Virtual Cities, Social Polarisation and the Crisis in Urban Public Space

Alessandro Aurigi and Stephen Graham

Centre for Urban Technology

Department of Town and Country Planning

University of Newcastle upon Tyne

NE1 7RU

E-mails alessandro.aurigi@ncl.ac.uk ; s.d.n.graham@ncl.ac.uk

WWW http://www.ncl.ac.uk:80/~ncut

1 Introduction

It has long been argued that the public realm of western cities is in crisis, caught between privatising and commodifying tendencies and the rising fear of crime and the 'other' in the post modern city (see, for example, Sennett, 1994; Sorkin, 1992, Davis, 1991; D. Mitchell, 1995; Boyer, 1994). This crisis is closely bound up with the growing social polarisation which is being etched into the landscapes of advanced industrial cities, with their ever-more segmented and separated social zones and rising internal economic inequalities. In its newest guise, such polarisation is also clearly reflected in highly unequal access to telephones, computers and advanced telecommunications infrastructures and services within cities.

This paper aims to explore some of the linkages between the crisis in urban public space within western cities, social polarisation in access to computers and telematics, and an emerging range of new, Internet-based, local initiatives known as 'virtual cities'. These provide varieties of 'electronic spaces' accessed through computing equipment, and have been developed variously to market cities as nodes of global investment, to widen local participation in telematics, and to engineer the emergence of new 'electronic' public spaces, at the local level, to complement or replace the undermined physical public spaces of cities.

The paper has four parts. First, it explores the crisis in the urban public realm and links this to wider trends in urban economic and geographical restructuring, cultural change, and the infusion of cities with widening arrays of electronic media supporting mass and personal communications (TV, cable, telephones, radio, computer networks etc.). Second, the paper outlines how the economic and welfare restructuring, that has surrounded the crisis in urban public space, has been associated with extremely uneven patterns of social access to communications technologies within cities. In section three, we document how many cities across the advanced industrial world are now using Internet and Web-based 'virtual cities' as policy tools through which, at least in theory, are being developed to offer new 'electronic public spaces' and widening social access to telematics, as a way of addressing these interrelated problems. Finally, the paper finishes by assessing what can genuinely be achieved at the urban level in terms of overcoming stark social divides in access to cyberspace and constructing genuinely public electronic spaces via virtual cities.

2 The Crisis in the Urban Public Realm

Throughout history, cities have been regarded as the fulcrum of human communication, the place of possibilities and opportunity, either economic or political (Graham and Marvin, 1996). Public space, designed deliberately through streets, plazas and squares to support human interaction and political debate, and free from control of firms or the state, was one of crucial features of the renaissance and modern city. Public, civic spaces and streets marked the passage from the defensive and repressive posture of the feudal society, based on castles rather than real cities, to the squares and the streets of post-Renaissance towns and cities (Boyer, 1994). As Craig Calhoun argues, "one of the most important social characteristics of cities is the provision of public spaces in which relative strangers can interact and observe each other, debate and learn politically, and grow psychologically from diverse contacts" (Calhoun 1986; 341). Boddy (1992; 123) suggests that "streets are as old as civilisation, and more than any human artifact, have come to symbolise public life, with all its human contact, conflict and tolerance" (quoted in Belt, 1996).

But how "public" is public space in contemporary western cities? Is this heritage of public spaces dissolving? Many authors have recently highlighted how the crisis of the common areas of our cities is assuming frightening proportions (see, for example, Boyer, 1994; Sorkin, 1992; Mazza, 1988). Some now even doubt whether public space still exists in western cities, as city centres become packaged and commodified for consumption, as enclosed malls start to dominate suburbs, and as middle classes retreat to cocooned houses and cars, linked via new communications infrastructures.   "Have we reached, then, the 'end of public space'?" asks Don Mitchell, "have we created a society that expects and desires only private interactions, private communications, and private politics, that reserves public spaces solely for commodified recreation and spectacle?" (D. Mitchell, 1995). The contemporary crisis in urban public space draws together issues to do with socialisation potential of our cities and the roles of new communications technologies. Two factors, in particular, are central to such debates: the rising sense of fear, mistrust, and fortification, within cities, and the growing commodification and packaging of urban spaces into mall-like consumption zones.

Cities of fear

In 1990, Mike Davis wrote in his well known book *City of Quartz*: "Welcome to post-liberal Los Angeles", wrote Davis, "where the defense of luxury lifestyles is translated into a proliferation of

new repressions in space and movement, undergirded by the ubiquitous 'armed response'. This obsession with physical security systems, and, collaterally, with the architectural policing of social boundaries, has become a zeitgeist of urban restructuring, a master narrative in the emerging built environment of the 1990's" (Davis, 1990; 223). Los Angeles is, according to many authors, a paradigmatic example of a large, contemporary post modern metropolis (Soja, 1989). This City has become, thanks to the writings of Davis and others, the icon of the fragmented, anti-social western metropolis, the stereotype of the city of fear, in which "most of the bungalows in the inner ring now tend to resemble cages in a zoo. As in George Romero movie, working-class families must now lock themselves in every night from the zombified city outside" (Davis, 1992; 7).

Even if a single American metropolis cannot be simplistically taken as a representative example for many different contexts and towns, as recently argued by Nigel Thrift (1996), there is no doubt that a general trend towards defensiveness and segregation in western cities exists. In relatively small European cities like Newcastle, where the differences among "rich" and "poor" areas are increasing, the feeling of uneasiness in public space, and diminishing sense of security and cohesion that accompany social polarisation, lead to large parts of the City to be covered by public CCTV security systems (Graham and Marvin, 1996; Graham et al, 1996). The territory of the City tends to be organised through zones more and more disconnected from each other. The new developments tend to be designed as "closed systems", such as the Newcastle Business Park, a large complex of corporate office users banks of the river Tyne, that is designed to be completely sealed off from the deprived areas nearby. Rather, it protects itself from its surrounds with high fences and video surveillance. Another example is the central "Eldon Square" shopping centre, a mall that has replaced a remarkable portion of the Newcastle city centre. It has its private police, a strict surveillance regime, and closes at 5.30 p.m. Some have observed that such processes of securitisation and privatisation of the urban realm are generated by "corporate and state planners, [who] have created environments that are based on desires for security rather than interaction, for entertainment rather than (perhaps divisive) politics" (D.Mitchell 1995; 119). This need for security, and the separation that derives from it, affect not only the characteristics of central business areas and shopping malls, but also increase hostility and suspect among different residential areas, in which local communities tend to close themselves ever-more to incursions from socially, culturally, economically different groups of people:

> "In areas of our cities where poverty and social diversity are concentrated, the signs of stress are pervasive, in the routinisation of violence, alienation and anger, of crime and stigma. This reinforces exclusionary tendencies, encouraging a defensive sense among the better-off, labelling these stressed neighbourhoods as 'outside', not part of the 'mainstream', and 'other'" (Healey et al., 1995; 7)

The Shopping Mall Paradigm

Whilst the existence of shopping malls and, in general, privately owned and managed "public" spaces, can be seen as a consequence of the now pervasive urban zeitgeist of insecurity, the gradual replacement of (relatively) open squares with heavily-controlled places also damages the potential of the city to retain its potential for communication and exchange. Rather, towns end up being broken into fragments that tend to be increasingly indifferent to each other. "Obsessed with the point of production and the point of sale", writes Sorkin "the new city is little more than a swarm of urban bits jettisoning a physical view of the whole, sacrificing the idea of the city as the site of community and human connection" (Sorkin, 1992; 3).

Shopping malls are considered by many as extreme examples of the erosion of genuine public space in the contemporary city (Sorkin, 1992; Reeve, 1996). Although they can look like colourful streets hosting clusters of shops, it has been noticed that they are "characterised by a tendency to confine public social life to 'certain locations, certain hours and certain categories of 'acceptable' activities'" (Bianchini, 1988), which are strictly controlled to maximise consumption and profitability. From a certain viewpoint, these places are so effective in fulfilling their functions, that they have become a paradigm for these new types of urban sites that could be classified as "private public space" (Bianchini, 1988): trouble-free, clean, ideal places that have the appearance of being 'public' but which are developed and controlled purely to sell or advertise commercial goods.

But the need for promotion and advertising now transcends the traditional realm of private companies and affects the city as a whole. Increasingly, cities are projecting themselves as 'commercial products' to attract investment and tourism within highly competitive place 'markets' (Kearns and Philo, 1993). The traditional forms of urban governance are weakened by this end-of-century change of approach towards government in general. Neo-liberal tendencies, by promoting the concept of urban entrepreneurialism, and public-private partnerships, have encouraged strategies of privatised city centre management aimed at developing whole city centres as commodified consumer spaces (Reeve, 1996). This puts city councils in a situation in which they ".are no longer the key locus for integration of urban relationships, but merely one of many actors competing for access to resources and control of agendas" (Davoudi, 1995). Cities cannot afford, then, not to promote themselves. And, as efficiency, safety and livability are

among the variables that can attract either investors and tourists, in other words money and jobs, the logic of city-marketing makes towns borrow some of the characteristics of the shopping malls for the development of public spaces. This is encouraged also by the active presence of private firms operating in partnership with the public administrations, and by their specific business activities.

Most western cities can now offer examples of new apparently 'public' urban districts which are, in fact, privately managed, geared towards affluent consumers, and marketed as trouble-free, lifestyle 'packages' sanitised and segregated from the troubled, polarising urban realm that often surrounds them. Battery Park City in New York, for instance, is, according to Christine Boyer, an example of the "City of Illusion", that is "calling something public space when indeed is not: focusing on the provision of luxury spaces within the centre of the city and ignoring most of the interstitial places" (Boyer, 1993). Boyer acknowledges that the creation of this kind of sites is driven by marketing needs rather than social purposes, and extends the paradigm of the shopping mall to those spaces that would be still expected to be public, by calling them "promotional spaces":

> "The city these spaces represents is filled with a magical and exciting allure, landscapes of pleasure intentionally separated from the city's more prosaic or threatening mean streets. Controlled by the rules and values of the market system, these places offer a diet of synthetic charm that undermines critical evaluation. ... As old-style 'public space' declines and popular control of the streets becomes a thing of the past, a new-style 'publicity' or 'promotional space' evolves on which the reputation of the sponsoring corporation is visualized and its production of 'civic values' promoted" (Boyer, 1993).

Mike Davis goes even further when he speaks of the 'urban simulators', through the example of CityWalk, an idealised reproduction of Hollywood Boulevard and Rodeo Drive at Universal Studios Florida (Davis, 1992). Although it can be seen just as a theme park feature, its relationship with the real attitude in designing and developing cities is clearly highlighted by its own shapers: "As its MCA proprietors have taken pains to emphasize, CityWalk is 'not a mall' but a 'revolution in urban design . a new kind of neighbourhood'". Davis notes, though, that "indeed, some critics wonder if it isn't the moral equivalent of the neutron bomb: the city emptied of all lived human experience. With its fake fossil candy wrappers and other deceits, CityWalk sneeringly mocks us as it erases any trace of our real joy, pain or labor" (Davis, 1992).

Contemporary western cities face the dilemma of space that is, after all, their main resource. The developments driven by the ethos of city marketing and privatisation tend inevitably to transform places into commodities. And this conflict of interests between the city as a place, and the city as

a commodity, does not simply generate external "theme parks" that try to pretend to be towns. It has indeed some major effects over the bits of the town that used to belong to the community, and that increasingly are used to produce money and to promote the image of the city to external consumers. This phenomenon does not involve just big American towns such as Los Angeles and New York, or extreme examples of themed places such as Las Vegas. Elizabeth Wilson takes a well known European example, noting that, in Paris, "the Parc de la Villette is designed for tourists rather than for the hoarse-voiced, red-handed working men and women who in any case no longer work or live there. Thus it is in the great cities of the world at least, but also certainly in any smaller cities that can capitalize on an historic past, or an industrial peculiarity - not only is the tourist becoming perhaps the most important kind of inhabitant, but we all become tourists in our own cities." (Wilson, 1995).

Many citizens, we must remember, welcome the theming of the urban public space, and its increased control through more and more sophisticated technological means such as CCTV systems. In the context of the urban crisis, the very appeal of this type of places is achieved "by stripping troubled urbanity of its sting, of the presence of the poor, of crime, of dirt, of work" (Sorkin, 1992). The very fact that such spaces are not truly 'public' becomes an attraction to many consumers, because of the dangers now implied by the term. Themed places ".provide safe, secure environments where people can interact. It looks very much like public life, but in fact really isn't, because the environments are owned and controlled and heavily regulated by, generally, very large global corporations" (Dewey, 1994; quoted in Channel 4, 1994). Defensiveness and safety that are indeed biased and strongly exclusionary, as Wilson notes, "economic and social inequalities remain as gross as ever, yet the global shopping mall renders them curiously invisible. Those without the passport of money are simply in absence . Invisibility is a crucial feature of modern inequality" (Wilson, 1995). Many of the contemporary public-private environments tend to grant participation and visibility to those categories of people who already were in a position of advantage, whilst removing everything - and everybody - who does not "comply" with a certain minimum standard of wealth, behaviour, appearance.

3 Cyberspace Divides and Urban Social Geographies

But how does cyberspace and new telecommunications networks fit into these broader urban trends toward urban social polarisation and the crisis and privatisation in urban public space ? Surprisingly, the links between 'cyberspace, the Internet, and the 'Information Superhighway,' and the changing social geographies of cities, remain very poorly explored. In fact, many debates

about globalisation, electronic democracy, and the shift towards telematics-based social networks, often actually imply some degree of *uniformity* in social access to IT, relying rather on hyperbole and utopianism. Calabrese and Borchert (1996; 251) suggest that "debates about electronic democracy generally presuppose the existence and/or the possibility of citizens giving life to their views through exchanges in new forms of public space." Debates about the broader, related shift towards 'time-space compression', meanwhile, tends to be "a concept without much social content" (Massey, 1993; 59).

It is increasingly obvious, however, that social inequalities in access to electronic network technologies are profound, pervasive and perhaps even growing, and are clearly woven into the fabric of contemporary cities (Massey, 1993; 60). Pervasive social inequalities characterise access to, and use of, telecommunications and telematics infrastructures in cities (Nowotny, 1982; Calhoun, 1986, Murdock and Golding, 1989, Robins and Hepworth, 1988). Such inequalities seem to challenge any notion that the growth of 'cyberspace' is currently anything but the domain of the well-off and privileged. The improvement of Internet surveys gives us an accurate reflection of social unevenness in access to the Internet and World Wide Web. In 1995, for instance, Browning (1996; 33) found that the global population of the Internet amounted to 25 million users linked into 9,472,000 hosts. But those users tended overwhelmingly to be "exactly the sort of people that companies want to talk to: 30-ish, well-educated and often in exactly the sorts of high paying jobs that keep a steady flow of spendable cash sloshing into their bank accounts" (Browning, 1996; 33). Cyberspace, in short, looked "remarkably white, middle class and well educated" : only a third of users were women ; over 2/3rds had at least a university degree ; and the average incomes, in both the USA and the UK, were well above average ($50-$60, 000 in the US). The British 'population' of the Internet, moreover, could be compared the UK population as whole, to reveal is stark biases towards white, middle class, well-educated, male users (see Figures 1a and b).

Such trends are not at all surprising when they are placed against the back cloth of urban economic restructuring and the emergence of new, intensified patterns of urban poverty and social polarisation. Across the cities of the developed world, Enzo Mingione (1995; 196) recently noted a "growing conflict between new urban poverty and the system of citizenship and social inclusion," as dualised labour markets have combined with welfare restructuring, to undermine the fragile webs of more inclusionary and cohesive urban development built up during the post war boom and the elaboration of welfare states. In the US, for example, the top 1 % of all earners

captured 70% of all earning growth between 1985 and 1995 (The Guardian, 10/2/96). At the same time, real incomes dropped for the poorest communities reliant on poor quality, part-time service jobs. To Craig Calhoun (1986), such broader social trends, and the growing mediation (for some) of urban social life by telecommunications, means that large cities, based previously largely on face-to-face exchange in public spaces, are dissolving and fragmenting into webs of indirect, specialised relationships. "Telematically linked communities", he writes "could fragment our larger society, enabling each of us to pursue isolation from everything different, unfamiliar, or threatening, and removing the occasions for contact across lines of class, race and culture" (Calhoun 1986; 342).

These inequalities in access to telecommunications networks are important because they tend to reinforce the existing advantages of social elites, who have the best access to both telecommunications and transport networks, who are able to use them to reinforce their social privileges and, in many cases, their domination over those denied access to telecommunications. As Eric Swyngedouw argues, "the increased liberation and freedom from place as a result of new mobility modes for some may lead to the disempowerment and relative exclusion of others. This in its turn, further accentuates economic and social inequalities" (Swyngedouw, 1993; 322). In other words, "one person's (or group's) time-space compression may depend on another person's (or group's) consistent inability to [electronically or physically] access distant places" (Adam, 1995; 268). Lash and Urry capture the parallels between the social and class makeup of cities and access to telecommunications networks, when they argue that:

> "access to information and communication networks [...] is a crucial determinant of class position. The 'wild zones' of very sparse lines, flows and networks tend to be where the underclasses, or at least the bottom third, of the 'two-thirds societies' are found [...]. Similarly the unusually densely networked centres of the global cities tend to be where the top fractions, in the corporation headquarters, business and finance and legal services, of today's new informational bourgeoisie are primarily located" (Lash and Urry, 1994;319).

But these inequalities and differences are also complex, and are not entirely the result of the unevenness of global economic networks, social polarisation and uneven wealth. Simple access to networks does not imply that use develops, that this use has any meaning, or that it necessarily brings power and advantage to users. Heavy users may simply be undertaking routinised telework, over long distances, without being in a position of control in relation to it (Massey, 1993). And different types of network use, from passive consumption of corporatised entertainment, to interactive communications within discourses, will embody different degrees of empowerment or disempowerment in each case.

It is important, then, to disaggregate the social make up of cities, so that we can trace the positions of both dominant, elite groups, and the broader classes of mass consumers, and poorer employed and unemployed groups, within the shift towards tele-based exchange. Such trends are not about uneven access to some single, integrated 'cyberspace' ; rather, they are about the uneven development of a range of different telematics architectures, offering different degrees of power, control and what Paul Adam terms 'personal extensability' (Adam, 1995) to users.

Three broad groups can be identified here. First, elite groups seem likely to be the "information users" (Dordick, et al 1988), experiencing the full benefits of global, interactive telematics systems like the Internet (and its broadband descendants). Second, there are the wider groups of less affluent and powerful urban consumers, who seem more likely to be, as Dordick et al (1988) put it, "the information used" - experiencing hierarchical systems geared towards narrow, passive consumption. Finally, of course, many marginalised groups living in poverty and structural unemployment seem likely to be excluded altogether from electronic networks.

<p align="center">Disembedding Transnational Elites</p>

There is substantial evidence that a new 'transnational corporate class' is emerging which is the primary agent of operating the global economy, and which relies on intense mobility and access to interactive global telematics networks like the Internet on a continuous basis to 'command space' (Sklair, 1991; 62-71). Friedmann (1995) argues that the emergence of such groups in western cities needs to be seen as an integral element within a worldwide shift towards a the emergence of global spaces of capital accumulation, dominated by Transnational Corporations (TNCs), and their associated social elites, which now link together a global network of privileged 'world cities' into a single, integrated economic network. This transnational elite group consists of "those who are both doing the moving and the communicating and who are in some way in a position of control in relation to it [...] These are the groups who are really, in a sense, in charge of time-space compression, who can effectively use it and turn it to their advantage " (Massey, 1993; 61). In effect, telematics networks allow such groups to extend their 'personal extensability', through electronic means, by being electronically present in other, distant places to undertake transactions, maintain social relations and access information (Adams 1995; Janelle, 1973). Elite executives, to some extent, can now "live where they choose and still remain plugged into the economic mainstream" (Leinberger 1994; 51).

Elite, transnational groups seem likely to experience interactive, empowering models of electronic democracy, as the new class strives to be "internally egalitarian and communitarian, and externally effective in exercising political and economic power" (Calabrese and Borchert, 1996; 250). In what will be the closest contemporary approximation to Habermas' notion of the bourgeois public sphere, Calabrese and Borchert, (1996) believe that "the cosmopolitanism of the new class will be enhanced by its activity on the superhighway. The high spatial mobility of its members will be mirrored by their high network mobility and activity in the formation and maintenance of political alliances and economic relations on a highly privatised, translocal and increasingly transnational basis" (Calabrese and Borchert, 1996; 250). Increasingly, such groups seem likely to benefit from the development of 'personal information networks' through which tailored services are developed geared intimately to the intense communications, service and mobility needs of affluent professionals (Noam, 1992; 408).

These developments in electronic space match the selective colonisation of exclusive urban neighbourhoods as the homes for these elite groups. The exclusive areas of cities that are the home for these elite groups are increasingly linked together by social and technical networks, whilst being secured from the rest of the cities they are placed in. Thus we need to consider the ways in which urban trends and technological trends help reinforce the disembedding of elite groups. To Calabrese and Borchert (1996; 260), "the new structural transformation taking place is a matter of society's political and intellectual elite striving to secure its own means of democratic communication". Thus access to telecommunications networks, fast transport networks, and cocooned, affluent, urban neighbourhoods, becomes combined. The result, especially in US cities, seems to approximate more and more to the dystopic urban predictions of science fiction. "In this retreat of the affluent into cocooned and fearful isolation - an isolation which, moreover, feels to them entirely justified - we are veering dangerously close to the nightmare of the third millennium visions of recent ultaviolent, ultra-trashy cinematic science fiction" (Kingwell, 1996; 125). As Lasch, argues, these trends need to be seen against the context of the crisis in the urban public realm discussed above; they have major implications because they represent the disembedding of elite groups, not just from particular urban spaces, but also from systems of public service provision and public space:

> "at an alarming rate the privileged classes - by an expansive definition, the top 20 per cent - have made themselves independent not only of crumbling industrial cities but of public services in general. They send their children to private schools, insure themselves against medical emergencies by enrolling in company-supported health plans, and hire private security guards to protect themselves against mounting violence. It is not just that they see no point in paying for public services they can

no longer use; many of them have ceased to think of themselves as Americans in any important sense, implicated in America's destiny for better or worse. Their ties to an international culture of work and leisure - business, entertainment, information, and 'information retrieval' - make many members of the elite deeply indifferent to the prospect of national decline" (Lasch, 1994; 47).

Passive Consumer Markets

Second, there are the lower strata of less affluent and mobile wage earners, who seem likely to experience different technological topologies. The types of networks experienced by these groups, when they do attain access, seem likely to be rather different to those of the highly mobile, transnational elites. In fact, access for these groups to anarchic, non hierarchical, and interactive networks such as the Internet,   is likely to be outweighed by the growth of consumption-driven, home telematics systems,   which embody "high degrees of hierarchical control", interactivity largely limited to 'press now to purchase' buttons, and "high bandwidth downstream flows and low bandwidth upstream flows" (Calabrese and Borchert, 1996). This 'consumer model' of the information superhighway   will have only limited capability for interactivity supporting the development of horizontal discourses:

> "wage earners, the precariously employed and the unemployed will interact infrequently on the horizontal dimension, except primarily in commercial modes which are institutionally and hierarchically structured, and controlled for commercial purposes, such as games and shopping, and also do more routine forms of telework. The low spatial mobility of lower strata will be mirrored by low network mobility and limited perceived prospects for using the available network resources for creative expression or upward mobility, and by limited felt need for horizontal and upstream communication flows beyond those which are structured for commercial purposes of for the accessing of social services where they are available" (Calabrese and Borchert, 1996, 253)

It is for the spoils of these consumption-driven markets that the major media conglomerates are presently undertaking mergers, alliances and experiments. The current frenzy of global alliances and mergers between TV, Internet, cable, telecoms, film, publishing, advertising, and newspapers industries must be seen in this context, as sectors jostle to take commanding positions within a global Information Infrastructure, geared to exploiting and commodifying information, media and cultural industries, and offering home-based consumer services (Schiller, 1995; Hamelink, 1995). The commercialisation of the Internet, the development of electronic transaction systems, and the emergence of commercial, off-the-shelf Internet packages, geared to consumption, shopping and entertainment, are all part of its shift toward a 'consumer' model information

highway driven by 'pay per' electronic consumption (Baran, 1996). "While much of the technology may exist to fulfil the wildest dreams of Bill Gates", suggest Baran (1996; 59), "the realities of profit margins and oligopolistic global media markets will prevent many of them being fulfilled" for the mass consumer markets.

Off-Line Spaces: Space-Bound, Excluded Groups

Finally, of course, there will also be large sections of cities where poverty and unemployment mean that access to *any* electronic networks, from the phone upwards, will be financially problematic. In the context where certain neighbourhoods in Western cities have been shown to have only 30% phone penetration (Graham and Marvin, 1996), the inclusionary rhetoric of the information superhighway seems somewhat hollow for the most disadvantaged areas of cities. In fact, "in the electronic ghettoes", writes Nigel Thrift (1995; 31), "the space of flows comes to a full stop. Time-space compression means time to spare and the space to go nowhere at all". As Massey puts it, these areas and groups are simply on the *receiving end* of time space compression (Massey, 1993; 62). Peter Golding traces the stark social inequalities in access to new telematics and media equipment and services:

> "Entrance to the new media playground is relatively cheap for the well-to-do, a small adjustment in existing spending patterns is simply accommodated. For the poor the price is a sharp calculation of opportunity cost, access to communication goods jostling uncomfortably with the mundane arithmetic of food, housing, clothing and fuel" (Golding, 1990; 90)

Here, any degree of access to electronic networks is likely to be problematic for reasons of lower skills, lower incomes and lower exposure. "Differentials in access to skills, equipment and software necessary to gain entry onto the electronic highway threaten to create a large (predominantly minority) underclass disenfranchised from the benefits of cyberspace. Modern economies are increasingly divided between those with access to cyberspace and those who neither understand nor trust it" (Warf, 1996; 8). Efforts to get lower income groups on to the interactive, and discourse-driven, Internet will continually have to address difficult issues of competing priorities, training, English literacy, technological intimidation, the rapid obsolescence of technologies, and the costs of continually upgrading software (Sparrow and Vedantham, 1996). Moreover, the relevance of Internet access can often be questioned for those facing the most severe social crises. "Just giving someone time at a terminal with Internet capabilities - or,

by extension, at a kiosk in a public place - will not benefit anyone who feels confronted with a seemingly insurmountable problem, or who has no idea to begin" (Rockoff 1996; 59). Jones argues that "connection to the Internet does not inherently make a community, nor does it lead to any necessary exchanges of information , meaning and sense making at all" (Jones 1995; 12).

4 The Promise of the Virtual : Virtual Cities as Instruments
of Urban Revitalisation ?

As the notion of an urban public space, supporting a face-to-face, collective discourse within cities has gradually been undermined, and cities have instead been filed with "private public spaces," geared more and more towards managed consumption and spectacle, many commentators have urged us to look to 'cyberspace' as the new public realm (Schuler, 1996; Rheingold, 1994). The erosion of the public realm in cities, by implication, need not concern us : such realms merely need now to migrate toward the brave new world of electronic mediation (see Graham and Marvin, 196; Chapter 5). Benedict, for one, hopes for salvation from the city, for personal transcendence "from all the inefficiencies, pollution (chemical and informational), and corruptions attendant to the process of moving information attached to things - from paper to brains - across, over and under the vast and bumpy surface of the earth rather than letting it fly free in the soft hail of electrons that is cyberspace" (Benedict, 1991; 3). Such assertions are closely related to those discussed above which imply some degree of uniformity in social access to telecommunications in cities

Much of the current hype and hyperbole surrounding the Internet and 'Information Superhighway' rests on utopian assertions that such networks will emerge to be equitable, democratic and dominated by a culture of public space, enrolling multiple identities into new types of collective discourse and 'electronic democracy' (Bellamy et al, 1995). To some commentators, 'virtual communities' geared towards both specific Internet groups or place-based communities, represent solutions to the search from people alienated by the increasingly repressive, commodified and instrumental character of contemporary urban life. Such 'imagined communities' (Anderson, 1983) are seen to be safe, inclusionary and space-transcending - perfect

solutions to the atomised, fragmented world of the contemporary city. Howard Rheingold, a keen advocate of virtual communities, suspects that "one of the explanations for the [virtual community] phenomenon is the hunger for community that grows in the breasts of people around the world as more and more informal public spaces disappear from our real lives" (Rheingold, 1994; 6). The Internet is the key technological infrastructure here, lauded as it is "as a model for a truly anarchic society where information is freely exchanged, control and regulation are impossible to exercise and where there is no hierarchy" (Bell, 1994). Theodore Roszak (1994;185) notes its "spontaneously democratic and libertarian spirit" and argues that "the coffee houses of eighteenth-century London, the cafes of nineteenth-century Paris were rather like this: a gathering place for every taste and topic".

In the context where many urban areas are experiencing growing violence, distrust, fear, urban decay, unemployment, alienation and a reduction in civic associations, Doug Schuler believes that "new computer-networking technology currently has many attributes that could undergrid communications and technology that is truly democratic" (1996; ix). As large cities become more fragmented physically, socially, and culturally, computer communications are seen in this view to be a potentially integrative medium, tying the disparate fragments together into new threads of public discourse, in ways that few other media can manage. "Given that the architecture and geography of large cities and suburbs has dissolved older ties of community", suggest Geoff Mulgan, "electronic networks may indeed become tools of conviviality within cities as well" (Mulgan 1991;69). Heralding early urban network initiatives in the United States like the Cleveland Freenet, Santa Monica Public Electronic Network and Seattle Community Network, Schuler agues that local initiatives can help establish a new vision of community based on decentralised, interactive, one-to-one, one-to-many media networks, which are intrinsically more equitable and participatory than previous paper and mass broadcasting-based media. Run "by the community for the community", such local IT networks will, he argues, be part of "an overall democratic renaissance and civic revitalisation" (Schuler, 1995; x). The promise of new cyber-based communities, offering new interactive public arenas, is perhaps especially strong for the most marginalised groups, who have been most hit by economic restructuring, the growing urban privatism, and the growing predominance of individualistic ways of social organising in cities. To Cristina Odone, for example:

> "the disenfranchised are still seeking an alternative public arena that will afford them an opportunity to participate in that circulation of ideas that constitute society. Enter the Internet: a technological patchwork quilt that will provide the arena for public dialogues and gather together some of the most disparate social elements, generating solidarity amongst distinct and sometimes conflicting elements. the Net has already managed to promise a reordered world where the individual can sample a

community life that has long been eroded by the rush for individual gains, the rending of the fabric of family life, the polarisation of an economic system that makes for haves and have notes. The net has been cast over that collective space once filled by the family hearth, the church yard, the village marketplace" (Odone,1995 ;10, quoted in Belt, 1996).

The Rise of the Virtual City

Although the Internet was not the birthplace of the experiments of 'public' urban cyberspace (see Graham and Marvin, 1996), this electronic environment and, above all, its multimedia subsystem, the World Wide Web, now dominates such experiments. In attempts to address the context of the urban crisis, and the pervasive growth of the Internet, city authorities across the world have recently constructed hundreds of experimental 'virtual cities', based on the World Wide Web. This is due to the extreme user-friendliness of the Web interface, on one hand, and to the ability of the Web itself to allow access to a site from practically everywhere. So, while many electronic projects are shifting onto the Internet and the Web - the majority of the Free-Nets in the US have already provided themselves with Web sites - many new virtual cities are being developed on the Web. Over 2,000 virtual cities and urban web pages are now collected together on the City.Net network (http://www.city.net/), ranging from comprehensive, integrating spaces drawing together all the web activities in a city to single promotional web pages.

The Attraction of the Virtual

The global construction of 'virtual cities' needs to be seen in historical context. When faced with new 'urban crises', architects and urbanists have long sought to leave behind the imperfections of physicality behind, to look for perfect or quasi-perfect utopian "environments". The history of architecture and urbanism is full of examples of 'virtual cities' and 'virtual buildings' represented through paintings and sculptures, or simply on drafts and designs that never become real. Marcos Novak gives just some of the possible examples when he says that:

> "Piranesi's series of etchings entitled Carceri, or Prisons, marks the beginning of an architectural discourse of the purposefully unbuildable. Against the increasing constriction of architectural practice, Piranesi drew an imagined world of complex, evocative architecture. (.) Ledoux, Lequeu, Boullèe, each contributed to this struggle: as architectural practice was made more and more prosaic by the encroachment of utility, they responded by inventing a bolder and bolder imaginary counterpart" (Novak, 1991; 246 - original emphasis)

Such visionary architecture has often directly influenced the actual production and conception of the built environment and urban culture, as an avant-garde and a cultural sign of the times. But, with the emergence of virtual cities, the expression "virtual" is becoming loaded with a new set

of meanings that transcend the simple visualisation of architectural proposals. Through computer-based virtual reality, and the application of telematics, it is actually possible to do something more than just displaying objects and designs: it is possible to interact and establish two-way communication with both the items, and the people, who share a certain electronic environment, constructed 'within' software applications. In other words, these virtual worlds work as simulations and idealised facsimiles for the 'real" world and the "real" city. They add crucial functionality to the non-built space that was supposed to be exclusive to the built one, including many-to-many communication, information exchange, and transactions.

Such realisations can lead to the notion that cyberspace can look like the 'place' where it will be possible to build a new, ideal city, which modernism failed to produce within real built environments. Architects, urban designers and planners are, as a result, looking at high technology as the instrument to overcome the problems of communication and fragmentation - both social and physical - that affect contemporary cities. It seems that cyberspace may underpin new types of both economic and social development and cultural revitalisation within cities. It becomes possible, in short, to imagine a specifically "urban cyberspace."

Evaluating the Potential of Virtual Cities: Towards a Typology

As perhaps the principal area through which urban policy makers are trying to use telematics to respond to their economic, social and cultural transformations, web cities clearly deserve close scrutiny. For example, do such virtual cities genuinely seek to soften the social inequalities in access to telecommunications, to address the erosion of physical public space, and to provide new electronic sites for inclusionary discourse and participatory democracy? Do they represent efforts to widen the application of discourse-driven, interactive telematics, rather than commodified, one-way 'consumer information highways', as a way of connecting the fragmented social and cultural groups that make up cities ? Or, conversely, are such initiatives merely new attempts at urban marketing projected into cyberspace? Do they simply pander to the needs of the disembedding transnational elites that dominate use the Internet, by projecting idealised urban imagery in efforts to tempt affluent consumers, highly mobile travellers and business conferences to their patches of physical space?

Research just commencing at the Centre for Urban Technology, with the aim of building up a typology of Web digital cities in the EU, shows that two main types of web city are emerging. First, non-grounded web cities (see Figure 2) use the familiar interface of a "city" as a metaphor to group together wide ranges of Internet services located across the world. Second, "grounded"

virtual cities are actually developed by local agencies to feed back positively, and relate coherently, to the development of specific cities. Such virtual cities can be configured either as glossy advertising and promotional spaces, with no useful information for residents, or as civic services providing public electronic spaces supporting political and social discourses about the city itself.

And a whole range of virtual towns with different features and vocations seems to be available to the observer. Often, the urban privatism so common in the built environment of cities is simply translated into the virtual realm. So, for instance, even if the name "Virtual Birmingham - Heart of England" seems to suggest the presence of a site hosting a wide range of services for the local communities of Birmingham, it turns out to be a series of private pages (see Figure 3) whose goal is: ".to create an international electronic platform from which the West Midlands can promote its goods and services to interested parties" (from "Why Virtual Birmingham?", http://www.netlink.co.uk/users/landmark/vb/whoweare.html). Basically, it is being developed into a sort of a "grounded" electronic mall, with little useful information and a clear commercial purpose.

Early research also seems to suggest that most of the civic Web sites, that are being shaped by public administrations, are configured as little more than urban databases (see Figure 4), collating information for residents, and non-residents, about political processes and decisions in town management, as well as transport information, leisure opportunities, cultural events, accommodation and restaurants for tourists. How deep, comprehensive and up-to-date the information is can vary dramatically from site to site, but a common characteristic to many virtual towns seems to be a relative uni-directionality and the lack of opportunity for genuine interaction and discourse. Accessibility to the site tends to be wide (and is, in fact, global via the Internet), but is mainly configured for passive use. The technological paradigm that could be associated with these type of Web cities tends to be of the "database" or "broadcasting" variety ; the ability to e-mail the mysterious "webmaster" is often the only opportunity for individuals to make their positions known. Here, web cities can definitely be considered to be 'public' services, but it does not look very much like "public space".

<u>Digital City Marketing</u>

The absence of citizens and public life in many of these sites has a major drawback: seen on the Web, most 'cities' resort to simulation, idealisation, and even parody, as each attempts to electronically construct the virtual version of the perfect post modern city. Exciting, aesthetic,

urban design ; diverse cultural spaces, nightlife zones and restaurant areas ; leafy business parks and office zones; and world class communications infrastructures are the almost universal claims. The private, commodified, urban marketing ethos leads to widespread sanitisation : crime reports are never among the topics covered, and information and debate about other typical urban problems such as pollution, racial and social tensions, and levels of poverty are usually ignored.

Moreover, in some cities coherence is lost as a range of competing 'virtual towns' develop to compete to represent the same physical place. In Bristol, for example, together with the site managed by the council, five alternative and competing digital sites are being developed: Bristol OnLine, Bristol Cyber City, Digital Bristol, Bristol.Net, and Bristol Index, in a direct reflection of the fragmented nature of British urban governance. They are all private, and they all claim to be of help to the local community, as stated by Bristol Cyber City: "Our system analysts identified a need for services which are designed to fulfil the needs of local communities . The Cyber City is therefore intended to make a valuable contribution to the life of the physical city" (Introduction to CyberCities, Bristol Cyber City, http://www.flevel.co.uk/serv/BCC-Info.html), or by Digital Bristol: "This is an online source of information about Bristol for people in Bristol" (Welcome to Digital Bristol, Digital Bristol, http://digital-bristol.avonibp.co.uk). At the same time, all of them show their commercial vocation with explicit words as ".a focus for commercial initiative and expansion in a competitive world" (Bristol Cyber City), ".Bristol's shop window to the world" (Bristol.Net) (see Figure 5), and by providing Web spaces for businesses and firms. The best someone living in Bristol can get from these sites, are some links to the available Web pages of local organisation, and some one-way information about services in the town. The small council-managed site looks even worse, offering basically no on-line services and focusing on a topic such as "Bristol - the Right Location for your Company" (Bristol City Council Home Page, http://www.open.gov.uk/bristol/brishome.htm) that is enough to show the vocation of the site. The result of all of this is that, ironically enough, the "real" city of Bristol has currently six digital counterparts, and no real digital public space for debates among the citizens, and to let the citizens communicate with the public administration.

The Virtual City as Electronic Public Space: Amsterdam and Bologna

But more ambitious virtual cities, which at least claim to be more socially inclusive and discourse driven, are also developing. Two of the best examples in Europe currently are De Digitale Stad (The Digital City) in Amsterdam and the Bologna Iperbole initiative.

De Digitale Stad (The Digital City) in Amsterdam was inaugurated in January 1994, shortly before the local elections. It has always been a private site, but, at the beginning of its development, was subsidised by the municipality of Amsterdam and the Ministries of Economic Affairs and Home Affairs. DDS was not born for the World Wide Web, and in its first eight months of life it was very much like a typical "Free-Net" site, offering a text-based interface. Since 1994, however, it has developed into a very complex, Web-based site (see Figure 6), with an appealing graphic interface that exploits very well the spatial metaphor of the city, standing as an example and a pilot development for an increasing number of Dutch digital cities.

DDS is actually organised as a 'town' (see Figure 7). It has thematic squares (see Figure 8), presenting home pages of up to eight relevant information providers, that can be either businesses or non-profit organisations. Each 'square' is surrounded by residential 'buildings' (see Figure 9), providing 'homes' in which the digital city's 'residents' can express themselves by publishing their own information free of charge. Each square also has a 'virtual cafe' - an area for debate, links to materials published on the Internet.

A MUD-like, text-based virtual environment called "The Metro" has also developed, which ".has evolved into a genuine community in which some of its residents are even virtually married to each other" (http://www.dds.nl/dds/info/english/engelsfolder.html). Speaking about DDS in an interview that is also published on the digital city itself, Marleen Stikker, the "virtual mayor", states "all those ideas that you heard so often from the US about the new information society, tele-democracy, electronic citizenship, suddenly became a reality on DDS" (see http://www.dds.nl/dds/info/english/marleen.html).

But, beyond these enthusiastic claims, does DDS really operate as a virtual public space for Amsterdam ? Two problems, in fact, place great limits on the degree to which DDS can genuinely claim to be 'public'. First, despite the existence of public terminals and some use by marginal groups, the system is dominated by the young. white male, well-educated groups that dominate the Internet as a whole (Brants et al, 1996). Of the city's 35,000 'residents', for example, 58% are under 30, almost 75% have higher education, and 85% are male (Brants et al, 1996). Whilst the approach of DDS is "bottom-up. In principle everybody is able and welcome to raise an issue, participate in a debate, chat openly or put information on the network" (Brants et al, 1996; 241) such freedoms inevitably accrue to the privileged, already-powerful minority rather than the city as a whole in any truly 'public sense'. And as DDS has started to entice more and more commercially-driven content, to address its funding shortages, such inequalities seem unlikely to reduce.

Second, the nature of DDS, and its close links to the Internet, means that it is questionable how much its demographics, debates and discourses, genuinely represent the citizens of Amsterdam. Although non-Dutch speaking visitors can have their problems in using DDS, nothing prevents an American, English or Chinese user to sign up as a resident of the digital city and participate in its life. Half the users are, in fact, visiting guests. The fact that Amsterdam's public administration is present, but just as one of the many information providers, can weaken the relationship between the real and the virtual town. Actually, DDS presents itself with wide, globally-oriented aims as "to play its part in the development of the public domain in the electronic society", while specifying that "The city metaphor is abstract and not bound to a place". As Brant, Hiuzenga and van Meerten note: "The discussion platforms on computer technology, art and culture, the relation between information technology and democracy, and on the level of democracy within Digital City itself, are better visited than those on specific, local political issues (half the users do not live in Amsterdam), which feeds the suspicion that the Digital City is more a place for a (new) elite and a number of 'techno-freaks' than for 'ordinary' citizens" (Brants et al, 1996; 242). This deterioration of the link with the real town, can be accelerated by the need for DDS to market itself to possible international advertisers. For this reason, DDS looks at foreign visitors as a valuable resource: "The Digital City concentrated on a national audience during the initial period of its existence . But now it is regularly consulted by visitors from abroad. An English language menu structure, together with a 'street guide' covering the city and some of the services that are of international interest, will help increase the number of visits from abroad." (The Digital City Foundation).

The Iperbole initiative in Bologna is in many ways complementary to the Amsterdam case. While the latter is privately managed (although with declared no-profit purposes), Bologna Home Page is owned and run by the local council, with the technical support of CINECA, a public educational institution. As DDS, Bologna Home Page was born in 1994, and immediately conceived for the Web environment. The way the site presents itself (see Figures 10 and 11) is not as appealing as in DDS, and the aspect of the home page does not suggests any interaction possibilities other than the "banal" consultation of a civic database.

Actually, the "Iperbole" site is less interactive than its Dutch counterpart, offering no possibilities for individual home pages and no real-time discussion environments. Nevertheless, the citizens who connect to the service can access a wide range of discussion groups through the "Usenet" interface, most of them - currently 33 - are about local topics and reserved to local people (see Figure 12). A whole range of pages of urban services and organisations such as unions, Job

centres, Health service, Police, voluntary groups, are hosted free of charge, together with the "central" pages relative to the several council services and offices.

The Bologna site is a more controlled "public" space than the DDS. Iperbole tends to be more like an interactive public service than a "virtual community" in which things are mainly shaped by the users. Although it is declared that the approach is "bottom-up", the absence of features such as the possibility for the individuals to publish their ideas or to discuss in real time chats, currently limits the potential of the site as a digital community. The evident aim of the project, more than establishing a new public realm (as it happens in DDS), is boosting the "development of an increasing wealth of reciprocal knowledge and democratic two-way collaboration between the local authorities and the public". In order to allow this, several council departments can be contacted via electronic mail, the newsgroups are set up to allow people to speak about local problems, events and developments, although citizens can lobby to obtain the activation of new discussion groups.

Local users are supposed to gradually dominate use of Iperbole to a greater extent than in Amsterdam . The policy choices related to the development of the Web city itself are a clear demonstration of this will. In recent times, the council have started connecting citizens to a full-Internet service for free, while on the other hand, the only firms and businesses that are allowed to be present on the site by renting pages at low rates, are the small local businesses of the area surrounding Bologna. But there have been severe problems. Tambini (1996) notes that computer-mediated referenda and voting have been shelved because of technical, political and social problems. The number of subscribers remains tiny compared to the whole population. Discussion groups have tended to focus on leisure rather than political issues and the impact of governance processes has, so far, been negligible.

4 Conclusions

Can locally-developed virtual cities offer hope in supporting new arenas for public discourse in cities, which are more inclusionary, equitable, and interactive than the 'consumer-model' information superhighways, dominated by global, commodifying corporations, which seem likely to dominate cyberspace in the future ? Can such initiatives help overcome the economic, geographical, social and cultural fragmentation so characteristic of contemporary cities, by tying together the urban fragments together ? Does the 'urban planning' of electronic spaces offer a new arena within which progressive, imaginative urban futures might be shaped ? Is the city "to be replaced with a *virtual* urbanity, a city of the mind, enabled by telematics?" providing

"channels through which knowledge and information can be democratised, dispersed around the diversity of relational webs in urban regions" (Healey et al, 1995).

Whilst it is still far too early to fully assess the potential of virtual cities, and other local telematics projects, in democratising and widening access to telematics, a few preliminary conclusions can be made from our discussion. First, we would argue that virtual cities, as presently, developing, offer no easy solutions to the problems of the crises of either public space or social polarisation in cities. It is clear that local, virtual cities, as reflections of the broader Internet, tend themselves to be dominated by a narrow, technological elite of well-educated, young, male groups from 'majority' cultures. Most offer no potential for genuine interaction, being merely spaces for one-way applications: postmodern urban promotion, local government advertising, and the collective advertising of private, local firms, tempted by the rich, cash-rich market of Internet users. Many are little more than commodified consumer spaces that use local labels and city metaphors to distinguish themselves from the chaotic mass of Internet sites.

Even when stimulating two-way public discourses within cities is the central objective, as in Amsterdam and Bologna, the social bias of virtual city users and 'residents' remains strong. Significantly opening up such initiatives to the extent where we can consider them to offer genuinely 'public' spaces will be a costly, long term and complex exercise, of doubtful practicality in an era of urban financial crisis. Developing and installing genuine electronic discourses within urban, public, electronic spaces, has so far proved to be extremely difficult. For example, the founder of Big Sky Telegraph, a rural telematics initiative in the USA, suggests that "most community networks [still] consist of individuals doing things related to personal information gathering, not purposeful group activities. Community networks are only beginning to emerge" (Odasz, quoted in Friedland, 1996; 196).

When interactive community networks do successfully emerge, extreme care needs to be taken to ensure that they are not seen as replacements for direct social interactions. Virtual interactions in virtual cities need to be shaped to feed back positively on to the development of face-to-face, direct interactions in real cities. There is a clear tension here between the need for specialised debates and the need for an overarching collective, public sphere. There needs, on the one hand, to be some sense of collective identity, experience, solidarity and destiny between the participants of interactions in virtual cities, grounded in real issues in real cities, in order for them to positively affect cities. McBeath and Webb (1995; 7-8) argue that the experience of virtual

communities is an illusion brought by the use of computer technology, offering a "a fantasy through which we can live in apparent proximity to others, talk to them and express feelings". But they "ignore a dimension of community which we consider central to the concept, namely, its affective aspect, the dimension of the fellow-feeling bound to 'being together'. This is the emotional/feeling strand of solidarity". Without some grounding in a common, affective, collective experience, the danger is that electronic associations within virtual cities, and the evolution of 'virtual communities', will, by definition, emerge as 'pseudo communities' (Beniger, 1987; 354), traditional communities transformed into "impersonal association" . To Vicki Belt:

> "It is the unthreatening and safe nature of the notion of 'community' which explains the popular appeal of the 'virtual community' dream. This is a vision that expresses a hope for a transparent and open society which is cleansed of all disorder and disturbance, in Sennett's terms, a purified community. The desire for virtual community and virtual cities in the lace of face to face interactions expressed by some is the dream of a society that is afraid of engagement. A vibrant democracy thrives on a clash of opinions, and this is something that we should not retreat from" (Belt, 1996; 21).

On the other hand, though, virtual city-based interactions may become too specialised and too segmented. Virtual communities tend to be so specialised, there are risks that "ethnic groups [will] collect in their own electronic communities, libertarians speak only to libertarians ... inevitably, the effect will be to shatter local geographic communities and ultimately weaken the national community" (Brown, 1994).

But perhaps we should not expect virtual cities, or other new community IT initiatives, to emerge as replacement versions of what Friedland (1996) terms the single, "deliberative model of public sphere". Rather, we should have a more pragmatic focus, recognising that such a model is, perhaps, anachronistic, and that new tele-mediated exchanges in cities will inevitably complement many other media and information channels in complex ways. To Friedland (1996), the focus should be on:

> "the distinct enabling relationship that new technologies have to the building of social capital on the one hand, and new citizen capacities on the other [...] The new social capital relationships that emerge from new community networks ground deliberation in the concerted practices of citizens, a much richer set of relations than could be developed through polling and the mass media alone [..]. Access to network tools, which is rapidly widening, is beginning to create public spaces in which new forms of information and relationship-building can circulate. This allows for both the practical strengthening of grassroots democratic organising, and its growth and extension to new citizenship groups" (Friedland 1996; 207)

Our second conclusion is that it is tempting to see the growth of virtual cities, and the general proliferation of locally-planned electronic spaces, to be a new type of urban planning, reminiscent of the first trends toward integrated land use in western cities in the nineteenth century. In the chaotic world of the Internet, telematics policies grounded in particular towns and cities are having important roles in shaping and structuring the articulation between place-based and electronically-mediated realms. They help, quite literally, to 'ground' the globally-integrated world of electronic spaces, making them more meaningful in real places, real communities, real lives. In the longer run, the hope must be that urban cyberspace planning may help to construct meaningful 'enclosures' within what Castells calls the global "space of flows" - the pan-global electronic spaces increasingly dominated by massive media corporations and their commodified, capitalised outputs and applications (Castells, 1989). Within this context, local policies may emerge to have crucial roles in sustaining democratic, inclusionary, discourse-driven electronic infrastructures, when it seems likely that only transnational elites may fully enjoy such infrastructures otherwise. Social need, the particularities of place, freedom of expression, and local cultural diversity, tend to be squeezed out of the corporate, commodifying logic of current globalisation trends - "media conglomerates will not fill the vital educational, civic, and cultural needs" of real places and real cities (Grossman, 1995). Urban cyberspace planning, if properly configured, may offer some hope here.

References

Adam, P. (1995), "A reconsideration of personal boundaries in space-time", *Annals of the Association of American Geographers*, 85(2), 267-285.

Anderson, B. (1983), *Imagined Communities*, London: Verso.

Baran, N. (1996), "Privatisation of telecommunications", *Monthly Review,* 48(3), 59-69.

Batty M. (1995) "The computable city", Mimeo.

Bell, E. (1994), Nation shall network unto nation', *The Observer,* June 5, 5.

Beniger, J. (1987), "Personalization of mass media and the growth of pseudo community", *Communications Research*, 14(3), 352-371.

Belt, V. (1996), "Technological change and urban change: New communications technologies and the social construction of community". Mimeo.

Benedict M. (1991) "Introduction". In Benedict M. (Ed) *Cyberspace : First Steps,* , Cambridge, Ma: The MIT Press

Bianchini F. (1988) The Crisis of Urban Public Social Life in Britain: Origins of the Problem and Possible Responses",*Planning Practice and Research,* 5(3), 4-9.

Bellamy, C, Horrocks, I., and Webb, J. (1995), "Exchanging information with the public: From one stop shops to community information systems", *Local Government Studies,* 21(1), 11-30.

Boddy, T. (1992), "Underground and overhead: the construction of the analogous city". Sorkin M. (1992) *Variations On a Theme Park: the New American City and the End of Public Space,* New York; Hill and Wong. 123-153.

Boyer, C. (1994), *The City of Collective Memory,* Cambridge, Ma: MIT.

Boyer, C. (1993), 'The city of illusion: New York's public places', in P. Knox (Ed), *The Restless Urban Landscape,* Englewood Cliffs: Prentice Hall. 111-126.

Brants K., Huizenga M., van Meerten R. (1996) "The new canals of Amsterdam: an exercise in local electronic democracy", *Media, Culture & Society*, Vol.18

Brown, L. (1994), 'the Seven Deadly Sins Of The Information Age', *Intermedia*, June/July, 22(3).

Browning, J. (1996), "Who's what on the web", *Wired*, August, 33-35.

Calhoun, C. (1986), "Computer Technology, Large-Scale Social Integration And The Local Community", *Urban Affairs Quarterly*, 22(2), 329-349.

Calabrese, A. and Borchert, M. (1996), "Prospects for electronic democracy in the United States: Rethinking communication and social policy", *Media, Culture and Society,* 18, 249-268.

Castells, M. (1989), *The Informational City: Information Technology, Economic Restructuring and the Urban-Regional Process,* Oxford: Blackwell .

Channel 4 (1994), *Once Upon a Time in Cyberville*, London (Programme transcript).

Comune di Bologna, (1996), Iperbole, Ampliamenti del progetto CityCard: la società civile in rete a Bologna.

Davis M. (1990) *City of Quartz,* London :Vintage

Davis M. (1992) *Beyond Blade Runner: Urban Control - The Ecology of Fear*, Open Magazine Pamphlet Series, Westfield

Davoudi S. (1995) Dilemmas of Urban Governance. Healey, P., Cameron, S., Davoudi, S., Graham, S. and Madani-Pour, A. (1995), (eds), *Managing Cities: the New Urban Context,* Wiley: London.

Dear M. (1993) "In the city, time becomes visible" Land-use planning and the emergent postmodern urbanism". Mimeo.

Dordick , H., Bradley, H., And Narris, B. (1988), *The Emerging Network Marketplace,* Norwood Nj: Ablex.

Friedmann, J. (1995), "Where we stand: A decade of world city research", In P. Knox and P. Taylor (Eds), *World Cities in a World System,* Cambridge: Cambridge, 21-47.

Friedland, L. (1996), ""Electronic democracy and the new citizenship", *Media, Culture and Society*, 18, 185-212.

Golding, P. (1990), "Political Communication And Citizenship: The Media And Democracy In An Inegalitarian Social Order". In M. Ferguson (Ed), *Public Communication: The New Imperatives*, London: Sage, 84-100.

Graham S. and Marvin S. (1996) *Telecommunications and the City: Electronic Spaces, Urban Places,* London Routledge

Grossman, L. (1995), "Maintaining diversity in the electronic republic", *Technology Review,* November/December, 23-26.

Hamelink, C. (1995), *World Communications: Disempowerment and Self-Empowerment,* London Zed Books.

Healey, P., Cameron, S., Davoudi, S., Graham, S. and Madani-Pour, A. (1995), (eds), *Managing Cities: the New Urban Context,* Wiley: London.

Janelle, D. (1973), "Measuring human extensability in a shrinking world", The *Journal of Geography*, 72(5), 8-15.

Jones, S. (1995), "Understanding community in the information age". In S. Jones (ed), *Cybersociety: Computer Mediated Communication and Community*, London: Sage, 10-35.

Kingwell, M . (1996), *Dreams of Millennium: Reports From a Culture on the Brink,* Toronto: Viking.

Lasch, C. (1994), "The revolt of the elites: have they cancelled their allegiance to America ?", *Harper's*, Nov, 39-49.

Healey, P., Cameron, S., Davoudi, S., Graham, S. and Madani-Pour, A. (1995), (eds), *Managing Cities: the New Urban Context*, Wiley: London.

Leinberger, C. (1994), 'Flexecutives: Redefining the America dream', *Urban land,* August, 51-54.

McBeath, G. and Webb, S. (1995), "Cities, subjectivity and cyberspace". Mimeo.

Massey, D. (1993), "Power-geometry and a progressive sense of place" in J. Bird, B. Curtis, T. Putnam, G. Robertson, and L. Tickner (1993), *Mapping The Futures: Local Cultures, Global Change*, London: Routledge. 59-69.

Mazza, L. (1988), "Introduction". In *World Cities And The Future Of The Metropolis.* L. Mazza (Ed), Milan: Electra, 13-19.

Mingione, E. (1995) Social and employment change in urban areas". In Healey, P., Cameron, S., Davoudi, S., Graham, S. and Madani-Pour, A. (1995), (eds), *Managing Cities: the New Urban Context,* Wiley: London.195-208.

Mitchell, D. (1995), 'The end of public space ? People's park, definitions of the public and democracy", *Annals of the Association of American Geographers*, 85(1), 108-133.

Mitchell, W. (1995), *City of Bits: Place, Space and the Infobahn,* Cambridge, MA: MIT Press.

Mulgan, G. (1991), *Communication and Control: Networks and the New Economies of Communication*, Polity Press, Oxford.

Murdock, G. And Golding, P. (1989), 'information Poverty And Political Inequality: Citizenship In An Age Of Privatized Communication', *Journal Of Communication,* 39(3): 180-195.

Noam, E. (1992), *Telecommunications in Europe*, Oxford University Press: Oxford.

Nowotny, H. (1982), "The Information Society: Its Impact On The Home, Local Community And Marginal Groups". In H. Bjorn Andersen, M. Earl, O. Holst And E. Mumford (Eds), *Information Society, For Richer, For Poorer ,* North Holland, Amsterdam.

Novak M. (1991) Liquid Architectures in Cyberspace, from *Cyberspace: First steps,* edited by M.Benedict, The MIT Press

Odone, C. (1995), "A patchwork of catholic tastes", *Guardian*, 18th Sept, 10.

Ogden M.R. (1994) Politics in a parallel universe. Is there a future for cyberdemocracy?, from *Futures* n.26

Kearns, G. and Kearns, C. (Eds), (1993), *Selling Places: The City as Cultural capital, Past and Present,* Oxford: Pergamon.

Reeve, A. (1996), "The private realm of the managed town centre", *Urban Design International,* 1(1), 61-80.

Rheingold H. (1994) *The Virtual Community,* Secker & Warburg

Robins, K. and Hepworth, M. (1988), "Electronic spaces: new technologies and the future of cities", *Futures*, April, 155-176.

Rockoff, M (1996), "Settlement houses and the urban information infrastructure", Journal of Urban Technology, 3(1), 45-66.;

Roszak, T. (1994), *The Cult of Information,* Berkeley: University of California Press.

Schiller, H. (1996), *Information Inequality: The Deepening Social Crisis in America*, New York: Routledge.

Schuler D. (1995) "Public Space in Cyberspace", *Internet World,* December

Schuler, D. (1996), *New Community Networks: Wired For Change,* New York: Addison Wesley.

Sennett, R. (1994), *Flesh and Stone: The Body and the City in Western Civilisation,* London: Faber.

Sklair, L. (1991), *Sociology Of The Global System,* London: Harvester Wheatsheaf.

Soja, E. (1989), *Postmodern Geographies*, Verso: London.

Sorkin M. (1992) *Variations On a Theme Park: the New American City and the End of Public Space,* New York; Hill and Wong.

Sparrow, J. and Vedantham, A. (1996), "Inner-city networking: models and opportunities", *Journal of Urban Technology*, 3(1), 19-28.

Swyngedouw, E. (1993), 'Communication, mobility and the struggle for power over space', in Giannopoulos, G. And Gillespie, A. (1993) *Transport And Communications In The New Europe*, Belhaven: London., 305-325.

Tambini, D. (1996) , "Computer-mediated democracy in Bologna: Sheer Hyperbole ?", Mimeo.

Thrift, N. (1995), "a hyperactive world". In Johnston, R., Taylor, P., and Watts, M. (Eds), *Geographies of Global Change,* Oxford: Blackwell. 18-35.

Thrift N. (1996) Paper presented at the 1996 "City States" conference, London

Warf, B. (1996), "Segueways into cyberspace: The geopolitics of the Internet". Mimeo.

Wilson, E. (1995), "The rhetoric of urban space", *New Left Review,* 209, 146-160.

Biographies

Alessandro Aurigi

Alessandro Aurigi is a researcher in the Centre for Urban Technology (CUT) in Newcastle University's Department of Town and Country Planning. He is currently undertaking a Ph.D. Graduated in Architecture in Italy, he has worked for five years as a freelance professional in the field of application of IT and multimedia to the study and management of the built environment,

collaborating at the same time with the Multimedia Lab. of the Department of Urbanism in the University of Florence. His research in CUT focuses on the social shaping and design of urban telematics, specifically on Internet-based applications to regenerate the public sphere of contemporary European cities.

Stephen Graham

Stephen Graham is a lecturer in the Centre for Urban Technology (CUT) in Newcastle University's Department of Town and Country Planning. A qualified town planner, he has worked in Sheffield City Council on both physical development planning and the development of urban telematics policies. His research at CUT centres on the role of telematics in the social and economic restructuring of cities, technology and the future of cities, and the possibilities telematics offer for innovations in urban policy and planning. He has published widely on these areas. His recent books include *Telecommunications and the City: Electronic Spaces, Urban Places*, published by Routledge in February 1996 (co-authored with Simon Marvin), and *Managing Cities: The New Urban Context,* published by Wiley in 1995 (co-edited with Patsy Healey, Stuart Cameron, Simin Davoudi and Ali Madani-Pour).