

Science fiction or future fact? Exploring imaginative geographies of the new millennium

Rob Kitchin¹ and James Kneale²

¹Department of Geography, National University of Ireland, Maynooth, County Kildare, Ireland

²Department of Geography, University College London, 26 Bedford Way, London WC1H 0AP, UK

Abstract: In this article, we examine the imaginative geographies of the new millennium through a critical reading of cyberfiction. This fiction, we argue, through its use of estrangement and defamiliarization, and its destabilization of the foundational assumptions of modernism, provides a cognitive space in which to contemplate future spatialities given the present postmodern condition – a cognitive space which is already providing an imaginal sphere in which present-day individual and institutional thought and practice are partially shaped. Using a detailed reading of 34 novels and four collections of short stories, we illustrate the utility of this cognitive space, and its appropriation, through an exploration of fictional visions of postmodern urbanism in the early twenty-first century. We assess the viability and utility of these visions by comparing them to academic analyses of the sociospatial processes shaping present-day urban form and spatiality.

Key words: imaginative geographies, science fiction, urban futures.

I Introduction

Geographers have long been interested in literature, from studies which used novels as sources of geographical 'data' (Darby, 1948; Jay, 1975) to humanistic interest in literature's apparent success in capturing the subjective experience of place in print (Tuan, 1976; 1978; Pocock, 1979; 1981). Following criticism of both approaches (Thrift, 1978; Gregory, 1981), and a closer engagement with literary theory as part of geography's cultural turn (Brosseau, 1994), representations of space in novels and nonfictional forms are once again being interrogated. Attention is now given to the

sociological and geographical imaginations of writers (Daniels and Rycroft, 1993; Foster, 1994); the textualization of movement, routes and other spatial narratives (Carter, 1987; Cresswell, 1993; Brosseau, 1995); and the place of literature in the production and consumption of geographical knowledges and cultural differences (Sharp, 1994; Phillips, 1997). At the same time, increasing attention is being given to space by those working in cultural studies, anthropology, literary theory and elsewhere and this has further emphasized the spatiality of literature (Davis, 1987; Moretti, 1998).

In this article we extend this work to examine the imaginative geographies of the new millennium through a critical reading of the science fiction genre, cyberpunk and other forms of cyberfiction. We believe that such a reading is important for five reasons:

- 1) Cyberpunk writings, in particular, have received widespread academic praise for their recognition and understanding of the sociospatial processes underlying the postmodern condition now prevalent in western societies, and their future visions of the new spatialities this condition will evoke (they have also, as we note, received criticism).
- 2) These writings provide an informed view of possible futures, given present trends – futures that are imaginatively constructed and free of the constraints of academic prediction making.
- 3) Cyberfiction provides cognitive spaces, informed ‘sites of contemplation’, in which to examine the present postmodern condition and formulate critical, resistive practices (see Haraway, 1991).
- 4) A number of recursive relationships exist between authors and readers, and there is clear evidence that some sections of society seek to make real the sociotechnical futures articulated in the narratives (and in some cases have succeeded – fiction *is* becoming reality¹).
- 5) These fictions inspire and articulate emerging popular geographical imaginations, particularly understandings of cyberspace (Kneale, 1999).

The analysis we present is based on a detailed reading of 34 novels and four collections of short stories. All the novels were by North American writers bar two,² all written by men bar two,³ and all had plots that involved cyberspace, virtual reality and other information and communication technologies. Each book was read for passages containing ‘geographically related’ descriptions and narratives. We chose to survey a large number of fictions in order to identify commonalities and themes, rather than simply to provide an interpretative analysis of one or two authors. In order to manage and structure our analysis selected passages were transcribed and imported into NUDIST 4.0 (a qualitative data analysis package) and the data were interpreted using the prescription detailed in Dey (1993) and Kitchin and Tate (1999). Use of a package like NUD-IST for this kind of task does not necessarily lead to the ‘stamp collecting’ approach or ‘casual ransacking’ of the text criticized by Thrift (1978) and Gregory (1981), respectively; rather it helps to organize material already chosen by the authors for analysis. The resultant database consisted of hundreds of crossreferenced passages which referred to many aspects of geography including descriptions of future spatialities, environmental hazards, and spatial forms and spatiality online.

In order to illustrate the utility and appropriation of the cognitive spaces of cyberfic-

tion, in this article we focus our attention on the imaginative geographies of postmodern urbanism in the new millennium.⁴ Before detailing our analysis, however, we start by introducing the genre of science fiction (subsequently SF) and, in particular, cyberfiction.

II Imaginative geographies of science fiction

In *Worlds apart*, Malmgren (1991) contends that fiction displaying scientific imagination transformed into the recognizable genre of SF with the publication of Mary Shelley's *Frankenstein* in 1818. This transformation occurred, he argues, because the age of Enlightenment provided a shift in systems of thought about how the world worked. For Malmgren, SF as a genre is predicated upon the assumptions of Enlightenment thought. Rationale scientific practice, the industrial revolution and accompanying technological and social change demonstrated how people, through the use of science, could advance society. Moreover, 'the possibility that the present had evolved from the past and that the future could be extrapolated from the present' opened up the future to narrative imagination (Malmgren, 1991: 4). This imagination throughout the nineteenth and twentieth century was founded on a number of principles, namely, scientific rationalism (in an uneasy relationship with humanism), linear time, and an external world which is both real and phenomenal.

SF's appeal is the creation of a sense of estrangement, induced through the introduction of a totalizing novum (novelty, innovation) in the form of extrapolation and speculation (Suvin, 1979). However, this estrangement (unlike fantasy writing) seeks plausibility by balancing the fantastical with a scientific rationale that domesticates the implausibility of the narrative; estrangement is contained by scientific explanation. Malmgren (1991: 6) thus notes, 'SF rigorously and systematically "naturalizes" or "domesticates" its displacements and discontinuities'. Likewise, Samuelson (1993: 198) suggests that 'regardless of its setting in time and space, SF depends on transgressions of what its readers think of as reality. To justify those transgressions, it establishes images of reality on grounds essentially theoretical'. In turn SF uses its narrative to say something about the present condition, so that Bloch (cited in Suvin, 1979: 54) states 'the real function of estrangement is – and must be – the provision of a shocking and distancing mirror above the all too familiar reality'. SF thus creates a cognitive space, an estrangement between real and fictional worlds, which the reader must negotiate (Malmgren, 1991).

Both Malmgren (1991) and Suvin (1979) argue that it is not the storylines that make the SF genre distinctive, but rather their examination of worlds, this one or otherwise. In other words, these novels are expressly concerned with *spaces* 'elsewhere'. Armit (1996: 5) thus contends 'it is the spatial that determines the realm of textual dynamics' and suggests that space has become a central metaphor in the examination of SF and fantasy fiction. Here it is recognized that estrangement is bound within spatial metaphors such as being 'out-of-place'; the invasion of the bounded space of the self by strangers; the construction of new, unfamiliar spaces; and the disruption of territorial identities. It is therefore suitable to psychoanalytical readings of boundary negotiations and other social, critical analyses. Given the centrality of space, it perhaps a little surprising that to date the imaginative geographies of SF

have been little explored by geographers or other spatial theorists.

In our analyses we focus our attention upon one particular genre of SF that we have termed cyberfiction. Cyberfiction is any form of literary fiction set in the near-future within which information and cyberspace technologies, such as the Internet, virtual reality, telemediation, computer intelligence, surveillance or person-machine relations such as cyborging, are a central part of the story. The novels which fall under this umbrella term are diverse but can generally be classified into two camps: cyberpunk and mainstream. Whilst we include analysis of both types of fiction, we concentrate upon the work of cyberpunk writers.

Cyberpunk is a subgenre of SF which takes information technology as its *novum*, using it to explore the ways in which manifestations of these new technologies might transform (and are transforming) our societies. Cyberpunk is predominately an extrapolative fiction (what if . . .), taking the present and projecting it forward, but it is also contains elements of speculation. However, whilst retaining classic SF processes of estrangement, such as technological innovation and defamiliarization (making strange the familiar), analysts have argued that cyberpunk is 'postmodernist SF' (McCaffery, 1991), for two principal reasons.

First, it is contended that cyberpunk was one of the first forms of literary genre to recognize, reflect and explore the postmodern condition (the transformation into a postindustrial society, the creation of hyper-real places and simulacra, the merging of technology and nature, etc.). By projecting this condition into the future, Ross (1991: 147) contends that 'cyberpunk sketche[s] out the contours of the new maps of power and wealth with which the information economy [i]s colonising the global landscape'. Unlike other forms of extrapolative fiction, which emphasises the science in SF, the mechanics of technology, cyberpunk focuses on the everyday appropriation of technology; its use rather than design, the interface of technology and human subject (Bukatman, 1993). It thus heralds a posthumanist fiction (Hollinger, 1991), where technology is no longer the background to the narrative; instead the narrative concerns the interconnections between the human and the technological. As a consequence, some academics, notably Federic Jameson (1991), have argued that cyberpunk offers privileged insights into contemporary culture providing a cognitive space through which we can understand the postmodern condition. Moreover, it provides 'spaces of accommodation' where the shock of the new/future can be aestheticized and examined (Bukatman, 1993: 10).

Secondly, cyberpunk describes the postmodern condition through a literary vehicle that is itself decidedly postmodern (the narrative has aesthetic tendencies (surfaces), thematic impulses, blends of narrative styles (McCaffery, 1991)). Cyberpunk thus documents the transformation of the modern into postmodern using a mode of writing that itself challenges modernist modes of thought. Indeed, we would argue that cyberpunk destabilizes the modernist foundational assumptions which lie at the core of nineteenth and twentieth-century SF: self-other; self-society; nature-technology; nature-civilization; rational-irrational; order-chaos. Cyberpunk challenges modernist SF's essentialism: the acceptance as natural of the distinction between us/them, life/death, real/imaginary, and the privileged central position occupied by humans (Hollinger, 1991). Furthermore, it undermines the credibility of modernist SF in characterizing future societies within modernist structures, highlighting the fact that the transformations in technology to make such societies possible might in themselves change society;

that modernity might transform into a condition of postmodernity. As a consequence, in his editorial introduction to the *Science Fiction Studies* special edition on 'Science fiction and postmodernism', Istvan Csicsery-Ronay Jr (1991: 306) suggests that 'with the catastrophic failure of traditional humanist thought, SF has rushed in with a treasury of powerful metaphors and icons capturing the reality of insecure borders'. The utility of these destabilizing cognitive spaces has been exploited by some academics to create critical, political theories to address the legacy of modernism (notably Haraway's (1991) examination of the possibilities of the merging of natural and technological in the development of her cyborg politics). To us, then, cyberpunk, building on the fiction of contemporaries such as Ballard, Burroughs and Pynchon, represents a shift in literary form, style and content as dramatic as Shelley's *Frankenstein*. As with Shelley, this shift was made possible by a transformation in social and material relations.

In contrast to cyberpunk writing, mainstream cyberfiction is often still modernistic in conception and does not necessarily concern the future. Instead, it is fiction that reflects the popularization of information technologies and cyberspace in present-day society. These technologies now form an integral part of cultural and economic life, with the Internet alone used by more than 295 million people (NUA, February 2000). Cyberfiction thus includes contemporary 'romantic' novels concerning affairs conducted through email (e.g., Fletcher, 1996) and what have been termed 'cyberthrillers'. In our analysis, we only refer to mainstream cyberfiction which concerns the near future.

It is our contention that it is particularly instructive for geographers to examine cyberpunk and cyberfiction writings because they provide key cultural products that help shape and inspire popular geographical imaginations. Readings of cyberfiction are, in many ways, enormously productive both in terms of shaping technological development and in articulating new geographical imaginations of emerging spaces like the Internet. Indeed, some academics claim that recent developments in both computing and society can be seen as an attempt to put fictional visions into practice. For example, Tomas (1991) and Stone (1991) suggest that Gibson has shaped significantly the 'information society'. Indeed Stone (1991: 95, emphasis added) stated that *Neuromancer* 'provided . . . the *imaginal public sphere* and reconfigured discursive community that established the grounding for the possibility of a new kind of interaction'.

Similarly, Suvin (1989: 49) argues that William Gibson's work presents:

the coalescing of a new structure of feeling . . . of an important but certainly not all-inclusive international social group . . . More particularly, cyberpunk is correlative to the technicians and artists associated with the new communication media . . . this group is widespread, international, and significant beyond its numbers as a cutting edge.

Consequently, some interesting recursive relationships are developing between novelists and academic scientists, professional engineers, computer programmers, the military, social scientists, politicians, musicians and 'lifestyle communities'. To us these relationships are important because they illustrate the value of these fictions and the ways in which they become incorporated into other ways of exploring and making the future.

It is important to note, however, that this fiction is not simply transmitted to its global audience. Rather it is read selectively and partially, melded with the ideas and

experiences of its readers. As such, not all interpretations of the fiction are received as intended. For example, many Utopian analysts and politicians have drawn on Gibson's writing in formulating their own visions of the future and to justify investment in information and communications technologies. This is paradoxical given that Gibson's work paints the future world as a dark, amoral, despotic, violent place ruled by large, all-powerful corporations. The irony of this Utopian, technological reinterpretation is not lost on Gibson himself:

I was delighted when scientists and corporate technicians started to read me, but I soon realized that all the critical pessimistic left-wing stuff just goes over their heads. The social and political naiveté of modern corporate boffins is frightening, they read me and just take bits, all the cute technology, and miss about fifteen levels of irony (Gibson, 1989, cited in Hayward, 1993: 185).

As such, whilst Gibson might not provide a technical blueprint of the future, there is little doubt that his writings have provided aspirations and inspiration to a number of different groups, and has significantly shaped media and academic narratives concerning information and communication technologies (ICTs). And because of the way in which SF is read – between fantasy and realism – it offers ordinary readers a similar opportunity to explore future spatialities in a way that combines imagination and rationality.

Moreover these fictions are useful analytical tools as they hold a mirror to current postmodern spatialities and reveal future possibilities. They provide dystopian fables of what society may become if it follows certain paths and open up cognitive spaces to contemplate these futures. It would be easy to try to dismiss such writing as nothing more than fantastical imagination, if it were not for the fact that most cyberfiction writers seek to focus on the possible and probable rather than the fantastical – they tread a tightrope between scientific realism and the imaginative, taking current ideas and technology and projecting forward using the predictions of academics and scientists.

III Mapping urban futures

In the remainder of this article we explore the utility of cyberfiction as an analytical tool through an examination of the imaginative urban geographies of the new millennium. We have chosen to focus our analysis on urban geographies for two reasons. First, although as noted, cyberfiction contains many geographical narratives, it is primarily a fiction concerned with urban futures. Indeed, Bukatman (1993: 142) contends that cyberpunk provides a postmodern mapping of future urbanism; 'a mapping of compacted, decentered, highly complex urban spaces.' Burrows (1997: 38, 45) argues that such a mapping is particularly instructive as:

The themes and processes which a symptomatic reading of cyberpunk reveal are a good deal more insightful than those offered by what now passes for the theoretical and empirical mainstream . . . I think that one gets a clearer analytical understanding of contemporary urban processes from a reading of Gibson or Stephenson than one does from a reading of Sassen or Castells.

Cyberfiction thus allows us to examine the extent to which the spatial logic of modernism is transforming into a new sociospatial nexus, and to explore the spatialities of future urban geographies. Secondly, there is evidence to suggest that SF's visions

of future urbanism are providing an 'imaginal public sphere' for urban planners who wish to make real their promise: 'In February, 1990, at a public lecture series on art in Los Angeles, three out of five leading urban planners agreed that they hoped someday Los Angeles would look like the film *Blade Runner* . . . It has become a paradigm for the future of cities, for artists across the disciplines.' (Klein, 1991:147). SF is thus providing planners with a cognitive space for the contemplation of future cities, one whose dystopian undertones are stripped away, and which they seek to make real.

In reading our analysis, it is important to note that we are *not* advocating that the geographies we describe will come to pass as we enter the new millennium, inevitably following some form of technological determinism. Instead our analysis should be viewed as an attempt to explore their cognitive spaces in order to contemplate present and possible postmodern, urban futures; futures that are yet unwritten and which will be constructed through spatially situated, social and political-economic processes. In order to allow the data to 'speak for itself', so as to illustrate the visions of future geographies as expressed by the authors, the following account contains a number of passages from the stories.

1 Future urbanism

The imagined future of cyberfiction is a world reordered by libertarian capitalism and social Darwinism, reshaped at all spatial scales through the sociospatial processes of globalization and internationalization; a world dominated by a few large multinationals, where countries have fractured into weak nation-states; a world where the middle-class has been eliminated with the population neatly divided into haves and have-nots; a world of fractured and fragmented cities tied into a global order; a world where the wealthy live in private and defensible spaces (where public space is eliminated) and the poor are left in ungoverned, anarchic, lawless spaces; a world with a new sociospatial nexus but one that reflects the present.

The political-economy and social order that underlies this imagined nexus is extrapolated from observations of the sociospatial processes which drive the present condition of postmodernity. These processes include the globalization of trade and labour, deregulation, strategic take-overs and buyouts, backofficing and teleworking. Current analysis suggests that these processes are pushing us towards the imagined future just described. For example, some analysts contend that multinational companies are restructuring their employment structures and spatial distribution as they seek to exploit flexible modes of accumulation and gain competitive advantage (Castells, 1996). As a consequence they are increasingly dominating markets, influencing local, regional and national development within nation-states (Daniels, 1995), engendering the privatization of public space, and fostering the creation of a dual economy (Davis, 1990). Furthermore, some analysts contend that information and communication technologies, because they know no borders, are undermining the territoriality upon which nation-states are built (Thu Nguyen and Alexander, 1996). These processes, it is contended, are driving wide-scale restructuring at all spatial scales from the global to the household, and reshaping the form and spatiality of cities.

The imagined futures of cyberfiction represent possible futures if these processes

continue to operate. In the following analysis we detail the cityscapes of cyberfiction, outlining their form and structure, how these are reproduced and reappropriated, situating our discussion within a more detailed description of some of the processes outlined above.

2 City form and structure

As present-day analysts, such as Graham and Marvin (1996), note, restructuring of the economic landscape and the increasing centrality of ICTs to city functioning is leading to a change in urban landscapes as corporate trade-offs between urban fixity and electronic mobility are played out. Cities are becoming virtualized, composed of and controlled by distributed networks of computers. Furthermore, organizational restructuring is affecting patterns of investment and development between metropolitan areas. It is argued that ICTs are encouraging centralization to large urban areas with affordable, well developed computer and telecommunications infrastructure. Paradoxically, it is contended that ICTs are also fostering decentralization, as instantaneous, multimedia communication networks allow companies to locate in cheaper areas with a suitably skilled workforce, or even transfer routine clerical work to overseas backoffices to create a global, 24-hour office. At another spatial scale, employment restructuring, in part caused by ICTs, is leading to the polarization of districts within metropolitan areas with a strengthening of a dual economy based around the creation of 'information wealthy' and 'information deprived'. These changes undermine the modernist bases of city form and purpose. In the transition from agricultural to industrial societies, cities grew rapidly to overcome time with space. In contrast, the space-time compression that underpins the globalized and localized restructuring briefly described above, means that cities are now seeking to capitalize on the overcoming of space by time (Harvey, 1989).

Many cyberfiction writers examine these processes of urban-regional restructuring, extrapolating trends to provide visions of future urban form. For example, a number of writers explore the tensions developing between the decentralization and centralization of urban space. In Stephenson's novels, *Snow crash* and *The diamond age*, the processes of decentralization, fuelled by a collapse in place-based politics, win out to produce a sprawling, centreless urban landscape composed of small clones where 'old cities were doomed, except possibly as theme parks' (Stephenson, 1995: 71). However, in most other narratives, such as those by Gibson, urban space becomes a large, decentralized sprawl with pockets of highly centralized and dense city spaces: 'Home was BAMA, the Sprawl, the Boston-Atlanta Metropolitan Axis' (Gibson, 1984: 57). Places away from the centre have become financially unviable and form twenty-first-century ghost towns, 'fallen-in edge-cities, the kind of place that went down when the Euro-money imploded' (Gibson, 1992: 245), and decaying rust-belt areas.

In the cores, space is at a premium, and the cityscape is corporate, highly centralized and extremely dense both structurally and in terms of population. The value of space forces development both upwards and underground to produce a vertical spectrum of stylized, mirrored, postmodern architecture – a riot of glass and steel. Beshar (1994: 211, 213) thus describes Toyko:

Sure enough, immense mounds dotted the landscape as far as the eye could see. Gobi guessed these were underground cities. The freeway suddenly dipped. To Gobi's surprise, they were now traveling through the guts of one of these mound cities. The elevated maglev freeway had suddenly become a transparent artery. They flew through a tube at a height about 30 stories above base level. All along both sides of the tube were rows of internal high rises. These high rises were spread-eagled over a series of parks and urban work-play centers . . .

He caught his breath. They had finally arrived in downtown Neo-Toyko, the circuit-board heart of the rim. Gobi saw wave after wave of towers. Some of them were 500 stories tall, soaring to a point almost above the earth's atmosphere. He saw the famous Aeropolis sky-rise, much larger than life but no different than the postcard image that was famous all over the world. Like a skeletal Mt. Fuji constructed of living tubes, it was a man-made volcano that pulsed and breathed in an awesome symmetry of life and death. Half-a-million people lived on its top floors, and commuted from one vector to another.

Similarly, Sterling (1988: 215) writes of a futuristic Singapore:

It was like downtown Houston. But more like Houston than even Houston had ever had the nerve to become. It was an anthill, a brutal assault against any sane sense of scale. Nightmarishly vast spires whose bulging foundations covered whole city blocks. Their upper reaches were pocked like waffle irons with triangular bracing. Buttresses, glass-covered superhighways, soared half a mile above sea level.

Storey after storey rose silent and dreamlike, buildings so unspeakably huge that they lost all sense of weight; they hung above the earth like Euclidean thunderheads, their summits lost in sheets of steel-gray rain.

These buildings are more than mere glass and steel, however. They are virtualized through the incorporation of computer networks which render them 'smart'; they are 'buildings with advanced infrastructure, buildings with the late twenty-first century embedded in their diamond bones and fiber-optic ligaments' (Sterling, 1996: 139). As Fabi (1998: 187) thus details:

This is a 'smart building'. . . 'Totally state-of-the-art; we just built it last year. Carry those cards with you, and a central computer knows where you are at all times. It'll open doors for you, turn on lights, adjust the climate control, everything. Your guest cards are all preprogrammed to average settings, but you can adjust the settings for things like temperature, illumination level, even what kind of Muzak plays when you're on the elevator.'

In these narratives the centre is usually the home to 'the haves'; those with wealth and power. The edges of these concentrations and the sprawl are predominately home to the disenfranchised; those on the outside of the information economy (although part of the sprawl is also the defensive, suburban homes of the super-rich). This dichotomy between corporate centres of wealth and power and struggling hinterlands mirrors current regional developments which sees centres such as London, New York and Tokyo continue to grow in political and financial power, as companies decentralize lower-level services, typically those requiring less employee skill. This is accompanied by gentrification of city locales as those getting rich in the information economy move back into inner-city spaces.

Indeed, the latter point of the spatial division between haves and have-nots within cityscapes is one that is explored extensively in cyberfiction. This spatial division, is according to analysts such as Davis (1990) and Castells (1996), becoming increasingly prevalent in present-day western society. For example, in *City of quartz* (1990) Mike Davis⁵ describes the divided society and dual economy of Los Angeles where one side consists of a predominately white middle-class corporate sector working in mirrored offices and living in defensible spaces in suburbia protected by police and private security; and on the other side, an underclass of predominately black and Latino first and second-generation immigrants working in menial and casual jobs in the service and manufacturing sectors, whose adolescents and young adults roam in menacing

gangs. This spatial and racial division is heightened by widespread organizational restructuring and means that employment is either well paid, stable, rewarding and full time, or part time, casual, menial and poorly paid, with middle-class jobs and status declining (Castells, 1996): 'There's only two kinds of people. People can afford hotels like that, they're one kind. We're the other. Used to be, like, a middle class, people in between. But not anymore.' (Gibson, 1992: 123).

Consequently, in cyberfiction spatiality is becoming polarized, with wealth being concentrated into certain locations which maintain and increase their status through defensible means (see below). The built form of the urban landscape portrayed mirrors this dual economy, with cities clearly divided into rich and poor areas; the gleaming, mirrored landscapes of centralized corporate affluence, accompanied by gated suburban housing, and the abject poverty of have-nots, confined to slums and homelessness:

Orlando scrunched down in his seat so he could see the hammock city. He had long been fascinated by the multi-level shantytowns, sometimes called 'honeycombs' by their residents – or 'rats' nests' by the kind of people who lived in Crown Heights . . . Long ago, he had discovered, during the first great housing crisis at the beginning of the century, squatters had begun to build shantytowns beneath the elevated freeways, freeform agglomerations of cardboard crates, aluminum siding, and plastic sheets. As the ground beneath the concrete chutes filled up with an ever-thickening tide of the dispossessed, later arrivals began to move upward into the vaulting itself, bolting cargo nets, canvas tarpaulins, and military surplus parachutes onto the pillars and undersides of the freeway. Rope walkways soon linked the makeshift dwellings, and ladders linked the shantytown below with one growing above. Resident craftsmen and amateur engineers added intermediary levels, until a marrow of shabby multilevel housing ran beneath nearly every freeway and aqueduct (Williams, 1996: 510).

Later we return to these disenfranchised spaces to consider further how they are reappropriated. First, however, we discuss how within-city, hegemonic spatial geometries, the divisions between rich and poor, are regulated and sustained in cyberfiction by surveillance technologies and the creation of defensible spaces.

3 Modes of regulation

A swathe of recent writings by academics has noted an increased use in surveillance technologies, accompanying the privatization of public space and the creation of defensible spaces (e.g., Lyon, 1994; Graham *et al.*, 1996). Whilst noting that surveillance and monitoring are nothing new, they report that recent developments in computing and telecommunications qualitatively alter the nature of surveillance by routinizing, broadening and deepening it (Marx, 1988) through the increased transferability, replicability and availability of records. As a consequence they contend that it is increasingly difficult to take part in everyday life without leaving a digital trace: individuals and institutional records are digitized and stored in relational databases that are easy to cross-check; CCTV equipment (vision, sound, infrared) monitor public spaces; satellites monitor the earth from low orbits; computers monitor credit transactions and movements in cyberspace (Kitchin, 1998). This surveillance has been accompanied by the privatization of public space, probably best illustrated through the transfer of shopping from public streets to privately regulated malls, with the shops remaining on the public street increasingly subject to the gaze of corporate and state surveillance (see Shields, 1989). In addition, some city spaces are closing themselves off from the public sphere, retreating into gated communities policed by private security forces.

Surveillance technologies and the privatization and fortification of public spaces provide a means by which those with power can monitor and regulate those with little power. In cyberfiction, this becomes the means by which the spatial division of the dual economy is reproduced. Technological advances thus make the entire world a giant panopticon, so that behaviour both off- and online can be recorded, stored and cross-referenced. Here, traditional public space has all but vanished, constantly monitored and policed by state and private concerns to maintain hegemony. For example, Harry (1996: 83) details a geographic space where surveillance is total:

‘So there are cameras constantly watching you when you’re in public?’ she asked.

‘And infrared, thermal, low-light, microphones, ground-motion detectors, pressure sensors, feedback from things like light switches –’

Here, it is impossible to undertake any activity outside and inside the home without that activity being externally monitored by fixed surveillance systems. In Stephenson’s *Snow crash* (1992: 124) the surveillance is mobile and collected by people for profit:

Gargoyles represent the embarrassing side of the Central Intelligence Corporation. Instead of using laptops, they wear their computers on their bodies, broken up into separate modules that hang on the waist, on the back, on the headset. They serve as human surveillance devices, recording everything that happens around them.

All the data collected by gargoyles and others is stored in a massive central database, accessible to those online and who can pay. Each time a piece of data is used its collector receives a royalty payment. Here the maxim ‘information is capital’ is fully realized. This leads Sterling (1996: 92) to declare ‘a true Information Society is a society made of informers’. In the future, cyberfiction writers envisage a society where all-pervasive surveillance is an accepted mode of existence, operating regardless of context and pursuit. For example, workplaces will be saturated by surveillance technologies, tracking the productivity and work practices of employees:

The central computer notices just about everything. Keeps track of every key you hit on the keyboard, all day long, what time you hit it, down to the microsecond, whether it was the right key or the wrong key, how many mistakes you make and when you make them (Stephenson, 1992: 282).

As a consequence, identifying and tracking individuals will be part of everyday life and used to regulate movement within the city, particularly movement into and out of the defensive spaces of corporations and the communities of the super-rich. Indeed, in much of the fiction the surveillance is largely only restricted to the wealthy areas so that well defended and surveyed areas of security are islands of order in a sea of apparent chaos. In order to gain access to these ‘safe’ islands one needs certain privileges usually conveyed by some form of identification system, such as a DNA encoded passport (Gibson, 1996) or, in the case of Foy (1997: 212), a UCC card:

No UCC-card for these people, with the bar code to hold your bank and Visa account and office key code; no credit or reference for these men and women to bootstrap themselves into sudden productivity. The forms changed but the substance remained the same. Far from heralding a new world, the coming of the millennium had shipped large portions of the American population straight back to the 1800s.

Without a UCC card individuals are denied access to many city spaces – for example, a mall was constructed as a defensible space: ‘The mall was a wall-mall built in a new style, with three floors underground and five over, incorporating not only shops but clinics, and arboretum, a motel, a bus station; surrounded by razor wire, perimeter

lights and interlocking-arc security cameras' (Foy, 1997: 275).

This space echoes Davis' 'Panopticon Mall' (1990: 243), where the undesirables are disenfranchised, excluded by security arrangements.

4 Reappropriating the future city

In this final section we consider further the spaces outside the 'islands of security', the spaces occupied by the disenfranchised, through an analysis of the work of William Gibson. Gibson provides a rich detailing of life outside the centres of wealth, describing how city spaces are reappropriated and given new vibrant spatialities, underlain with danger due to their self-governed nature, but also displaying strong notions of community where the placelessness and inauthenticity of a globalized postmodern world (see Relph, 1976) are replaced by a renewed connection between place and identity. These spaces offer new public spaces, sites of resistance, and spaces of hope in which new urban communities can develop.

One of Gibson's favourite literary techniques is the collage or *bricolage*, and his cityscapes are presented as highly heterogeneous spaces – jumbled, growing in upon themselves, more like living things than machines. Gibson is fascinated by *gomi* (Japanese for junk) and creates spaces filled with and built out of rubbish, *bricolages* of the detritus of urban culture. Several of these junk-spaces, like Williams' honeycombs (see earlier), involve the reuse of materials discarded by the hegemonic culture. An important example from the short story 'Johnny Mnemonic' is the area colonized by a gang called the Lo Teks, who live up in the roof spaces just under the ragged geodesic domes that partially cover the Nighttown area of the Sprawl. The Lo Teks and other subcultural groups live in the 'useless' and abandoned spaces of the city, in the cracks in its fabric, where they create new spaces 'jury-rigged and jerry-built from scraps that even Nighttown didn't want' (1988: 31). Two other examples include the Bridge in *Virtual light* (1992) and the Walled City in *Idoru* (1996).

In *Virtual light* the (Golden Gate) Bridge can no longer carry vehicles because it has been damaged by an earthquake; it is left to decay until the city's homeless take it over and begin to squat there. Over time it becomes settled by a multicultural community, grown in upon itself by the constant accretion of new structures and the filling in of gaps:

The integrity of the span was rigorous as the modern program itself, yet around this had grown another reality, intent upon its own agenda. This had occurred piecemeal, to no set plan, employing every imaginable technique and material. The result was something amorphous, startlingly organic. At night, illuminated by recycled neon, by torchlight, it possessed a queer medieval energy. By day, seen from a distance, it reminded him of the ruin of England's Brighton Pier, as though viewed through some cracked kaleidoscope of vernacular style.

Its steel bones, its stranded tendons, were lost within an accretion of dreams: tattoo parlours, gaming arcades, dimly lit stalls stacked with decaying magazines, sellers of fireworks, of cut bait, betting shops, sushi bars, unlicensed pawnbrokers, herbalists, barbers, bars. Dreams of commerce, their locations generally corresponding with the decks that had once carried vehicular traffic; while above them, rising to the very peaks of the stable towers, lifted the intricately suspended barrio, with its unnumbered population and its zones of more private fantasy (pp. 58–59).

This unlikely sounding structure was actually inspired by a real space: Kowloon Walled City, or Hak Nam. Hak Nam was a unique part of pre-handover Hong Kong; unique because it still belonged to China due to an administrative oversight, though it was

effectively not administered by any state. Up to 33 000 people were packed into 2.7 hectares; the buildings growing in on each other, climbing upwards to accommodate growth. Gibson describes the Bridge as 'a thing of random human accretion, monstrous and superb' (p. 289). Although in *Idoru* the Walled City is actually a cyberspatial simulation of the original city, which has long been torn down, Gibson acknowledged that it provided the 'texture' for the online MUD. This is clear from the following description of Chia's first view of the Walled City:

And then the thing before her: building or biomass or cliff face looming there, in countless unplanned strata, nothing about it even or regular. Accreted patchwork of shallow random balconies, thousands of small windows throwing back blank silver rectangles of fog. Stretching either way to the periphery of vision, and on the high, uneven crest of that ragged facade, a black fur of twisted pipe, antennas sagging under vine growth of cable (pp. (181–82).

In interpreting Gibson's accreted junk structures, Giuliana Bruno's 1987 essay on *Blade Runner* offers some useful comparisons. She writes that the film, like Gibson's fictions, 'creates an aesthetic of decay' (1987: 185). In this decay strict divisions of time and space are also broken down. Arguing that *Blade Runner* is a metaphor for the postmodern condition, Bruno (1987: 185) asserts that 'postmodernism recycles; therefore it needs its waste'. The ruins that are central to cyberpunk are not simply areas of discarded waste, but zones of new possibilities. Gibson's cities need interstices, heterogeneous areas that are the result of constant recycling. Their ruination is part of a wider process of reconstruction; spaces are transformed as existing structures are broken down. *Gomi* becomes new forms and spaces 'jury-rigged and jerry-built from scraps'. The Bridge and the Walled City are, in this sense, signs of a more hopeful future. As such, Gibson's concern for detailing the full heterogeneity of these spaces does offer some respite from the bleakness of his vision of future cities.

IV Conclusions

In many ways it is futile to think about the future. There are far too many variables involved and it is almost impossible to make accurate predictions (Sawheeny, 1996: 291).

Despite Sawheeny's warning we believe that gazing into the future is a productive exercise. We agree, however, that using this gaze to make predictions is problematic. Gibson (1993: 32) has said that using the work of cyberpunk for prediction making is 'a very dangerous way to look at science fiction'. Despite his collaborations with architects, and his interest in urban space, his fictions are not plans or blueprints. He describes his original ideas for the San Francisco of *Virtual light* as 'some permutation of the city as it exists today, that might be remotely possible' (1993: 32). In our analysis of cyberfiction we have not treated the texts as predictors of future spatialities but rather as cognitive spaces that provide sites to contemplate possible futures given current trends. As we have argued, SF is concerned with re-presenting the present. The more dystopian aspects are provided as a warning not about how cities might be but how cities are. Gibson (1989) thus states: 'What's most important to me is that it's about the present. It's not really about an imagined future. It's a way of trying to come to terms with the awe and terror inspired in me by the world in which we live.'

This though to us denies the fact that whilst the texts do reflect the present, they also

reflect where this present is heading, both in terms of how they envisage the future but also as cognitive spaces that help to shape and direct how people conceive and make the future. Cyberfiction thus helps to create the imaginal sphere in which cities are being conceived and developed, and also details the coming spatial logic of post-modernity: a logic of social and political-economic forces working across a variety of spatial scales to create a heterotopic urban landscape. Mike Davis (1992: 3) thus states that Gibson's urban futures (and other works of cyberfiction) provides a salutary warning of the probable future for cities like Los Angeles: 'William Gibson . . . has provided stunning examples of how realist, "extrapolative" science fiction can operate as prefigurative social theory, as well as an anticipatory opposition politics to the cyber-facism lurking over the horizon.'

Andrew Ross (1991), on the other hand, sees it as a seductive and frightening fantasy of the inner city created by white male gentrifiers; a fiction that is patriarchal, narrow in conception, and which fails to acknowledge oppositional forces to global libertarian capitalism, namely, environmentalism, nationalism and other cultural forces and social/political movements (Ross, 1991; Clute and Nicholls, 1993; Roberts, 1993).

Despite these criticisms, to us cyberfiction is a useful resource to geographers because it details the destabilization of the modern period, maps out possible future spatialities of the postmodern condition, and provides cognitive spaces which are being used by individuals and institutions in conceiving and making future society. Our analysis has shown that there are many facets of contemporary society, such as globalization and the rise of the dual economy, that indicate that these futures, or derivatives of them, may come to pass. Consequently, it is our belief that cyberfiction, and an analysis of how it is being appropriated, provides important insights into the possible geographies of the new millennium and, as such, they provide a resource in need of further analysis by geographers.

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Notes

1. For example, Neal Stephenson's novel *Snow crash*, written in 1992, inspired the development of a virtual, visual interaction world, accessible across the Internet by the summer of 1995. *Alphaworld*, an online, visual virtual world where people can interact using avatars, is life-imitating art, in a very literal sense (see Dodge and Kitchin, 2000). Similarly, William Gibson's books inspired John Walker to launch the Autodesk (leading VR developers) 'Cyberpunk initiative' in 1988 (Chesher 1994). In a white paper entitled 'Through the looking glass: beyond user interfaces', he invoked Gibson and proposed a project to produce a 'doorway into cyberspace' within 16 months.

2. Richard Calder and Jeff Noon.

3. Pat Cadigan and Marge Piercy.

4. For a wider analysis of the geographies described within these novels, see Dodge and Kitchin (2000).

5. Davis's work is significant because Gibson uses his description of present-day LA to formulate his vision of twenty-first-century San Francisco in *Virtual light*.

References

- Armitt, L.** 1996: *Theorising the Fantastic*. London: Arnold.
- Brosseau, M.** 1994: Geography's literature. *Progress in Human Geography* 18, 333–53.
- 1995: The city in textual form: *Manhattan Transfer's*, New York. *Ecumene* 2, 89–114
- Bruno, G.** 1987: Ramble city: postmodernism and *Blade Runner*. In Kuhn, A., editor, *Alien zone: cultural theory and contemporary science fiction cinema*, London and New York: Verso, 183–95.
- Bukatman, S.** 1993: *Terminal identity: the virtual subject in postmodern science fiction*. London: Duke University Press.
- Burrows, R.** 1997: Virtual culture, urban social polarisation and social science fiction. In Loader, B., editor, *The governance of cyberspace*, London: Routledge, 38–45.
- Carter, P.** 1987: *The road to Botany Bay*. London: Faber.
- Castells, M.** 1996: *The rise of the network society*. Oxford: Blackwell.
- Chesher, M.** 1994: Colonizing virtual reality: construction of the discourse of virtual reality, 1984–1992. *Cultronix* 1(1) (<http://eserver.org/cultronix/chesher/>).
- Clute, J. and Nicholls, P.** 1993: *The encyclopedia of science fiction*. New York: St Martin's Press.
- Cresswell, T.** 1993: Mobility as resistance: a geographical reading of Kerouac's 'On the road'. *Transactions, Institute of British Geographers* NS 18, 249–62.
- Csicsery-Ronay Jr, I.** 1991: Editorial introduction: postmodernism's SF/SF's postmodernism. *Science Fiction Studies* 18, 305–308.
- Daniels, P.** 1995: Services in a shrinking world. *Geography* 80, 97–110.
- Daniels, S. and Rycroft, S.** 1993: Mapping the modern city: Alan Sillitoe's Nottingham novels. *Transactions, Institute of British Geographers* NS 18, 460–80.
- Darby, C.** 1948: The regional geography of Hardy's Wessex. *Geographical Review* 38, 426–43.
- Davis, L.** 1987: *Resisting novels: ideology and fiction*. New York and London: Methuen.
- Davis, M.** 1990: *City of quartz*. London: Verso.
- 1992: *Beyond Blade Runner: urban control, the ecology of fear*. New Jersey: Open Magazine Pamphlet Series, no. 23.
- Dey, I.** 1993: *Qualitative data analysis: a user friendly guide for social scientists*. London: Routledge.
- Dodge, M. and Kitchin, E.** 2000: *Mapping cyberspace*. London: Routledge.
- Fletcher, S.** 1996: *E-mail://a.love.story//*. London: Headline.
- Foster, L.** 1994: City primeval: high noon in Elmore Leonard's Detroit. In Preston, P. and Simpson-Housley, P., editors, *Writing the city*, London and New York: Routledge, 125–46.
- Gibson, W.** 1989: High tech high life. William Gibson and Timothy Leary in conversation. *Mondo* 2000, Fall, no. 7.
- 1993: Cyberpunk rides again? From Los Angeles to Hong Kong in search of urban futures (interview by Bob Catterall). *Regenerating Cities* 6, 29–33.
- Graham, S., Brooks, J. and Heery, D.** 1996: Towns on the television: closed circuit TV in British towns and cities. *Local Government Studies* 22, 1–27.
- Graham, S. and Marvin, S.** 1996: *Telecommunications and the city: electronic spaces, urban places*. London: Routledge.
- Gregory, D.** 1981: Human agency and human geography. *Transactions, Institute of British Geographers* NS 6, 1–18.
- Haraway, D.** 1991: *Simians, cyborgs and women*. London: Free Association Press.
- Harvey, D.** 1989: *The condition of postmodernity: an enquiry into the origins of cultural change*. Oxford: Blackwell.
- Hayward, P.** 1993: Situating cyberspace: the popularisation of virtual reality. In Hayward, P. and Wollen, T., editors, *Future visions: new technologies of the screen*, London: British Film Institute, 180–204.
- Hollinger, V.** 1991: Cybernetic deconstructions: cyberpunk and postmodernism. In McCaffery, L., editor, *Storming the reality studio: a casebook of cyberpunk and postmodern fiction*, London: Duke University Press, 203–18.
- Jameson, F.** 1991: *Postmodernism, or, the logic of late capitalism*. Durham, NC: Duke University Press.
- Jay, L.J.** 1975: The Black Country of Francis Brett Young. *Transactions, Institute of British Geographers* 66, 57–72.
- Kitchin, R.M.** 1998: *Cyberspace: the world in the wires*. Chichester: Wiley.
- Kitchin, R.M. and Tate, N.** 1999: *Conducting research in human geography*. Harlow: Longman.

- Klein, M.N.** 1991: Building *Blade Runner*. Social Text 28, 147–152.
- Kneale, J.** 1999: The virtual realities of technology and fiction: reading William Gibson's cyberspace. In Crang, M., Crang, P. and May, J., editors, *Virtual geographies*, London: Routledge, 205–21.
- Lyon, D.** 1994: *The electronic eye: the rise of the surveillance society*. Oxford: Polity Press.
- Malmgren, C.D.** 1991: *Worlds apart: narratology in science fiction*. Bloomington, IN: Indiana University Press.
- Marx, G.T.** 1988: *Undercover: police surveillance in America*. Berkeley, CA: University of California Press.
- McCaffery, L.** 1991: Introduction: in the desert of the real. In McCaffery, L., editor, *Storming the reality studio: a casebook of cyberpunk and postmodern fiction*. London: Duke University Press, 1–16.
- Mitchell, W.J.** 1995: *City of bits: space, place and the Infobahn*. Cambridge, MA: MIT Press.
- Moretti, F.** 1998: *Atlas of the European novel, 1800–1900*. London: Verso.
- NUA** 2000: http://www.nua.ie/surveys/how_many_online/
- Phillips, R.** 1997: *Mapping men and empire: a geography of adventure*. London and New York: Routledge.
- Pocock, D.** 1979: The novelist's image of the North. *Transactions, Institute of British Geographers* NS 4, 62–76.
- , editor, 1981: *Humanistic geography and literature: essays on the experience of place*. London: Croom Helm.
- Relph, E.** 1976: *Place and placelessness*. London: Pion.
- Roberts, R.** 1993: *A new species: gender and science in science fiction*. Urbana-Champaign, IL: University of Illinois Press.
- Ross, A.** 1991: *Strange weather: culture, science and technology in the age of limits*. London: Verso.
- Samuelson, D.N.** 1993: Modes of extrapolation: the formulas of hard SF. *Science Fiction Studies* 20, 191–232.
- Sawheeny, H.** 1996: Information superhighway: metaphors as midwives. *Media, Culture and Society* 18, 291–314.
- Sharp, J.** 1994: A topology of 'post' nationality: (re)mapping identity in *The Satanic verses*. *Ecumene* 1, 65–76.
- Shields, R.** 1989: Social spatialisation and the built mall: the West Edmonton Mall. *Society and Space* 7, 147–64.
- Stone, A.R.** 1991: Will the real body please stand up? Boundary stories about virtual cultures. In Benedikt, M., editor, *Cyberspace: first steps*, Cambridge, MA: MIT Press, 81–118.
- Suvin, D.** 1979: *Metamorphoses of science fiction: on the poetics and history of a literary genre*. New Haven, CT: Yale University Press.
- 1989: On Gibson and cyberpunk SF. *Foundation: The Review of Science Fiction* 46, 40–51.
- Thrift, N.** 1978: Landscape and literature. *Environment and Planning A* 10, 347–49.
- Thu Nguyen, D.** and **Alexander, J.** 1996: The coming of cyberspacetime and the end of polity. In Shields, R., editor, *Cultures of Internet: virtual spaces, real histories and living bodies*, London: Sage, 99–124.
- Tomas, D.** 1991: Old rituals for new space: rites de passage and William Gibson's cultural model of cyberspace. In Benedikt, M., editor, *Cyberspace: first steps*, Cambridge, MA: MIT Press, 31–48.
- Tuan, Y.** 1976: Literature, experience and environmental knowing. In Moore, G. and Golledge, R., editors, *Environmental knowing*, Stroudsburg, PA: Dowden, Hutchinson & Ross, 260–72.
- 1978: Literature and geography: implications for geographical research. In Ley, D. and Samuels, M., editors, *Humanistic geography: prospects and problems*, Chicago, IL: Maaroufa Press, 194–206.

Fiction read

- Anderson, K.J. and Beason, D.** 1996: *Virtual destruction*. New York: Ace Books.
- Bear, G.** 1985: *Blood music*. London: Vista.
- Besher, A.** 1994: *RIM*. London: Orbit.
— 1998: *MIR*. London: Orbit.
- Bethke, B.** 1995: *Headcrash*. London: Orbit.
- Cadigan, P.** 1998: *Tea from an empty cup*. London: HarperCollins.
- Calder, R.** 1998: *Cythera*. London: Orbit.
- Egan, G.** 1994: *Permutation city*. London: Millennium.
- Fabi, M.** 1998: *Wyrms*. New York: Batham Books.
- Foy, G.** 1996: *The shift*. New York: Batham Books.
— 1997: *Contraband*. New York: Batham Books.
- Gibson, W.** 1984: *Neuromancer*. London: HarperCollins.
— 1986: *Count zero*. London: HarperCollins.
— 1988: *Mona Lisa overdrive*. London: HarperCollins.
— 1992: *Virtual light*. London: Penguin.
— 1996: *Idoru*. London: Penguin.
- Harrison, H. and Minsky, M.** 1992: *The Turing option*. London: Roc.
- Harry, E.L.** 1996: *Society of the mind*. London: Coronet Books.
- Hendrix, H.V.** 1997: *Lightpaths*. New York: Ace Books.
- McLaren, J.** 1997: *Press send*. London: Simon & Schuster.
- Noon, J.** 1993: *Vurt*. London: Pan Books.
— 1995: *Pollen*. London: Ringpull.
- Piercy, M.** 1993: *He, she and it*. New York: Fawcett Crest.
- Platt, C.** 1991: *The silicon man*. San Francisco, CA: Wired Books.
- Rucker, R.** 1982: *Software*. New York: Avon Books.
— 1988: *Wetware*. New York: Avon Books.
— 1997: *Freeware*. New York: Avon Books.
- Stephenson, N.** 1992: *Snow crash*. New York: Batham Books.
— 1995: *The diamond age*. New York: Batham Books.
- Sterling, B.** 1988: *Islands in the net*. New York: Ace Books.
— 1994: *Heavy weather*. New York: Batham Books.
— 1996: *Holy fire*. New York: Batham Books.
- Williams, T.** 1996: *Otherland*. London: Orbit.

Short collections

- Gibson, W.** 1991: *Burning Chrome*. London: HarperCollins.
- Greenburg, M.H. and Segriff, L.,** editors, 1996: *Future net*. New York: DAW Books.
- Sterling, B.,** editor, 1985: *Mirrorshades: The cyberpunk anthology*. London: HarperCollins.
— 1992: *Globalhead*. London: Millennium.