis, cognitive–behavioural approaches, and humanistic geographies were all grappling with Cartesian–Kantian problematics, presupposing notions of science, space, subject and mind, that have all proven to be too instrumental, too captured by a cartographic anxiety, they were also struggling with the historical challenges and opportunities of post-war change.

While Bunge's voice was in many ways a voice from the margins, it was also representative of others who were grappling in their own ways with what possibilities there were for more humane, less instrumental, people's geographies. I take this to be precisely the point of Gunnar Olsson's, Peter Gould's, David Harvey's and Derek Gregory's prolonged struggles with spatial analysis. Positivism has always had at its core a fundamental ambiguity: a progressive epistemology and commitment to the democratizing of science, even as it has pushed hard for the instrumentalizing of society and the need to legislate the masses through a cadre of technically trained experts and elected officials. But also, at its very heart, spatial analysis understood the crucial problematics of mapping: that the construction of parametric and non-parametric spaces was an infinitely open analytical exercise, that the world was never narrowly reflected in the mirror of the map, and that the spaces of our lives were limited only by our ability to imagine and draw the lines needed to give them identity. Their fascination with mathematics and theoretical abstraction seemed to offer new flights of imagination to configure new spatialities and new cartographies, as I think their collective fascination with Torsten Hagerstrand's time geography mappings illustrates.

In the United States, the uses of mapping for local empowerment have grown rapidly in recent years. Doug Aberley's (1993) *Boundaries of Home: Mapping for Local Empowerment* is one such example that uses alternative mappings to support bioregionalists' efforts at 'reinhabiting place' (p. 3). Extending this sense of cartographic geosophy and Bunge's expeditionary geographies, Cravey *et al.* have recently returned to the question of the progressive potential of everyday mapping. In turning to what they have recently called the 'mundane experience' of everyday life, Cravey *et al.* (2000: 229) have in essence asked, what would a cartography of experience look like if it turned its attention to at-risk populations? In their essay 'Mapping as a means of farmworker education and empowerment', they develop the ideas of the Brazilian-born scholar–activist Paolo Freire, who sought to change how popular education treated everyday life. Drawing on the experiences of peasants and workers, Freire developed literacy programmes that helped people to increase their control over their personal and community lives, literally by giving them command over their language. Cravey *et al.* suggest that mapping too can operate as a kind of graphical and spatial *conscientization.* Mapping can, in effect, be transformative in both diagnosing and dealing with health issues among at-risk and underserved populations.

In '*Terrae incognitae*' J.K. Wright (1942: 83) was concerned with the closing of geographical categories wrought by totalitarianism ('Map Makers are Human') and by the emergence of a parallel instrumentalism in the social and geographical sciences. Wright urged geographers to be open to 'the study of geographical knowledge from any or all points of view . . . [to] geographical ideas, both true and false, of all manner of people'. There are, I think, two important ways in which this claim to 'geosophy' played out historically. Earlier I focused on the commodification of culture and the ways in which such notions of 'local knowledge' merely extended the economy of display. But, in transformative mappings such as those by Bunge and Cravey, we see more clearly the progressive moment in Wright's claims for geosophy. Not only has a geosophic sensibility opened mapping to specific and different positionalities, but in so decentring the cartographic imagination, mapping practices have begun to pay more attention to the spaces of the everyday.

Marc Treib's 1980 monograph '*Mapping Experience*' reflects this concern with the many ways in which we do map everyday life. Focusing on the diversity and variety of mapped spaces, Treib sought to refocus attention on the ways in which cartographers were experimenting with new mapping forms to articulate experiences of space through new metrics and design features. '*Mapping Experience*' is a largely descriptive and evaluative document, short in length, and perhaps too assertive in tone. But it illustrates well the multiplicity and complexity of mapping forms that have emerged to chart the social cartography of spatial life. Treib's collection illustrates how these multiple spaces and forms have informed cartographic practice, and particularly how the city is *always already* being mapped in diverse ways, using a wide range of cartographic forms. In many ways, Treib's '*Mapping Experience*' symbolizes for me the diversity of cartographic experiments that followed 1968. The reworkings (and subsequent recommodification) of notions of subjectivity, experience and social life that so typified the revolutions of 1968, took root in the myriad cartographies of experience that were produced in its wake. If we look at mapping in this way (as already multiple, experimental, and open to flows, relations of difference, and change), we can, I think, begin to speak of cartographies as already and always involving imaginative open, contested and contradictory mappings.

SOCIAL CARTOGRAPHIES OF EXPERIENCE: GO ON, GO ON!

Thus, I have ended this book not with prescriptions for new techniques or practices of cartography, but with a question: what would cartography look like when we have overcome the modern settlement? Or, as Gibson-Graham might have asked, when we overcome the representational logics that bind us to a specific notion of cartography, what would cartography after Cartography look like? Or, again, when we abandon all forms of reduction and allow for the real possibility of logics of and . . . and . . . and . . . and . . . what kinds of cartography would be possible? How can we usefully and interestingly map 'lines of flight'? How are we *actually already* doing this even as we imagine and defend a rationalist and centred cartography?

Slavoj Zizek begins his book *The Ticklish Subject* (1999) with the mischievous question: what if, after all, Descartes was correct? What if, after all, we were to think of maps much as we have always thought about them? What if, after all, we were to continue to produce maps in much the same ways? In my writings on the political economy of post-communist transformation, I have taken great pains to stress the importance of focusing attention not on the categories that circulate so freely in communist and post-communist studies, but on actually occurring communisms and actually occurring transitions/transformations to capitalisms and to other forms of economic life. And, as here, I have expressed both as plurals: multiple communisms and transitions each at work across space and in places, each secreting their own spatialities and natures. In the final part of this book, then, I want to suggest that the axiomatization of modern thought, the abstraction of scientific–technological thinking, has developed an account of mapping, maps and cartography that belies the pragmatics of actual map-making and map use. It literally performs the God-trick on cartography's own lines of flight. That is, as Deleuze and Guattari have indicated in their analysis of the Oedipal fixation in psychoanalysis, and as Gibson-Graham (1996) have shown in *The End of Capitalism (as we know it)*, I am suggesting an 'end of cartography as we knew it' or that 'cartography is not what you think'. It is and perhaps has always been a multitude of practices . . . lines of flight . . . coded and recoded by forms of institutionalized power, but always with leakage. This decentring of the hegemonic formalization of techno-scientific capitalism opens mapping to its own plurality of socio-spatial practices, to its own geographies, to its own conflicted and highly contested nature, and to its many roles in inscribing lines and delimiting identities in the modern mind. Wittgenstein asked what would happen if, far off in the distance, the images began to oscillate? As Gunnar Olsson, Franco Farinelli and Marcus Doel have each recognized so well, our images and maps are already oscillating and shimmering. What has to begin to oscillate and shimmer more freely is our thinking about these actual practices.

None of this amounts to a call to re-historicize social life. I began this section with a discussion of the need to deepen the analysis of the taken-for-granted world and, in this context, I begin with Husserl, Heidegger and Wittgenstein in opposition to the historicizing traditions of Dilthey and the neo-Kantian historians. But there is another reason for avoiding the historicizing trap and it is stated strongly by Zizek (2001: 2):

> *today's (late capitalist global market) social reality itself is dominated by what Marx referred to as the power of 'real abstraction'*: the circulation of Capital is the force of radical 'deterritorialization' (to use Deleuze's term) which, in its very functioning, actively ignores specific conditions and cannot be 'rooted' in them. It is no longer, as in the standard ideology, the universality that occludes the twist of its partiality, of its privileging a particular content; rather, it is the very attempt to locate particular roots that ideologically occludes the social reality of the reign of 'real abstraction'.

Since what Henri Lefebvre (1991) called the 1968 global–local crisis in social modernity, 'the production of space' has occurred in ways that have bound global and local, city and country, centre and periphery together in new and unfamiliar ways (Wilson and Dissanayake 1996: 3). Together these have fundamentally restructured the conceptual and institutional practices of mapping disciplines, and they are changing the ways in which we experience and understand earth, space and globality at this end/beginning of century. New geographies have proliferated and these in turn have necessitated new categories and pedagogies.

This was, I think, what Fredric Jameson (1984: 89) was suggesting when he defined a new provisional aesthetic of cognitive mapping as one that places 'the analysis of representation on a higher and much more complex level'. Jameson (1984: 90) saw in the idea of cognitive map a parallel with the Althusserian and Lacanian redefinition of ideology as 'the representation of the subject's *Imaginary* relationship to his or her *Real* conditions of existence'. Jameson calls upon the cognitive map (and the social cartography it could produce) to 'enable a situational representation on the part of the individual subject to that vaster and properly unrepresentable totality which is the ensemble of the city's structure as a whole' (Jameson 1984: 90):

> An aesthetic of cognitive mapping – a pedagogical political culture which seeks to endow the individual subject with some new heightened sense of its place in the global system – will necessarily have to respect this now enormously complex representational dialectic and to invent radically new forms in order to do it justice. This is not, then, clearly a call for a return to some older kind of machinery, some older and more transparent national space, or some more traditional and reassuring perspectival or mimetic enclave: the new political art – if it is indeed possible at all – will have to hold to the truth of postmodernism, that is, to say, to its fundamental object – the world space of multinational capital – at the same time at which it achieves a breakthrough to some as yet unimaginable new mode of representing this last, in which we may again begin to grasp our positioning as individual and collective subjects and regain a capacity to act and struggle which is at present neutralized by our spatial as well as our social confusion. The political form of postmodernism, if there is any, will have as its vocation the invention and projection of a global cognitive mapping, on a social as well as a spatial scale.

In this sense, we can see the digital transition as a part of a broader post-Fordist development project; a global restructuring that is reconfiguring the geopolitics of the planet. The national and international imaginaries that emerged in an era of nation-state geopolitics are being reworked and new geo-political and geo-economic forms are emerging. Wilson and Dissanayake (1996: 2) have called this the 'process of translating the transnational structurations of nation, self, and community into 'translational', in-between spaces of negotiated language, borderland being, and bicultural ambivalence.' As a result 'The geopolitics of global cultural formations and local sites are shifting under the pressures of this new 'spatial dialectic' obtaining between mobile processes of transnationalization and strategies of localization or regional coalition.'

Beyond a political economy and geopolitics of technical change, a political technology of the social body and a corresponding regime of morality is also emerging, in which our understanding of the 'subject' itself is being reconfigured (see Hillis 1999a, 1999b; Uebel 1999). Felix Guattari (1991: 18) has called this 'the fabrication of new *assemblages* of enunciation, individual and collective' – in which actors and scales of action are no longer only governments and nation-states, but complex assemblages that go well beyond the military industrial complex of the 1950s and 1960s and multi-national corporations of the 1980s and 1990s. One way in which this is happening has to do with the very possibilities of the new technologies.

There is – as Michael Watts (n.d.) has written –

> a compelling paradox at the heart of globalization which turns on the differing ways in which material exchanges, forms of governance and authority, and symbolic interchange stand in relationship to place, territoriality or region. Globalization cannot simply be grasped as a solvent, or as an unalloyed force of cultural homogenization or geographical deterritorialization. For every instance of footloose financial services as a global space of flow and movement, there are other productive sectors characterized by economic rigidity and localization. For every case of the 'retreat of the state' there are equally compelling cases of enhanced state capacity. For every instance of global civil society or multilateral governance there are new configurations of national, local or regional politics. For every global technological or cultural diffusion, there is an equal and opposite intermixing and locally inventive appropriation. For every case of global cosmopolitanism and flexible citizenship there is a resurgence of local identity and 'militant particularism.' For every integrated global network there is, as Manuel Castells (1996) says, a black hole of displacement, exclusion and marginalization. Globalization seems to necessarily contain its opposite: the power of place and local identity, the ever-present local disjuncture and irruption, the multiplication of new forms of difference and heterogeneity.

For Watts (n.d., 1997) globalization is not displacing or undermining the importance of place or locale, but highlights the fact that much life is being conducted in 'globalized sites'. As Doreen Massey has so clearly shown, the flows, networks and movements that seem to be the hallmarks of globalization have not erased place or locality or region. First, globalization with its emphasis on the interactive world is not antithetical to the area – the region, the locality, the place, the nation – but reaffirms it in new and different ways. Second, globalization is an uneven, contradictory and complex set of processes perhaps best understood in quite specific 'globalized research sites'. Third, globalization challenges the classic notions of how we study and map the world at any scale, and calls for rethinking theory and method in 'globalized sites'. And fourth, globalization challenges the historic privileging of western cartographic logics and calls for rethinking and reconstructing mapping theory from more balanced comparative perspectives and materials.

What cartographies will be attentive to these rich respacings of social and political life? Overcoming the God-trick means paying much more attention to the multiplicity and diversity in what previously passed for unity. It means deconstructing and disseminating both traditional Cartesian anxieties and the anxieties that see in maps only instruments of power. But it must also see in this analytics of complexity something other than a merely liberal reading of benign technologies and instruments put to good or bad uses (see Monmonier 2002). The openness to difference is a much more radical epistemological opening of the sutured politics of contemporary cartographics. Such new cartographies might deploy every technical tool to produce mappings that speak their situated and selective interestedness, that record their metadata and political commitments, and that recognize the pragmatic nature of their own practice. But it is also a cartography that needs a new openness to producing dialectical, dynamic and metaphorical images; one that resists collapsing striated to smooth space, the local to the global, or the concrete and particular to the abstract and universal. It is, above all, a cartography that would be attentive to the serious consequences of the lines we draw and the boundaries we inscribe in the very broadest of terms (Deleuze 1988).

In a series of reflections on the cartographies of borders, the changing nature of citizenship, the shifting relationship between *ethnos* and *demos* in the twinned 'nation-state', and the post-national order of Europe, Etienne Balibar (2002a, 2002b) has recently focused on precisely such dialectical cartographies of geographical transformation and on what he calls the 'vacillating' nature of contemporary borders (2002a: 91). For Balibar (2002b: 71) the borders of new politico-economic entities are no longer localizable in an unequivocal fashion, nor are they situated only (or at all) at the outer limit of territories. They are not disappearing under the pressure of globalization. Instead, they are being multiplied, thinned out and doubled: they are 'dispersed a little everywhere': to the outer limits of the European Union, to the Schengen signatory states, to the inner limits of cosmopolitan cities. The reordering of citizenship and civic rights in the globalized modern state redraws the border, and its mark is carried with the immigrant daily. In this sense 'border areas are not marginal to the constitution of a public sphere but rather are at the centre' (Balibar 2002b: 72).

Contemporary globalization brings with it what Balibar (2002a: 93) calls an 'under-determination of the border' and a dispersal and proliferation of their roles in defining citizenship, forms of inclusion and exclusion, policing, and identification. In this sense, every map is always a 'world' map and in this changing world we need new cartographies that evoke the vacillating, dispersed and disseminated nature of borders. The cartographies that

emerged to 'service' the territorialized nation-state of an earlier round of globalization – Europe as the universal centre of politics, thought and economy – defined the global by universalizing largely European values. As Chakrabarty (2000: 4) suggests:

> The phenomenon of 'political modernity' – namely, the rule by modern institutions of the state, bureaucracy, and capitalist enterprise – is impossible to *think* of anywhere in the world without invoking certain categories and concepts, the genealogies of which go deep into the intellectual and even the theological traditions of Europe. Concepts such as citizenship, the state, civil society, public sphere, human rights, equality before the law, the individual, distinctions between public and private, the idea of the subject, democracy, popular sovereignty, social justice, scientific rationality, and so on all bear the burden of European thought and history ... These concepts entail an unavoidable – and in a sense indispensable – universal and secular vision of the human ... [which] has been powerful in its effects.

Balibar reminds us of the need to see always in our inscriptions forms of boundary-making that have effects. In the contemporary world of globalizing transnationalisms the boundaries and borders that shape and structure the geographies of inclusion and exclusion, property and citizenship, *ethnos* and *demos* require new cartographies of geographies unhinged, plastic space and sliding signs (Doel 1999). We need new diagrams, abstract machines and maps that are attentive to these highly differentiated reconfigurations of time and space, and to the new notions of nationhood, citizenship, state and territory they entail.

It is here that we again encounter Gunnar Olsson's continued explorations with the cartography of power: 'No rest, no escape. GO ON, GO ON! The explorations into the taken-for-granted must continue' (Olsson 1994: 115). How are we to 'draw the invisible lines of the taken-for-granted?' How are we to speak so that we are understood, to say that something is something else and still be believed? This, indeed, is the trick of the magician, the poet and the scientist. It is the goal of cartographic imagination.

Drawing on Olsson's arguments, the Italian geographer Franco Farinelli (1999) has called for a geography that recognizes the 'Witz' or joke or witticism of 'bat-words' (mouse/bird) like landscape, space, world, earth; words that contain what Olsson calls an ambiguous duplicity of meanings ... at once material, artistic, ideation, and lived. If the epistemology of modernity fixes meaning, the emergence of epistemologies and mappings of transparency open up the possibility of thinking about the world-not-as-picture and the world-not-as-exhibition, but in terms of new dialectical images that render movement as movement, rather than frozen images, dead, inert, fixed.

The challenge ahead then is precisely the challenge with which we began. How can we open our everyday and professional practices to new cartographies and new geographies? I end with three answers.

First, as Bill Bunge has demonstrated so well, our existing cartographies and categories are far less fettered than we have perhaps acknowledged. This is not to say that traditional and contemporary cartographies have always been, or are currently open to these new cartographies. It is to say that it may be possible to develop new cartographies and geographies only by changing the way we think about the cartographies we have. The end of cartography as we know it is, as Gibson-Graham, Deleuze and Guattari, and Negri and Hardt have variously shown us, the possibility of opening the contradictory moments within existing practices to new opportunities and alternative projects.

Second, experiments with shattered logics, flowing art forms, and situational performance are highly productive and suggestive. They expand in important ways both our practices of mapping and our imaginations about the 'Real', and they do so in ways that destabilize all forms of the God-trick, universalism and the march of progress. They force us to understand the pragmatics of map use and the social embeddedness of map-making. In such perspectives, the mapping sciences can usefully be reconnected to the actual practices of what has always been a fractal cartography of complexity. No longer a cartography of statecraft, of the centred and nominally universal polity, but a cartography of ongoing space–time reconfigurations; new boundary-making always with potentially serious consequences.

Finally, if the new cartographies are already with us, we must also recognize that they do not have a unitary and fixed identity. The abstractive mappings of von Humboldt's planetary consciousness, the progressive struggles of spatial analysis, the conceptual flexibilities and political possibilities of the Digital Earth Initiative and the *Atlas of Cyberspaces* have already de-ontologized whatever we ever meant by modern cartography in ways that we are perhaps only beginning to recognize. In this sense, Foucault will always be correct when he claimed that a whole history of spaces remains to be written.

Notes

1 Maps and worlds

1 'On persuasion and power', presentation to the Committee on Social Theory, University of Kentucky, 29 March 1991.

2 In this new world of images, commodity fetishes and dream fetishes become indistinguishable. Food and other commodities drop magically onto the shelves of stores, and advertising and commerce come to be seen as the means of social progress. The democratization of culture is now seen to derive from the mass media, and they too become fetishes (Buck-Morss 1989: 120).

3 The intimacy of this perceived relationship is all too clearly illustrated in Hartshorne's (1939: 248) quotation from P.E. James: 'The most important contributions of geography to the world's knowledge have come from an application of the technique of mapping distributions and of comparing and generalizing the patterns of distributions'.

4 Gregory (1994) used the term 'Cartographic Anxiety' to refer to the foundational and objectivist epistemologies of modern cartography that assume the separation of subject and object, knower and world. This 'observer epistemology' leads to deep anxiety about how we know and represent the world, how we know it to be true, and how we decide what to do in the face of such 'objective' knowledge. The term is adapted from Richard Bernstein's use of 'Cartesian Anxiety' in *Beyond Objectivism and Relativism: Science, Hermeneutics and Praxis*. This anxiety refers to what Bernstein (1983: 18) calls: 'The specter that hovers in the background . . . not just radical epistemological skepticism but the dread madness and chaos where nothing is fixed; where we can neither touch bottom nor support ourselves on the surface. With a chilling clarity Descartes leads us with an apparent and ineluctable necessity to a grand and seductive Either/Or. *Either* there is some support for our being, a fixed foundation for our knowledge, *or* we cannot escape the forces of darkness that envelop us with madness, with intellectual and moral chaos'.

5 In a similar way, Cosgrove's (1999: 1) recent collection of essays *Mappings* focuses on: 'the long evolution of western spatiality in order to explore some of the contexts and contingencies which have helped shape acts of visualizing, conceptualizing, recording, representing and creating spaces graphically – in short, acts of *mapping*'.

6 I use the term 'dissemination' in a Derridean sense to refer to all the ways in which we can see at work in mapping practices, multiple epistemological and geographical visual regimes.

7 Instead of using the published form of this table (see Woodward and Lewis 1998 Table 1.1), I have retained its pre-publication form kindly supplied to me by David Woodward. The published table reworks the categories of process