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Publication date

2009

Document Version

Final published version

[Link to publication](#)

Citation for published version (APA):

McQuire, S., Martin, M., & Niederer, S. (2009). *Urban screens reader*. (INC reader; No. 5). Institute of Network Cultures.
http://www.networkcultures.org/_uploads/US_layout_01022010.pdf

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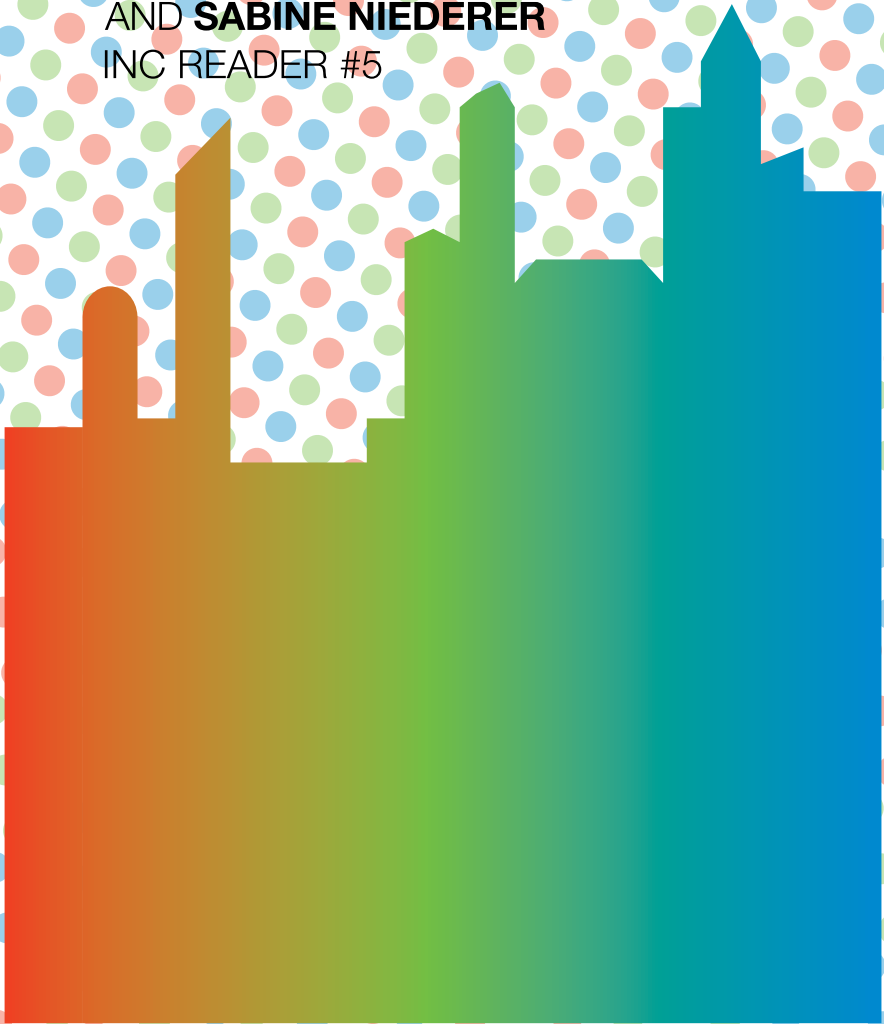
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URBAN SCREENS Reader

EDITED BY
**SCOTT MCQUIRE, MEREDITH MARTIN
AND SABINE NIEDERER**
INC READER #5



Urban Screens Reader

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Design: Katja van Stiphout

Printer: Raamwerken Printing & Design, Enkhuizen

Publisher: Institute of Network Cultures, Amsterdam 2009

ISBN: 978-90-78146-10-0

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Supported by: the Dutch Ministry of Education, Culture and Science in collaboration with Virtueel Platform, the Faculty of Arts, University of Melbourne, the School for Communication and Design at the Amsterdam University of Applied Sciences, MediaLAB Amsterdam and the International Urban Screens Association. The editors would also like to acknowledge the assistance of the Australian Research Council LP0989302 in supporting this research.

Special thanks to all the authors for their contributions, and to Michael Dieter for his careful copy-editing.

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The INC reader series are derived from conference contributions and produced by the Institute of Network Cultures. They are available in print and pdf form. The *Video Vortex Reader* is the fourth publication in this series.

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INTRODUCTION

SCOTT MCQUIRE, MEREDITH MARTIN AND SABINE NIEDERER

On September 23, 2005, about 200 people crammed into the 11th floor of the POSTCS building in Amsterdam for the opening of the first Urban Screens conference. One of the most noticeable aspects of the event, organised by the Institute of Network Cultures in conjunction with Mirjam Struppek, Gerrit Rietveld Academy and Stedelijk Museum Amsterdam, was the range of different interest groups it attracted. Artists sat alongside broadcasters and other 'content providers', architects and urban planners jostled with advertisers, curators and new media theorists, while activists rubbed shoulders with screen owners, technology providers and signage analysts. This heady mix unleashed the kind of energetic discussion born of frequent misunderstandings as much as productive intersections, and crystallized the realisation that something significant had changed.

In 2005 'urban screens' were about 30 years old, if we can take the installation of the famous Spectacolour Board in New York's Times Square as a convenient point of origin. However, if Spectacolour in the mid-1970s was clearly about forming a new advertising platform, by 2005 cumulative changes in technology, urban space and public culture had all contributed to the pervasive sense that something new was emerging. Instead of treating the digital realm primarily in terms of its separation from everyday life (as the discourses around 'virtual reality' and 'cyberspace' had done in the 1980s and 1990s), the discussion around urban screens was animated, above all, by recognition of the growing integration of media into everyday existence. Urban screens of various scale – from the small handheld screens of mobile phones to the large screens dominating the streetscapes of global cities – exemplified a new urban paradigm produced by the layering of physical space and media space, resulting in what has been variously called 'Hertzian', 'hybrid', 'mixed', 'augmented' or 'stereoscopic' space.

Two more international Urban Screens conferences have taken place since 2005. The first, in Manchester in 2007, was jointly organised by BBC Public Space Broadcasting, Cornerhouse Manchester, MDDA and the Institute of Network Cultures, and focused on the issue of content creation, including processes of commissioning and funding, and practices of curatorship. The most recent event took place in Melbourne in 2008, as the result of a partnership between the University of Melbourne and Federation Square. Under the rubric of 'Mobile Publics', the conference investigated the new conditions of public culture and the public sphere in the context of global digital networks and new forms of transnational mobility. Both events attempted to foster the sort of interdisciplinary orientation that had marked the first Urban Screens conference and, in particular, to provide an arena in which a range of different voices and concerns could be heard.

Recapitulating this brief history is germane to this collection, not at least because many of the papers had their genesis at one or other of these conferences. The issues first raised

in these presentations have been updated, extended and reformulated for the current volume, and supplemented by a series of interviews with major screen operators and curators, with the aim of offering a more detailed, granular understanding of the sorts of potentials and tensions that large screen installations generate. The breadth of approaches and concerns covered in this reader marks a difference from many other attempts to address the embedding of media into urban space. Instead of speaking primarily to discrete audiences of media practitioners, social theorists, artists, or architecture and design professionals, the concern here is to facilitate a *critical* investigation of fundamental transformations affecting urban public space. For this reason, the conceptual frameworks mobilised here move well beyond the familiar standoff between a *beaux-arts* disdain for commercial signage, and a blanket injunction to ‘learn’ from Las Vegas. Instead, the different contributors are united in the endeavour to engage with the complexities of public space in an era of global digital networks and global cities. Rather than structure the reader along disciplinary boundaries, its component parts – ‘Urban Screens: History, Technology, Politics’, ‘Sites’, and ‘Publics and Participation: Interactivity, Sociability and Strategies in Locative Media’ – encompass a range of methodological approaches to the pre-history, contemporary contexts and future directions of urban screens. The result is a series of essays which, by hybridising case study with art work, theory with observation, policy with practice, seeks the conditions for establishing a better balance between the contest of civic, commercial and artistic values in urban space.

As Erkki Huhtamo notes in the coda to his essay in this reader, where he describes the hundreds of new LED screens colonising public space in Los Angeles, one very possible heading of ‘urban screens’ is the intensification of audiovisual pollution. The end game here would be the spectacular exhaustion of urban space, a future frequently prophesied from Debord to Virilio. Yet, at the same time that advertisers are clearly looking beyond broadcast media towards new screen platforms, we have also witnessed the emergence of a new generation of *public* screens in cities such as Melbourne, Liverpool and Amsterdam. These screens are deliberately situated in traditional public spaces such as plazas and city squares rather than traffic thoroughfares. This new generation of screens is at the forefront of instigating new events and types of programming, enabling innovative and experimental modes of public engagement. Interest in these examples is now encouraging changes in other locations. For example, in August 2009 the urban development in Songdo, Korea (slated as the world’s largest private infrastructure project) opened a large screen located in the plaza of its future transport hub. The event held to celebrate the opening involved an interactive artwork linking public participants in Korea and Australia in real-time. Back in the old ‘new world’ even Times Square is showing signs of change. The street closures and provision of seating discussed by Julia Nevárez in her essay in this collection testify to a growing desire to use public screens *differently* – to promote different modes of spectatorship, engagement and participation.

The provision of new sites clearly doesn’t solve all the problems, but it does put a range of new questions on the table. In many respects, the struggles and tensions over urban screens mirror the defining ambivalence of ‘digital culture’ at large. What is the relation between technology, culture, economics and politics? How do technical decisions, such as

determining standards and ‘affordances’, or erecting stand-alone installations or forming unified networks, affect cultural experiences and the distribution of power? How should we conceptualise public participation in relation to urban screens? Are the public citizens, consumers, producers, or something else? And when considering the location of a large screen, what are the appropriate forms of urban planning, design and governance? When a screen is erected in public space, who should have access to it and who has control over it? What kinds of partnerships enable innovative screen programs, and contribute to rich public cultures? How might this be evaluated? In what conditions can public screens contribute not only to new forms of public interaction but to the deeper democratic ambitions of public culture? Where is the contemporary public sphere located and what are its boundaries and lines of force?

It would be naive to expect that this reader provides definite answers to all of these questions. What the essays in this volume do establish, however, are some of the critical junctures and key resources for rethinking the relation between public culture and urban space in the present. They are offered as a critical handbook, which also seeks to inform new projects. Urban screens form an area where policy-makers in many cities have been largely inert. This inertia leaves space for others, including the cultural sector, to make the running. We encourage you to do just that, so this important new dimension of public space can fulfill its potential.

PART 1
**URBAN SCREENS:
HISTORY, TECHNOLOGY, POLITICS**

MESSAGES ON THE WALL AN ARCHAEOLOGY OF PUBLIC MEDIA DISPLAYS

ERKKI HUHTAMO

Tracing Monumental Media

Visual media culture does not exist solely in interior spaces. This becomes evident if one thinks about today's urban screens, the largest concentration of which may well be the square in front of the Shibuya railway station in Tokyo. The walls of the surrounding buildings have been covered by screens of different sizes and shapes, and the spaces in-between coated with neon signs. A kind of artificial horizon has been created.¹ Except for celebrating and promoting the values of commercial capitalism, the moving and flashing images don't connect with each other either thematically or formally.² They constitute a mutating mosaic that is part of the cityscape and at the same time *becomes* the cityscape. Passers-by glance at the screens, but don't get easily 'absorbed' into them. The wall-mounted screens form an ambience rather than a set of targets for sustained attention.

In spite of their growing prominence, public screens remain peripheral when it comes to media scholarship. Cinema and television studies, as well as 'new media' research, have largely ignored them. Most scholars of audiovisuality seem prone to look toward segregated and 'interiorised' (both psychologically and physically) experiences. In a way, it is surprising that public screens have received little attention, considering the huge impact of Guy Debord's *Society of the Spectacle* and the re-assessment of commercial public environments by post-modern architectural and urban theory, most notably Robert Venturi, Denise Scott Brown and Steven Izenour's classic *Learning from Las Vegas*.³

This article develops a tentative archaeology of public media displays, discussing their 'formative' stages from trade signs, banners and broadsides to billboards and the earliest dynamic displays.⁴ It demonstrates that this development was constantly accompanied by discourses that commented on it and affected its forms. The main attention will be on the monumentalisation of displays, but it will also be pointed out that this issue cannot be separated from the simultaneous miniaturisation and proliferation of reproduced imagery and media gadgetry.

1. See Peter Callas, 'Some Liminal Aspects of the Technology Trade', *Mediamatic* 5.3 (Fall 1990): 107-115.
2. In a few cases two screens have been used simultaneously to display the same subject in Shibuya. Likewise, there have been experiments, where mobile phone messages by people on the street have been displayed on the screens.
3. Robert Venturi, Denise Scott Brown and Steven Izenour, *Learning from Las Vegas*, Cambridge, MA: MIT Press, 1972.
4. It is also a contribution to *screenology*. See Erkki Huhtamo, 'Elements of Screenology: Toward an Archaeology of the Screen', *ICONICS: International Studies of the Modern Image* 7 (2004): 31-82.

From Signboards to Placards and Billboards

Painted or carved wall inscriptions to attract attention were already known in ancient Rome. Romans also used signboards to identify craftsmen's workshops and various services. Similar practices existed in Medieval Europe, although more decisive evidence is only available from the sixteenth century onwards. Metal emblems with symbolic objects or coats-of-arms suspended from a rod protruding from the front of a house were widely used as means of identification; before the adoption of house numbering, they also served as address indicators. The habit of posting printed bills on doors and walls made more varied linguistic messages possible. It began in the late fifteenth century in the wake of the Gutenbergian revolution. As communities grew and the hold of capitalism became stronger, the role of public advertising gained more importance. Signboards also developed into vehicles for distinguishing between *similar* competing products and services. This was related to the introduction of other forms, such as printed tradecards and eventually newspaper advertisements.

Strategies of persuasion gained force over the seemingly neutral notices that announced 'services'. As we have already seen, fairs, carnivals and other public gatherings played a role in this development. Market stalls for touring theatre troupes, circuses and other entertainments had large painted banners as attractors and 'previews' of the show's content. The itinerant theatrical entrepreneur John Richardson (1766-1836), who began his successful career as a humble 'penny showman', used the services of the most famous scene painters from London's Royal patent theatres.⁵ Together with the cries of the barkers, the banners became weapons on a discursive battlefield that anticipated the role of movie posters. The notorious father of 'humbug', P.T. Barnum adopted this practice, displaying large banners of the curiosities he was exhibiting at the American Museum (New York) on its facade facing Broadway, the busiest thoroughfare of the city.⁶

Printed attractions in outdoor spaces became widespread in the early nineteenth century. In London, printers and booksellers began to display satirical political engravings and novelty prints in their shop windows, turning these into kinds of free galleries for 'media imagery'.⁷ Advertising broadsides promoting products and popular spectacles began to be used in great numbers on any available surfaces, from fences to walls and even doors. This did not only have to do with the growth of metropolitan cities like London and Paris, or the intensifying competition in the capitalist economy, but also with other issues, such as the heavy taxation of paid advertisements in newspapers. Advertising in public spaces was a cheaper channel

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5. See Richardson's obituary in *The Gentleman's Magazine* 7 (Jan-June 1837): 326-327.
 6. Several contemporary illustrations demonstrate this, see George G. Foster, *New York by Gas-Light and Other Urban Sketches*, ed. Stuart M. Blumin, Berkeley: University of California Press, 1991, p. 8.
 7. Diana Donald, *The Age of Caricature: Satirical Prints in the Reign of George III*, New Haven: Yale University Press, 1996, pp. 3, 7, 28, 33. W. Weir also paid attention to this in 1851 when he wrote that 'the windows of the print-shops – especially of those in which caricatures are exhibited – have great attractions', although they could not rival (anymore) the placards at the stations. W. Weir, 'Advertisements', in Charles Knight (ed.) *London*, Vol. V, London: Henry G. Bohn, 1851, p. 33.

and could reach a wider audience. The first half of the nineteenth century was its wild period, as the histories of advertising testify.⁸ Billposters obeyed no rules, using any available surfaces. Layer upon layer, they pasted their broadsides on walls that were often already covered. They competed and even physically fought with each other, paying little attention to the official edicts meant to control the situation.

The cityscape turned into a constantly metamorphosing, tension-filled patchwork of overlapping textual and visual messages. In the *palimpsest* covering the wall of the Park Theater in New York, the journalist George Foster thought he perceived the following message, which would have appealed to the surrealists and the Situationists: 'Steamer Ali – Sugar Coat – and Pantaloons for – the Great Anaconda – Whig Nominations – Panorama of Principles – Democrats rally to the – American Museum' – and so on ...'.⁹ There were innovations, such as messages painted on the ground with invisible colours that only became visible when it rained, as well as 'peripatetic' and 'vehicular placards'.¹⁰ The first referred to humans walking on the streets either holding advertising boards or being 'dressed up' in them, front and back (Charles Dickens named them 'the animated sandwich').¹¹ The latter meant omnibuses and carriages covered by moving advertisements. In the most extreme cases, the vehicles themselves were camouflaged as large three-dimensional objects.¹² All this contributed to what Jean-Louis Comolli characterised as the 'frenzy of the visible'.¹³ Public imagery, both static and dynamic, came to envelop the lives of the city people at every step.

It would be tempting to say that posted broadsides functioned as 'proto-screens', but this might go too far. As an information interface, the definition of the screen should incorporate a separation between hardware and software. It should function both as a frame and a gateway through which messages are transmitted and retrieved. In the limited sense such conditions appeared, when after decades of billposting anarchy, enterprises began to acquire legal rights

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8. Blanche B. Elliott, *A History of English Advertising*, London: Batsford, 1962, pp. 164-167; Philippe Schuwer, *Geschichte der Werbung*, Vevey: Editions Rencontre, 1966, pp. 62-63; see also Henry Sampson, *A History of Advertising from the Earliest Times*, London: Chatto and Windus, 1875.
 9. Foster, *New York by Gas-Light*, p. 152. For Foster, the true message of the overlapping 'handbills' was 'mutability'.
 10. Weir, 'Advertisements', p. 37.
 11. This is mentioned by Weir and other contemporary sources, including a letter by an 'American Lady' from the period. Weir, 'Advertisements', p. 37; Henry Wood (ed.) *Change for the American Notes: in Letters from London to New-York*, New York: Harper and Brothers, 1843, letter XVIII, p. 39.
 12. Sally Henderson and Robert Landau, *Billboard Art*, ed. Michelle Feldman, San Francisco: Chronicle Books, 1980, p. 11.
 13. The phenomenon was 'the effect of the social multiplication of images ...', and also 'of something of a geographical extension of the field of the visible and the representable ...'; Comolli also pointed out that 'there is a visibility of the expansion of industrialism, of the transformation of the landscape, of the production of towns and metropolises', Jean-Louis Comolli, 'Machines of the Visible', in Teresa de Lauretis and Stephen Heath (eds.) *The Cinematic Apparatus*, London and Basingstoke: Macmillan, 1980, pp. 122-123.

to use certain surfaces and rent them out for advertisers. In England, this practice came to be known as 'placard advertising'. Advertising space was rationally divided into framed 'lots', and these were 'cultivated' by companies who had bought rights to use them. The newly organised 'adscape' was realised early at railway stations. The constant flow of passers-by made them attractive, and passengers could be forced to see placards from the train as well. In the United States, the word 'billboard' was adopted, reflecting a similar institutional and commercial development.¹⁴ Catherine Gudis has aptly summarised its significance: 'like the buildings rising in growing metropolises, billboards contributed to the accretion of commercial centres and formalised the incursion of pictures and texts to the public sphere'.¹⁵

Although billboards represented an effort to tame the wild advertising, they did not manage to dampen criticism against its harmful effects. On the contrary, a heated and long-lasting public debate ensued. It manifested itself in the formation of trade organisations to defend the business, including the International Bill Posters' Association of North America (1872) and the Associated Bill Posters' Association of the US and Canada (1891), which eventually developed into today's Outdoor Advertising Association of America (OAAA). Citizens' watch groups were also formed, such as the British SCAPA (Society for the Checking of Abuses in Public Advertising, 1893). Like similar organisations elsewhere, it encouraged its members to document misuses and excesses of public advertising and fought for the removal of misplaced and improper billboards.

The tension became even more intense when the introduction of the automobile encouraged advertisers to erect billboards not just in the cities, but also by the roadsides. They were frequently accused of blocking access to scenic landscapes. This issue did not escape the attention of satirical cartoonists. A cartoon titled 'Go Prepared if you Wish to Enjoy American Scenery' (1925) depicts a car parked by a roadside flanked by billboards.¹⁶ The passengers are seen enjoying the scenic view from the top of long ladders leaning against them. The fight against 'rubbish, weeds, and billboards' was declared a 'crusade'.¹⁷ Taking it literally, the pioneer feminist Frances Power Cobbe attacked billboards with a 'pot of paint and a long-handled brush on her rural drives in order to deface defacements', setting an example for the 'adbusters' and critical street artists of later times.¹⁸

14. This happened probably in the 1870s, although the *Oxford English Dictionary* mentions a British example from 1851: 'The bill-boards of the Park ... still continued to style the Park "The Theatre"'. This doesn't seem to be directly related to the later American usage.

15. Catherine Gudis, *Buyways: Billboards, Automobiles, and the American Landscape*, New York and London: Routledge, 2004, p. 19.

16. Reprinted in Gudis, *Buyways*, p. 186.

17. Clinton Rogers Woodruff, 'The Crusade Against Billboards', *The American Review of Reviews*, July-December 1907, pp. 345-347. Woodruff was the first President of the American Civic Association.

18. Ernest S. Turner, *The Shocking History of Advertising*, New York: Ballantine Books, 1953, p. 124. Cobbe does not mention this episode in her autobiography, Frances Power Cobbe, *Life of Frances Power Cobbe as Told by Herself*, London: Swan Sonnenschein and Company, 1904.

Enlarging and Shrinking: the Gulliverisation of Media

Outdoor advertising in the nineteenth century is interesting not just because of its proliferation and institutionalisation, but also because of the enormous enlargement of the messages themselves. Early signboards and printed broadsides were relatively small. Their scale could be characterised as anthropomorphic, which more or less corresponded with the dimensions of the environments in which most people lived. Elements that did not conform to this principle usually had to do with power. Cathedrals, city walls, castles and town halls were meant to impress the 'common people' by their size. Gothic cathedrals had enormous rose windows made of thousands of pieces of stained glass. Standing under Bernini's immense cupola at the new St. Peter's in Rome was meant to convince the visitor of the might of the Catholic Church. Still, even extraordinary public sights, such as astronomical clocks built into the walls of churches or town halls (sometimes on their outside walls) often consisted of relatively small elements. Their clockwork-operated *Jaquemarts* performed at regular intervals, but the mechanical moving figures weren't necessarily larger than the *automata* demonstrated at fairs by itinerant showmen.

An early nineteenth century French cartoon points toward change. It shows two men trying to read announcements posted on the wall.¹⁹ One of them is peeking at the densely filled sheets from a ladder, while the other is using a telescope. The point of the cartoon is the absurdity of posting long official notices on the wall, but its 'statement' can be generalised. Broadsides were not only piling up, but also climbing up along the walls, which made reading their messages difficult.²⁰ The situation changed dramatically during the century, partly because of economic developments and changes in the urban environment, partly because of improvements in printing techniques. By the end of the century it became possible to produce large chromolithographic posters in several colours. Graphic designers learned to deal with large size, concentrating on elements that could be detected from a distance. They simplified the textual part of the message, focusing on the trademark and 'branding'. Advertisers began to consider the placement of the billboard within the 'adscape', playing with issues of scale and perspective that enhanced the power of their message in relation to the surrounding elements.

The development also led to the opposite direction. Lithography and its improvement, chromolithography, as well as techniques of photographic reproduction, provided new possibilities for the production of 'smaller than usual' pictures. Tiny mass-reproduced images spread to every imaginable place. Pictures filled up photographic albums and scrapbooks, and were also used as raw material for parlor pastimes, such as the creation of colourful collages of 'found' imagery on the common folding 'screens' (room dividers). Illustrated magazines were part of the trend. The enlargement of public images was, therefore, accompanied by its reverse: miniaturisation and privatisation.

19. Reprinted in David Bernstein, *Advertising Outdoors: Watch this Space!*, London: Phaidon, 2007, p. 12.

20. Broadsides were sometimes called 'handbills', which refers to their other use: the practice of distributing them from hand to hand.

One could refer to this phenomenon as the ‘Gulliverisation’ of the visual, as I already suggested nearly twenty years ago.²¹ The concept refers to a two-directional optical-cultural ‘mechanism’ that worked against the idea of a common anthropomorphic scale. The size of the human observer kept on shifting between gigantic (in relation to the *carte-de-visite* photographs or tradecards) and Lilliputhian (in front of large billboards or below advertising spectacles in the sky). Something similar happened in the field of media: ‘immersion’ into an enormous circular panorama or diorama painting (and later, the cinema screen) found its counterpart in the act of peeking at three-dimensional photographs with the ubiquitous hand-held stereoscope.

Gulliverisation operates at the divide between the public and the private. The urban environment, with the skyscraper as its ultimate manifestation, became more and more ‘inhuman’, whereas the home provided a return to the anthropomorphic scale. The countless miniature objects and images that dotted the Victorian parlor (including miniature souvenirs of public monuments) gave the inhabitant an illusion of control that s/he was losing in public outdoor spaces. Gulliverisation also raises the issue of the relationship between things that are near (tangible) and distant (unreachable). Mediating between these opposites became an important part of the advertisers’ strategies, even if it may not have always been explicitly formulated. Billboards gave products a monumental and ‘universal’ quality. Trade cards, newspaper ads and other forms brought them close, making them tangible and ‘personal’. At the fingertips, such paraphernalia functioned as placebos for the products the subject did not (yet) possess. Everything was mediated by ‘magic’ transformations – in particular by changes of scale that were inseparable from the perceptions and motions of the observer (the potential buyer).

Similar ‘bipolar optics’ later manifested themselves in movie stardom and the ideological manipulation of the masses practised in totalitarian societies like Nazi Germany. Pictures of film stars became a popular topic for *figurines*, collectable trade cards. The enormous faces on promotional billboards and cinema screens were shrunk to the size fit for one’s fingertips: the object of distant adoration was brought to tactile reach. These minuscule pictures were an essential part of the play of expectations, promises and lust of the star cult. Like family pictures kept in the wallet, they could be more than just a picture, becoming representations of the absent, almost the ‘thing itself’. The religious implications of the star cult are apparent here.²² Advertising, the star system and religious worship share the interplay between the monumental and the intimate. In this sense, commercial billboards could perhaps be characterised as altar pictures for the cult of capitalism.

The Nazis understood that the ideological indoctrination of a nation depended not just on explicit propaganda and mass rituals, but also on seemingly insignificant channels. They ‘orchestrated’ mass events and symbolic acts. Massive billboard-like images of Hitler’s face were put on display. Leni Riefenstahl’s state-sponsored ‘documentaries’ *Triumph of the Will*

21. Erkki Huhtamo, ‘Gulliver in Figurine Land’, *Mediamatic* 4.3 (1990): 101-105.

22. Figurines resemble mass-produced devotional cards, whose iconography derives from altar paintings and other large-scale religious representations.

(1934) and *Olympia I-II* (1938) were part of a media facade to impress both Germans and foreigners. However, the Nazis also operated in the other end of the scale. Joseph Goebbels’ Propaganda Ministry founded a company named *Cigaretten-Bilderdienst* to produce series of collectable cards placed in cigarette packs.²³ Their subjects included the life of Hitler, Nazi uniforms, the *Anschluss* of Austria and the *Wehrmacht*. Predictably, there was also a series about the Berlin Olympic Games of 1936, which provided the Lilliputian counterpoint of Riefenstahl’s colossal film. Handsome collectors’ albums, with carefully scripted captions already in place, were produced for the cards; the Nazi ideology was internalised as a ‘side-product’ of ‘innocent’ hobbyism.²⁴

The Advent of Dynamic Displays

By the end of the nineteenth century the billboard had become a prominent part of the urban environment. Cartoonists displayed people walking within maze-like adscapes, where billboards had replaced everything else, becoming a shared ‘virtual reality’.²⁵ It is no wonder that billboards were constantly criticised by cultural reformists, and targeted by modernist architectural critics calling for a city cleaned of ornamentation, historicist references and non-functional(ist) features. As usual, Oscar Wilde expressed an opinion shared by few of his peers among the cultural elites, when he praised street advertising for bringing ‘colour into the drab monotony of the English streets’.²⁶ Whatever attitude one adopted, the billboard could not be ignored. And yet, considering it a ‘screen’ in the media-cultural sense would not be justified. A billboard could suggest a narrative, but it wasn’t a medium for sequential presentations. No matter how gigantic, it was a frozen printed image. It was able to move or evolve only in dreams or fantasies, as Busby Berkeley’s extravagant ‘Optical Illusion’ sequence in the Warner Bros musical *Dames* (1934) suggested.²⁷ It really was a huge emblem supposed to imprint an idea – the trademark – into the minds of the passers-by.

However, new dynamic elements were introduced to the urban adscape. Technically, the *primum mobile* was electricity. The new role of electric light in the streets and at mass-events such as the world’s fairs, led to an ‘electric landscape’ that ‘sprang up in patch-

23. Antonio Faeti, ‘Il tabacco di Goebbels’, in Rolando Bussi and Enrica Manenti (eds.) *Figurine! Pubblicità, arte, collezionismo e industria 1867-1985*, Modena: Edizione Panini, 1989, pp. 76-89.

24. The Munich-based Raumbild-Verlag published sets of 3D picture-pairs of Germany’s war efforts, see *Die Soldaten des Führer’s im Felde*, München: Raumbild-Verlag, 1940. The albums contained 100 photographic stereoviews and a folding stereoscope.

25. See Henderson and Landau, *Billboard Art*, p. 16. Another cartoon displaying a similar idea (by Mr. Donnell, from the *Globe-Democrat*) has been published in The Civic League of St. Louis, *Billboard Advertising in St. Louis: Report of the Signs and Billboards Committee of the Civic League of St. Louis*, St. Louis: The Civic League of St. Louis, 1910, p. 6.

26. Quoted in Elliott, *A History of English Advertising*, p. 165. No source is given.

27. *Dames* (dir. Ray Enright 1934). Young lovers, interpreted by Ruby Keeler and Dick Powell, are traveling in a street car. He falls asleep and sees a dream featuring her girlfriend and other females in a fantastic stylised dance spectacle that takes place in an adscape turned into a dreamscape.

es'.²⁸ Particularly in the United States, electricity became associated with symbolic values – progress and 'things American'. Soon after the incandescent bulb had been introduced in the late 1870s, it was applied to advertising. In New York, the Broadway became known as the 'Great White Way', which referred to the electrified advertisements and illuminated shop windows that turned the street into a luminous attraction after dark. 'The transparent posters on which electricity wrote advertising texts with letters of fire' (Jules Verne) had qualities lacking from normal billboards.²⁹ Not only did they lengthen the daily hours passers-by were exposed to their messages, animations could be produced by switching the illuminated parts rhythmically on and off. A particularly complex sign was erected on the roof of Hotel Normandie in New York. It was seven stories high and had twenty thousand light bulbs, depicting an illuminated Roman chariot race. One reporter found it 'more perfect and natural in its movement than the finest coloured cinematograph picture'.³⁰

Although electricity made spectacular light effects an everyday experience, they were not without predecessors. For centuries, fireworks had been used to illuminate architectural structures to celebrate royal births and weddings or war victories.³¹ As George Plimpton explained, 'machines' (also known as 'temples') were used for this purpose already in the seventeenth century.³² They were 'elaborate ornamental structures, usually in the form of buildings, which were decorated with paintings, usually of allegorical figures, flowers, and lamps which were cut out in silhouette to glow from behind'.³³ The 'machines' often resembled fountains, palaces or boats erected on floats on a river, or on bridges and open squares, for obvious reasons. When the fireworks were set off, a 'multimedia spectacle' *avant la lettre* was unleashed. While 'normal' fireworks express at most simple icons (flowers, etc.), the representational elements of the 'machine' added allegorical and political meanings to the show.³⁴ For the observers, the 'machine' produced a kind of picture that was 'animated' by the explosives and finally consumed by fire.

There was a relationship between such extravaganzas and the late nineteenth century electric illuminations of bridges, buildings, statues and other elements of the urban envi-

28. David E. Nye, *Electrifying America: Social Meanings of a New Technology*, Cambridge, MA: MIT Press, 1990, p. 32.

29. Author's translation, Jules Verne, *Paris au XXe Siècle*, Paris: Hachette, 1863, p. 197.

30. Francis Arthur Jones, 'The Most Wonderful Electric Sign in the World', *The Strand Magazine*, undated clipping, quoted in Nye, *Electrifying America*, p. 52.

31. Wolfgang Schivelbusch sees their origin in medieval bonfires. Already in the seventeenth century they were developed into an 'artform' with strict rules and own aesthetics executed by fireworks masters. See Wolfgang Schivelbusch, *Disenchanted Night. The Industrialization of Light in the Nineteenth Century*, trans. Angela Davies, Berkeley: University of California Press, 1983, pp. 137-139.

32. George Plimpton, *Fireworks*, Garden City, New York: Doubleday and Company, 1984.

33. Plimpton, *Fireworks*, pp. 34-35.

34. The Chinese artist Cai Guo-Qiang has used fireworks in public spaces as an artistic medium. *The Black Rainbow* – series (2005) expressed an anti-celebratory stance for the era of global terrorism. See Thomas Krens and Alexandra Munroe, *Cai Guo-Qiang: I Want to Believe*, New York: Guggenheim Museum Publications, 2008, pp. 63-65, 180-183.

ronment.³⁵ According to Carolyn Marvin, the transformation of the traditional effects from the era of fire to that of electricity was 'very gradual'.³⁶ Many classical motives, including fountains of fire, were simply translated into the 'vocabulary of electric light effects'.³⁷ We should also note the influence of fireworks on spectacular, but 'safe' media forms, such as the *feux pyriques* (or *feux arabesques*), and *chromatropes*, mechanical magic lantern slides also known as 'artificial fireworks'.³⁸ *Feux pyriques* did not involve fire or explosives. The effects were created by slotted and coloured pictures that had abstract patterned discs rotating behind them (sometimes by means of a clockwork mechanism). They were displayed indoors, usually in combination with other optical 'marvels', such as magic lantern projections that often used chromatropes as a visually intoxicating culmination (and indication it was time to go home).

Magic Lantern Projections as an Anticipation of the Urban Screen

Another way of bringing dynamic images to the public environment was magic lantern projection. Since its introduction in the mid-seventeenth century, the magic lantern had been considered only suitable for darkened interior spaces.³⁹ This is understandable, because the available light sources were weak, and the projected images dim. What made projections in public outdoor spaces possible were dramatic improvements in lighting technology, in particular the oxy-hydrogen limelight ('calcium light') and the electric arc-light.⁴⁰ According to Schivelbusch, powerful arc-lights were experimented with as early as the 1840s to illuminate public monuments in Paris.⁴¹ The idea of projecting not just a beam of light, but pictures and texts as well, followed as a logical step. An intermediate form was the use of searchlights on night-time river cruises to isolate scenes from the dark riverbanks. According to an enthusiastic participant, 'the magic shaft of the search-light swung from point to point *making pictures* of which the details were more clearly shown than they could be by day'.⁴²

35. Carolyn Marvin, *When Old Technologies Were New: Thinking About Electric Communication in the Late Nineteenth Century*, Oxford: Oxford University Press, 1988.

36. Marvin, *When Old Technologies Were New*, p. 153.

37. Marvin, *When Old Technologies Were New*, pp. 164, 167.

38. An original eighteenth century device for *feux pyriques* with a large set of 'software' has been preserved in the Jonathan and Jacqueline Gestetner Collection in London, where I have had an opportunity to explore it. The words 'artificial fireworks' were used about their chromatropes by the well-known British manufacturer Carpenter and Westley. There are some examples in the author's collection.

39. For the early history of the magic lantern, see Deac Rossell, *Laterna Magica – Magic Lantern, Band 1 / Vol. 1*, German trans. Marita Kuhn, Stuttgart: Fuessli Verlag, 2008.

40. The history of these light sources is complex. Both reached levels at which they could be used for practical purposes toward the mid-century. See Patrice Guerin, *Du soleil au xenon. Les techniques d'éclairage à travers deux siècles de projection*, Paris: Prodiex, 1995; Terence Rees, *Theatre Lighting in the Age of Gas*, London: The Society for Theatre Research, 1978.

41. Later the French used them during the colonial wars in Africa to scare away the enemy, thus proving the ideological and military benefits of a 'blinding' technology, Schivelbusch, *Disenchanted Night*, pp. 54-57.

42. Emphasis added, R.A.S., 'The Hudson Seen by Search Light', *New York Evangelist*, Sept. 16, 1897, p. 9.

Particularly in the United States (where the magic lantern was often known as the ‘stereopticon’), slides were projected outdoors on screens, blank walls and even public monuments since the 1860s.⁴³ In Boston, an enterprise named The Automatic Stereopticon Advertising Company promised that ‘the Automatic Stereopticon Advertiser Works All Night’, displaying ‘your Advertisement to wondering crowds’.⁴⁴ An illustration on its tradecard depicts a large magic lantern on a scaffolding in a town square, projecting the company’s name and address on a screen erected on a horse-drawn cart. Although it is night-time, a large crowd of spectators is present (or so the promoter wants us to believe). Commercial outdoor projections became a well-established tradition, although their full extent is not yet known. Later in the century the well-known American soap manufacturer Benjamin T. Babbitt advertised his free touring ‘Magnificent Stereopticon Exhibition and Musical Entertainment using the Oxyhydrogen or Calcium Light’.⁴⁵ It was shown in different cities after dark at some well-known street corner. The views were claimed to be of ‘a greater size than the largest Panorama’, and the ‘Magnificent Horses and Wagons used for transportation’ provided additional ‘pleasure to thousands’.

In 1904, the magic lantern manufacturer T.H. McAllister described five modes of projecting slides in outdoor spaces with its ‘advertising stereopticons’: on walls, shop windows, screens mounted on moving horse-drawn carts and screens erected on the roof (using either front or rear projection).⁴⁶ The roof projections were recommended for displaying ‘latest news bulletins’ or ‘election returns’. Indeed, the last mentioned had already been used for decades. In a typical case, on November 24, 1866, *Harper’s Weekly* published a full page illustration about the presentation of ‘election returns’ by means of a magic lantern outside the *New York Tribune’s* office building.⁴⁷ Similar reports appeared frequently over the years.⁴⁸ More than one magic lantern and screen were sometimes used. The projected slides contained handwritten statistical data about the ballot count, scribbled on the spot

43. In *The Shocking History of Advertising*, Turner records a commercial magic lantern projection on the Trafalgar Square in London on Trafalgar Day, 1894. Ads for ‘pills, blacking, and watches’ were projected on the side of Nelson’s Column and the pillars of the National Gallery. In *The Times* a reader ‘suggested “jamming” the advertisements by a more powerful beam’. Turner, *The Shocking History of Advertising*, pp. 126-127.

44. Undated tradecard (c. 1860s), author’s collection.

45. Undated broadside (c. 1880s), author’s collection. The exhibition in question was at corner of Broad and Middle streets (city unknown) at 8 o’clock. The broadside mentions earlier presentations in Charleston (South Carolina); Augusta, (Georgia), and Hinesville (Georgia). Babbitt’s soap works was based in New York City.

46. T. H. McAllister, *Catalogue of Stereopticons, Dissolving Apparatus, Magic Lanterns, Moving Picture Machines and Accessories*, New York: T. H. McAllister, 1904, p. 35.

47. *Harper’s Weekly*, Nov. 24, 1866, p. 744. The event had taken place around midnight, Nov. 6-7, 1866.

48. For example, *Frank Leslie’s Illustrated Newspaper*, Nov. 23, 1872 (cover); Oct. 25, 1884 (cover); Nov. 17, 1888, pp. 223-224; Nov. 15, 1890, p. 262; *Harper’s Weekly*, Nov. 17, 1888, p. 877; *Collier’s Magazine* 34.4, Oct. 22, 1904, cover. I have found these from the archives of the Magic Lantern Castle Museum, San Antonio, Texas (thanks to Jack Judson).

on blank slides coated with emulsion.⁴⁹ The data was received by the telegraph (or later, the telephone).⁵⁰ Although a short time lag was unavoidable, the use of visual media for this purpose anticipated today’s election-night broadcasts on TV. In 1896, *The Century Magazine* published a lively report about the spectacle:

The crowd ... gathers early in City Hall Park and Newspaper Square to read the messages written upon glass ‘slides’, and magnified upon broad screens outside the buildings by means of a stereopticon. At first these bulletins are vague and partial, but toward midnight they increase in breadth and importance. At intervals the operator presents a summing up like this: ‘418 districts out of a total of 600 in Ohio give John Smith, Dem., 117,926, and James Brown, Rep., 180,460.’, or: ‘Georgia elects the whole Democratic ticket by an estimated plurality of 20,000’. When he has nothing to report the operator displays a portrait of a candidate, or an impromptu cartoon, exhibiting in comical allegory the success of his man, or his side, and the discomfiture of the other fellow. Of late a favorite bit of fun has been to throw upon the screen a question like this: ‘What’s the matter with Cleveland?’ Promptly comes the answer from ten thousand throats: ‘He’s all right!’ Then shines out: ‘Who’s all right?’ And the windows rattle with the acclamation: ‘C-I-e-v-e-l-a-n-d!’⁵¹

The information about audience interaction is interesting; however, an election night was a special festive occasion. Most accounts about public projections emphasize the relative passivity of the onlookers as recipients. This was reflected in discursive form in the cartoons about public figures as outdoor lanternists published by satirical magazines like *Puck* and *Judge*. On September 19, 1888, *Puck’s* front page featured President Coolidge projecting his idea of the income tax reform on the dome of the Capitol. Years later, *Judge* depicted the notorious newspaper publisher Joseph Pulitzer with a magic lantern, presenting an economic-political commentary from the balcony of his newspaper building to a crowd on the street.⁵²

Postscript: Los Angeles, 2009

In the short time span of a few months, the media landscape of L.A. has undergone a major transformation: with astonishing speed the traditional billboards are being replaced by dynamic super bright LED billboards. Hundreds of them have already been installed, and more

49. Two boxes of such slides, with a needle-pointed stylus, have been preserved in the author’s collection. They are titled ‘Primus Diagram Lantern Plates For Showing Diagrams, Drawings, Writings, etc. in the Lantern’ and produced by Butcher and Son, Ltd, London. Cover illustration shows a picture of a slide with election results.

50. This is confirmed by the T.H. McAllister catalogue already referred to: ‘LANTERN ADVERTISEMENTS for temporary use – Election Returns, etc. – can be easily made by writing or painting them on glass, with India Ink, or with the “opaque” used by Photographers’, McAllister, *Catalogue of Stereopticons*, p. 35.

51. ‘Election Day in New York’, *The Century Magazine* 53.1 (Nov. 1896): 12.

52. ‘A Great Democratic Editor in the Greatest Democratic City Sheds Light on a Dark Subject’, *Judge*, Sept. 25, 1909. Although the cartoon is hand-drawn, Pulitzer’s magic lantern can be identified as a common cheap model sold by Sears-Roebuck around that time. The cartoonist may have used their mail order catalogue as model.

are on the way. LED billboards not only extend the principle of 'heavy rotation' – familiar from commercial radio and music television – to the public urban environment. The matrixes of thousands of backlit LEDs glow with power that makes the messages visible in bright sunlight, not to say anything about the night. They not only try to attract, but capture the gaze. Those who are unfortunate enough to live under their glow have begun to experience 'false sunrises' and demand public regulation. A social movement is rising, but whether it will have any impact in an environment dominated by corrupt politics and a general capitulation in front of the interests of corporate media and crony capitalism, remains to be seen.⁵³

I have chosen to conclude with this jump ahead in time to assure the reader that the developments described in this article have more than antiquarian interest. The emergence of public media displays did not take place automatically. There is nothing self-evident in the roles they came to play in urban spaces and beyond. It happened as a consequence of economic, political and social developments that were accompanied by discursive commentaries, cultural debate and social struggle. A media archaeological excavation of the factors, attitudes and forces that were involved can provide us weapons to counter corporate excesses like the ones taking place in Los Angeles right now.

53. Rebecca Cathcart, 'Billboards Brighten Los Angeles Night, to the Anger of Many', *The New York Times*, Nov. 6, 2008, p. A19.

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READING THE CITY IN A GLOBAL DIGITAL AGE

SASKIA SASSEN

Understanding a city through its built topography is increasingly inadequate when global and digital forces are part of the urban condition. Topography becomes a screen even as it forms a large component of the representation of cities. But it cannot incorporate the fact of globalisation and digitisation as part of the representation of the urban. Nor can it critically engage today's dominant accounts of globalisation and digitisation. These dominant accounts evict place and materiality, even though both globalisation and digitisation are deeply imbricated with the material and the local, and, hence, with that topographic moment.

A key analytic move that can bridge between these very diverse understandings is the possibility that particular components of a city's topography can be spatialisations of global and digital dynamics and formations. Such particular topographic components would then be one site in a multi-sited circuit or network: these spatialisations destabilise the meaning of the local or the sited and, thereby, of the topographic understanding of cities. This is, most likely, especially the case for global cities. Such an analytic move is, then, a way both of navigating through screens and of generating new urban screens.

My concern in this essay is to distinguish between the topographic representation of key aspects of the city and an interpretation of these same aspects in terms of spatialised global economic, political and cultural dynamics.¹ This is one analytic path into questions about cities in a global digital age. It brings a particular type of twist to the discussion on urban topography and cities since globalisation and digitisation are both associated with dispersal and mobility. The effort is then to understand what analytic elements need to be developed in order to compensate for or remedy the limits of topographic representations for making legible the possibility that at least some global and digital components get spatialised in cities. Among such components are both the power projects of major global economic actors but also the political projects of contestatory actors, such as electronic activists. A topographic representation of rich and poor areas of a city would simply capture the physical conditions of each – advantage and disadvantage. It would not capture the electronic connectivity, possibly marking even poor areas as locations on global circuits. Once this spatialisation of various global and digital components is made legible, the richness of topographic analysis can add to our understanding of this process. The challenge is to locate and specify the fact of such spatialisations and its variability.

This brings up a second set of issues: topographic representations of the built environment of cities tend to emphasize the distinctiveness of the various socio-economic sectors: the

1. These are all complex and multifaceted subjects which have engendered diverse literatures, all of which I have elaborated on elsewhere, see Saskia Sassen, *Territory, Authority, Rights: From Medieval to Global Assemblages*, updated ed., Princeton, NJ: Princeton University Press, 2008.

differences between poor and rich neighbourhoods, between commercial and manufacturing districts, and so on. While valid, this type of representation of a city becomes particularly partial when, as is happening today, a growing share of advanced economic sectors also employ significant numbers of very low-wage workers and subcontract to firms that do not look like they belong in the advanced corporate sector. Similarly, the growth of high income professional households has generated a whole new demand for low-wage household workers, connecting expensive residential areas with poorer ones, and placing these professional households on global care-chains that bring-in many of the cleaners, nannies and nurses from poorer countries. In brief, economic restructuring is producing multiple interconnections among parts of the city that topographically look like they may have little to do with each other. Given some of the socio-economic, technical, and cultural dynamics of the current era, topographic representations may well be more partial today than in past phases. In this sense, then, topography screens out hunks of urban reality.

To capture interconnections between what gets categorised as belonging to different domains – the global and the urban, the physical and the digital, rich and poor areas in a city that appear as completely unrelated – calls for certain kinds of analytic tools. We need tools that allow us to incorporate such interconnections between what appears unconnected, and to do so for the case of spatial representations of cities. Some of these interconnections have long existed. What is different today is their multiplication, their intensity, their character. Some elements of topographic representation, such as transport systems and water and sewage pipes, have long captured particular interconnections between rich and poor areas, for instance. What is different today in this regard is the sharpening of non-physical interconnections, such as social and digital interconnections, or the emergence of particular types of global imaginaries. This perhaps also points to a deeper transformation in the larger social, economic and physical orders. Topographic representations remain critical, but are increasingly insufficient. Such an effort is one more step toward understanding what our large cities are about today and in the near future and what constitutes their complexity.

Spatialised Power Projects

Cities have long been key sites for the spatialisation of power projects – whether political, religious, or economic. There are multiple instances that capture this. We can find it in the structures and infrastructures for control and management functions of past colonial empires and of current global firms and markets. We can also find it in the segregation of population groups that can be more easily produced as either cheap labor or surplus people; in the choice of particular built forms used for representing the symbolic cleansing of economic power, as in the preference for ‘Greek temples’ to house stock markets; and we can find it in what we designate today as high-income residential and commercial gentrification, a process that allows cities to accommodate the expanding elite professional classes, with the inevitable displacement of lower income households and firms. Finally, we can see it in the large-scale destruction of natural environments to implant particular forms of urbanisation marked by spread rather than density and linked to specific real estate development interests, such as the uncontrolled strip-development and suburbanisation that shaped the Los Angeles region. Yet the particular dynamics and capacities captured by the terms globalisation and digitisa-

tion signal the possibility of a major transformation in this dynamic of spatialisation. The dominant interpretation posits that digitisation entails an absolute disembedding from the material world. Key concepts in the dominant account about the global economy – globalisation, information economy, and telematics – all suggest that place no longer matters. And they suggest that the type of place represented by major cities may have become obsolete from the perspective of the economy, particularly for leading sectors, such as information economy sectors and finance, as these have the best access to and are the most advanced users of telematics. These are accounts that privilege the fact of instantaneous global transmission over the concentrations of built infrastructure that make transmission possible; information outputs over the work of producing those outputs, from specialists to secretaries; and the new transnational corporate culture over the multiplicity of cultural environments, including re-territorialised immigrant cultures, within which many of the ‘other’ jobs of the global information economy take place.²

One consequence of such a representation of the global information economy as place-less would be that there is no longer a spatialisation of this type of power today: it has supposedly dispersed geographically and gone partly digital. It is this proposition that I have contested in much of my work, arguing that this dispersal is only part of the story and that we see in fact new types of spatialisations of power. How do we reintroduce place in economic analysis? And how do we construct a new narrative about economic globalisation, one that includes rather than excludes all the spatial, economic, and cultural elements that are part of the urban global economy as it is constituted in cities and the increasingly structured networks of which they are a part? A topographic reading would introduce place yet, in the end, it would fail to capture the fact that global dynamics might inhabit localised built environments.

Analytic Borderlands

As a political economist, addressing these issues has meant working in several systems of representation and constructing spaces of intersection. There are analytic moments when two systems of representation intersect. Such analytic moments are easily experienced as spaces of silence or absence. One challenge is to see what happens in those spaces, what operations take place there. In my own work I have had to deal frequently with these spaces of intersection and conceive of them as analytic borderlands – an analytic terrain where discontinuities are constitutive rather than reduced to a dividing line. Thus, much of my work on economic globalisation and cities has focused on these discontinuities and has sought to reconstitute their articulation analytically as borderlands rather than as dividing lines.³

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2. The eviction of these activities and workers from the dominant representation of the global information economy has the effect of excluding the variety of cultural contexts within which they exist, a cultural diversity that is as much a presence in processes of globalisation as the new international corporate culture.
 3. This produces a terrain within which these discontinuities can be reconstituted in terms of economic operations whose properties are not merely a function of the spaces on each side (i.e., a reduction to the condition of dividing line) but also, and most centrally, of the discontinuity itself, the argument being that discontinuities are an integral part, a component, of the economic system.

Methodologically, the construction of these analytic borderlands pivots on what I call circuits for the distribution and installation of operations; I focus on circuits that cut across what are generally seen as two or more discontinuous 'systems', institutional orders, or dynamics. These circuits may be internal to a city's economy or be, perhaps at the other extreme, global. In the latter case, a given city is but one site on a circuit that may contain a few or many other such cities. And the operations that get distributed through these circuits can range widely – they can be economic, political, cultural, subjective.

Circuits internal to a city allow us to follow economic activities into territories that lie outside the increasingly narrow borders of mainstream representations of the urban economy and to negotiate the crossing of discontinuous spaces. For instance, it allows us to locate various components of the informal economy (whether in New York or Paris or Mumbai) on circuits that connect it to what are considered advanced industries, such as finance, design or fashion. A topographic representation would capture the enormous discontinuity between the places and built environments of the informal economy and those of the financial or design district in a city, but would fail to capture their complex economic interactions and dependencies.

International and transnational circuits allow us to detect the particular networks that connect specific activities in one city with specific activities in cities in other countries. For instance, if one focuses on futures markets, cities such as London and Frankfurt are joined by São Paulo and Kuala Lumpur; if one looks at the gold market, all except London drop out, and Zurich, Johannesburg and Sydney appear. Continuing along these lines, Los Angeles, for example, would appear as located on a variety of global circuits (including bi-national circuits with Mexico) which would be quite different from those of New York or Chicago. And a city like Caracas can be shown to be located on different circuits than those of Bogota.

This brings to the fore a second important issue. We can think of these cities or urban regions as crisscrossed by these circuits and as partial (only partial!) amalgamations of these various circuits. As I discuss later, some of the disadvantaged sectors in major cities today are also forming lateral cross-border connections with similarly placed groups in other cities. These are networks that while global do not run through a vertically organised framing as does, for instance, the network of affiliates of a multinational corporation or the country specific work of the IMF. For the city, these transnational circuits entail a type of fragmentation that may have always existed in major cities but has now been multiplied many times over. Topographic representations would fail to capture much of this spatialisation of global economic circuits, except, perhaps, for certain aspects of the distribution/transport routes.

Sited Materialities and Global Span

It seems to me that the difficulty analysts and commentators have had in specifying or understanding the impact of digitisation on cities results from two analytic flaws. One of these (especially evident in the U.S.) confines interpretation to a utilitarian reading of the technical capabilities of digital technology. This is fine for engineers, but when one is try-

ing to understand the impacts of a technology, such a reading becomes problematic.⁴ A purely technological reading of technical capabilities of digital systems inevitably leads one to a place that is a non-place, where we can announce with certainty the neutralising of many of the configurations marked by physicality and place-boundedness, including the urban.⁵

The second flaw is a continuing reliance on analytical categorisations that were developed under other spatial and historical conditions, that is, conditions preceding the current digital era. Thus the tendency is to conceive of the digital as simply and exclusively digital, and the non-digital (whether represented in terms of the physical/material or the actual, all problematic though common conceptions) as simply and exclusively that. These either/or categorisations filter out the possibility of mediating conditions, thereby precluding a more complex reading of the impact of digitisation on material and place-bound conditions.

One alternative categorisation captures imbrications.⁶ Let me illustrate using the case of finance. Finance is certainly a highly digitised activity; yet it cannot simply be thought of as exclusively digital. To have electronic financial markets and digitised financial instruments requires enormous amounts of material, not to mention people. This material includes conventional infrastructure, buildings, airports, and so on. Much of this material is, however, inflected by the digital. Conversely, much of what takes place in cyberspace is deeply inflected by the cultures, the material practices, the imaginaries, that take place outside cyberspace. Much, though not all, of what we think of when it comes to cyberspace would lack any meaning or referents if we were to exclude the world outside cyberspace. In brief, the digital and the non-digital are not exclusive conditions that stand outside each other. Digital space is

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4. An additional problematic issue is the construct itself of technology. One radical critique can be found in Latour and his dictum that technology is society 'made durable', see Bruno Latour, *Aramis or the Love of Technology*, trans. Catherine Porter, Cambridge, MA: Harvard University Press, 1996. My take on this construct in social science research is developed in Sassen, *Territory, Authority, Rights*, pp. 328-377. More generally, see Chrisanthi Avgerou, Robin Mansell, Danny Quah and Roger Silverston, *Oxford Handbook on Information & Communication Technologies*, Oxford: Oxford University Press, 2009.
 5. Another consequence of this type of reading is to assume that a new technology will *ipso facto* replace all older technologies that are less efficient or slower at executing the tasks the new technology is best at. We know that historically this is not the case. For a variety of critical examinations of the tendency towards technological determinism in much of the social sciences today see Judy Wajcman (ed.) 'Special Issue: Information Technologies and the Social Sciences', *Current Sociology* 50.3 (2002); for particular applications that make legible the limits of these technologies in social domains see, Jonathan Bach and David Stark, 'Recombinant Technology and New Geographies of Association', in Robert Latham and Saskia Sassen (eds.) *Digital Formations: IT and New Architectures in the Global Realm*, Princeton, NJ: Princeton University Press, 2005, pp. 37-53; Avgerou, Mansell, Quah and Silverston, *Oxford Handbook on Information & Communication Technologies*, 2009; for cities in particular see Stephen Graham (ed.) *Cybercities Reader*, London: Routledge, 2004.
 6. Sassen, *Territory, Authority, Rights*, pp. 328-398.

embedded in the larger societal, cultural, subjective, economic, imaginary structurations of lived experience and the systems within which we exist and operate.⁷

Rescaling the Old Hierarchies

The complex imbrications between the digital (as well as the global) and the non-digital brings with it a destabilising of older hierarchies of scale and often dramatic rescalings. As the national scale loses significance along with the loss of key components of the national state's formal authority over the national scale, other scales gain strategic importance. Most especially among these are sub-national scales such as the global city and supranational scales such as global markets or regional trading zones. There is by now a vast scholarship covering a range of dynamics and formations. Older hierarchies of scale that emerged in the historical context of the ascendance of the nation-state, continue to operate; they are typically organised in terms of institutional size – from the international, down to the national, the regional, the urban, down to the local. But they are destabilised because today's rescaling cuts across institutional size and, through policies such as deregulation and privatisation, also cuts across the institutional encasements of territory produced by the formation of national states.⁸ This does not mean that the old hierarchies disappear, but rather that rescalings emerge alongside the old ones, and that they can often trump the latter.

These transformations entail complex imbrications of the digital and non-digital and the global and the non-global. They can be captured in a variety of instances. For example, much of what we might still experience as the 'local' (an office building or a house or an institution right there in our neighbourhood or downtown) actually is something I would rather think of as a 'microenvironment with global span' insofar as it is deeply internetworked. Such a microenvironment is in many senses a localised entity, something that can be experienced as local, immediate, proximate and hence captured in topographic representations. It is a sited materiality, but it is also part of global digital networks that give it immediate far-flung span. To continue to think of this as simply local is not very useful or adequate. More importantly, the juxtaposition between the condition of being a sited materiality and having global span captures the imbrication of the digital and the non-digital and illustrates the inadequacy of a purely technological reading of the technical capacities associated with digitisation. A technological reading would lead us to posit the neutralisation of the place-boundedness of precisely that which makes possible the condition of being an entity with global span. And it illustrates the inadequacy of a purely topographical account.

A second example is the bundle of conditions and dynamics that marks the model of the global city. Just to single out one key dynamic: the more globalised and digitised the operations of firms and markets, the more their central management and coordination functions (and the requisite material structures) become strategic. It is precisely because of digitisation that simultaneous worldwide dispersal of operations (whether factories, offices, or service

7. A third variable we need to consider when addressing digital space and networks is the transformations in digital networks due to technical changes and the expanded use of these networks.

8. Saskia Sassen, 'The World's Third Spaces', *Open Democracy*, 2008; http://www.opendemocracy.net/article/globalisation/world_third_spaces

outlets) and system integration can be achieved. And it is precisely this combination that raises the importance of central functions. Global cities are strategic sites for the combination of resources necessary for the production of these central functions.⁹

Much of what is liquefied and circulates in digital networks and is marked by hypermobility remains physical in some of its components. Take, for example, the case of real estate. Financial services firms have invented instruments that liquefy real estate, thereby facilitating investment and circulation of these instruments in global markets. Yet, part of what constitutes real estate remains very physical. At the same time, however, that which remains physical has been transformed by the fact that it is represented by highly liquid instruments that can circulate in global markets. It may look the same, it may involve the same bricks and mortar, it may be new or old, but it is a transformed entity.

We have difficulty capturing this multi-valence through our conventional categories: if it is physical, it is physical; and if it is digital, it is digital. In fact, the partial representation of real estate through liquid financial instruments produces a complex imbrication of the material and the de-materialised moments of that which we continue to call real estate. And it is precisely because of the digital capabilities of the economic sectors represented in global cities that the massive concentrations of material resources in these cities exist and keep expanding.

Hypermobility and de-materialisation are usually seen as mere functions of the new technologies. This understanding erases the fact that it takes multiple material conditions to achieve this outcome, and that it takes social networks, not only digital ones. Once we recognise that the hypermobility of the instrument, or the de-materialisation of the actual piece of real estate, had to be produced, we introduce the imbrication of the digital and the non-digital. It takes capital fixity to produce capital mobility, that is to say, state of the art built-environments, conventional infrastructures – from highways to airports and railways – and well-housed talent. These are all, at least partly, place-bound conditions, even though the nature of their place-boundedness is going to be different from what it was 100 years ago, when place-boundedness was much closer to pure immobility. Today, it is a place-boundedness that is inflected, and inscribed by the hypermobility of some of its components, products, and outcomes. Both capital fixity and mobility are located in a temporal frame where speed is ascendant and consequential. This type of capital fixity cannot be fully captured in a description of its material and locational features, i.e. in a topographical reading.

9. These economic global city functions are to be distinguished from political global city functions, which might include the politics of contestation by formal and informal political actors enabled by these economic functions. This particular form of political global city functions is, then, in a dialectical relation, both enabled by and in opposition to the economic functions; see Sassen, *Territory, Authority, Rights*, pp. 328-377; Anne Bartlett, 'The City and the Self: The Emergence of New Political Subjects in London', in Saskia Sassen (ed.) *Deciphering the Global: Its Spaces, Scales and Subjects*, New York and London: Routledge, 2007, pp. 219-240; Joseph Gugler, *World Cities Beyond the West*, Cambridge, UK: Cambridge University Press, 2004.

Conceptualising digitisation and globalisation along these lines creates operational and rhetorical openings for recognising the ongoing importance of the material world even in the case of some of the most 'de-materialised' activities.¹⁰

The Spatialities of the Centre

Information technologies have not eliminated the importance of massive concentrations of material resources but have, rather, reconfigured the interaction of capital fixity and hyper-mobility. The complex management of this interaction has given some cities a new competitive advantage.¹¹ The vast new economic topography that is being implemented through electronic space is one moment, one fragment, of an even vaster economic chain that is in good part embedded in non-electronic spaces. There is today no fully virtualised firm or economic sector. As I suggested earlier, even finance, the most digitised, de-materialised and globalised of all activities has a topography that weaves back and forth between actual and digital space. To different extents in different types of sectors and different types of firms, a firm's tasks now are distributed across these two kinds of spaces. Further, the actual configurations are subject to considerable transformation, as tasks are computerised or standardised, markets are further globalised, and so on.

The combination of the new capabilities for mobility along with patterns of concentration and operational features of the cutting edge sectors of advanced economies suggests that spatial concentration remains as a key feature of these sectors. But it is not simply a continuation of older patterns of spatial concentration. Today, there is no longer a simple or straightforward relation between centrality and such geographic entities as the downtown or the central business district (CBD). In the past, and up to quite recently in fact, centrality was synonymous with the downtown or the CBD. The new technologies and organisational forms have altered the spatial correlates of centrality.¹²

Given the differential impacts of the capabilities of the new information technologies on specific types of firms and of sectors of the economy, the spatial correlates of the 'centre' can assume several geographic forms, likely to be operating simultaneously at the macro level. Thus the centre can be the CBD, as it still is largely for some of the leading sectors, notably finance, or an alternative form of CBD, such as Silicon Valley. Yet even as the CBD in major international business centres remains a strategic site for the leading industries, it is one profoundly reconfigured by technological and economic change and by long-term immigration.

10. A critical issue, not addressed here, concerns some of the features of digital networks, notably their governance. These networks are not neutral technical events (see also the issues raised in footnote 5 above).

11. Saskia Sassen, *The Global City: New York, London, Tokyo*, updated ed., Princeton, NJ: Princeton University Press, 2001.

12. Several of the organizing hypotheses in the global city model concern the conditions for the continuity of centrality in advanced economic systems in the face of major new organisational forms and technologies that maximise the possibility for geographic dispersal. See new introduction in the updated edition of Sassen, *The Global City: New York, London, Tokyo*.

Further, there are often sharp differences in the patterns assumed by this reconfiguring of the central city in different parts of the world.

Second, the centre can extend into a metropolitan areas in the form of a grid of nodes of intense business activity. One might ask whether a spatial organisation characterised by dense strategic nodes spread over a broader region does in fact constitute a new form of organising the territory of the 'centre', rather than, as in the more conventional view, an instance of sub-urbanisation or geographic dispersal. Insofar as these various nodes are articulated through digital networks, they represent a new geographic correlate of the most advanced type of 'centre'. This is a partly deterritorialised space of centrality.

Third, we are seeing the formation of a transterritorial 'centre' constituted via intense economic transactions in the network of global cities. These transactions take place partly in digital space and partly through conventional transport and travel. The result is a multiplication of often highly specialised circuits connecting sets of cities;¹³ increasingly we see other types of networks built on those circuits, such as transnational migrant networks.¹⁴ These networks of major international business centres constitute new geographies of centrality. The most powerful of these new geographies of centrality at the global level binds the major international financial and business centres: New York, London, Tokyo, Paris, Frankfurt, Zurich, Amsterdam, Los Angeles, Sydney, Hong Kong, among others. But this geography now also includes cities such as Bangkok, Seoul, Taipei, São Paulo, Mexico City, Shanghai. In the case of a complex landscape such as Europe's, we see in fact several geographies of centrality, one global, others continental and regional.

Fourth, new forms of centrality are being constituted in electronically generated spaces. For instance, strategic components of the financial industry operate in such spaces. The relation between digital and actual space is complex and varies among different types of economic sectors, as well as within civil society sectors.

What Does Local Context Mean in this Setting?

Firms operating partly in actual space and partly in globe-spanning digital space cannot easily be contextualised in terms of their surroundings. Nor can the networked sub-economies they tend to constitute. The orientation of this type of sub-economy is simultaneously towards itself and towards a larger global market. Topographic representations would fail to capture this global orientation.

The intensity of transactions internal to such a sub-economy (whether global finance or cutting edge high-tech sectors) is such that it overrides all considerations of the broader locality or urban area within which it exists. These firms and sub-economies develop a stronger

13. Peter Taylor, *World City Network: A Global Urban Analysis*, London: Routledge, 2004; Rachel Harvey, 'The Sub-National Constitution of Global Markets', in Sassen (ed.) *Deciphering the Global: Its Spaces, Scales and Subjects*, pp. 199-216.

14. Barbara Ehrenreich and Arlie Hochschild (eds.) *Global Woman*, New York: Metropolitan Books, 2003.

orientation towards global markets than to their immediately surrounding areas. Insofar as they are a significant component of today's cities, this global orientation overrides a key proposition in the urban systems literature, to wit, that cities and urban systems integrate and articulate national territory. Such an integration effect may have been the case during the period when mass manufacturing and mass consumption were the dominant growth machines in developed economies and thrived on national scalings of economic processes. Today, the ascendance of digitised, globalised sectors, such as finance, has diluted that articulation with the larger national economy and the immediate surrounding.

The articulation of these sub-economies with other zones and sectors in their immediate socio-spatial surroundings is of a special sort. To some extent, there is connectivity, but it is largely confined to the servicing of the leading sectors and, further, this connectivity is partly obscured by topographic fragmentation in the case of much of this servicing. The most legible articulation is with the various highly priced services that cater to the workforce, from up-scale restaurants and hotels to luxury shops and cultural institutions, typically part of the socio-spatial order of these new sub-economies. Secondly, there are also various low-priced services that cater to the firms and to the households of the workers and which rarely 'look' like they are part of the advanced corporate economy. The demand by firms and households for these services actually links two worlds that we think of as radically distinct and thus unconnected. But it is particularly a third instance that concerns me here, the large portions of the urban surrounding that have little connection to these world-market oriented sub-economies, even though they are physically proximate and might even be architecturally similar. It is the last two that engender a question about the insufficiency of topographic representation.

What then is the meaning of locality under these conditions? The new networked sub-economy occupies a strategic, partly deterritorialised geography that cuts across borders and connects a variety of points on the globe. Its local insertion accounts for only a (variable) fraction of its total operations, its boundaries are not those of the city within which it is partly located, nor those of the local area where it is sited. This sub-economy interfaces the intensity of the vast concentration of very material resources it needs when it hits the ground and the fact of its global span or cross-border geography. Its interlocutor is not the surrounding context but the fact of the global.

I am not sure what this tearing away of the context and its replacement with the fact of the global could mean for urban practice and theory, but it is clearly problematic from the perspective of urban topography. The analytic operation called for is not the search for its connection with the 'surroundings', the context. It is, rather, detecting its installation in a strategic cross-border geography constituted through multiple 'locals'. The local now transacts directly with the global – cross-border structurations that scale at a global level – but the global also inhabits localities and is partly constituted through a multiplicity of local instantiations.

Cities as Frontier Zones: The Formation of New Political Actors

A very different type of case can be found in the growth of electronic activism by often poor and rather immobile actors and organisations. Topographic representations that describe fragmentations, particularly the isolation of poor areas, may well obscure the existence of underlying interconnections. What presents itself as segregated or excluded from the main-

stream core of a city can actually be part of increasingly complex interactions with other similarly segregated sectors in cities of other countries. There is here, an interesting dynamic where top sectors (the new transnational professional class) and bottom sectors (e.g. immigrant communities or activists in environmental or anti-globalisation struggles) partly inhabit a cross-border space that connects particular cities.

Major cities, especially if global, contain multiple low-income communities many of which develop or access various global networks. Through the Internet, local initiatives become part of a global network of activism without losing the focus on specific local struggles. It enables a new type of cross-border political activism, one centred in multiple localities yet intensely connected digitally. This is in my view one of the key forms of critical politics that the Internet can make possible: a politics of the local with a big difference – these are localities that are connected with each other across a region, a country or the world.¹⁵ Because the network is global does not mean that it all has to happen at the global level.

But also inside such cities we see the emergence of specific political and subjective dimensions that are difficult to capture through topographic representations. Neither the emergence nor the difficulty are new. But I would argue that there are times where both become sharper – times when traditional arrangements become unsettled. Today is such a time. Global cities become a sort of new frontier zone where an enormous mix of people converge and new forms of politics are possible. Those who lack power, those who are disadvantaged, outsiders, discriminated minorities, can gain presence in global cities, presence vis-à-vis power and presence vis-à-vis each other. This signals, for me, the possibility of a new type of politics centred in new types of political actors. It is not simply a matter of having or not having power. There are new hybrid bases from which to act.

The space of the city is a far more concrete space for politics than that of the nation.¹⁶ It becomes a place where non-formal political actors can be part of the political scene in a way that is much more difficult at the national level. Nationally, politics needs to run through existing formal systems: whether the electoral political system or the judiciary (taking state agencies to court). Non-formal political actors are rendered invisible in the space of national politics. The space of the city accommodates a broad range of political activities – squatting, demonstrations against police brutality, fighting for the rights of immigrants and the homeless, the politics of culture and identity, gay and lesbian and queer politics. Much of this be-

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15. I conceptualise these 'alternative' circuits as countergeographies of globalisation because they are deeply imbricated with some of the major dynamics constitutive of the global economy yet are not part of the formal apparatus or of the objectives of this apparatus. The formation of global markets, the intensifying of transnational and trans-local business networks, the development of communication technologies which easily escape conventional surveillance practices – all of these produce infrastructures and architectures that can be used for other purposes, whether money laundering or alternative politics, see Sassen, *Territory, Authority, Rights*, pp. 378-398.
16. There are also extreme types of instances, such as the urbanising of war when a conventional army fights an armed insurgency. See Saskia Sassen, 'Cities and New Wars: After Mumbai', *Open Democracy*, 2008; <http://www.opendemocracy.net/article/the-new-wars-and-cities-after-mumbai-0> and the upcoming special section on Gaza in *Theory, Culture and Society*.

comes visible on the street. Much of urban politics is concrete, enacted by people rather than dependent on massive media technologies. Street level politics makes possible the formation of new types of political subjects that do not have to go through the formal political system.

The large city of today, especially the global city, emerges as a strategic site for these new types of operations. It is a strategic site for global corporate capital. But it is also one of the sites where the formation of new claims by informal political actors materializes and assumes concrete forms. The loss of power at the national level produces the possibility for new forms of power and politics at the subnational level.¹⁷ The national as container of social process and power is cracked. This 'cracked casing' then opens up possibilities for a geography of politics that links subnational spaces and allows non-formal political actors to engage strategic components of global capital.

Digital networks are contributing to the production of new kinds of interconnections underlying what appear as fragmented topographies, whether at the global or at the local level. Political activists can use digital networks for global or non-local transactions and they can use them for strengthening local communications and transactions inside a city or rural community. Recovering how the new digital technology can serve to support local initiatives and alliances across a city's neighbourhoods is extremely important in an age where the notion of the local is often seen as losing ground to global dynamics and actors and digital networks are typically thought of as global. What may appear as separate segregated sectors of a city may well have increasingly strong interconnections through particular networks of individuals and organisations with shared interests. Any large city is today traversed by these 'invisible' circuits.

Conclusion

Economic globalisation and digitisation produces a spatiality for the urban that pivots on de-territorialised cross-border networks and territorial locations with massive concentrations of resources. This is not a completely new feature. Over the centuries cities have been at the intersection of processes with supra-urban and even intercontinental scalings. What is different today is the intensity, complexity, and global span of these networks, and the extent to which significant portions of economies are now digitised and hence can travel at great speeds through these networks. Also new is the growing use of digital networks by often poor neighbourhood organisations to pursue a variety of both intra- and inter-urban political initiatives. All of this has raised the number of cities that are part of cross-border networks operating at often vast geographic scales. Under these conditions, much of what we experience and represent as the local turns out to be a microenvironment with global span.

As cities and urban regions are increasingly traversed by non-local, including notably global circuits, much of what we experience as the local because locally sited, is actually a transformed condition in that it is imbricated with non-local dynamics or is a localisation of global processes.

One way of thinking about this is in terms of spatialisations of various projects – economic, political, cultural. This produces a specific set of interactions in a city's relation to its topography.

The new urban spatiality thus produced is partial in a double sense: it accounts for only part of what happens in cities and what cities are about, and it inhabits only part of what we might think of as the space of the city, whether this be understood in terms as diverse as those of a city's administrative boundaries or in the sense of the multiple public imaginaries that may be present in different sectors of a city's people. If we consider urban space as productive, as enabling new configurations, then these developments signal multiple possibilities.

17. There are, of course, severe limitations on these possibilities, many having to do with the way in which these technologies have come to be deployed. In Latham and Sassen (eds.) *Digital Formations*, pp. 1-34.



Fig. 1: *Salt*, by Hilary Koob-Sassen (www.TheErrorists.com), first shown at the Solomon R. Guggenheim Museum, 'When Territory and Time Seap out of the Old Cages...' Time Marathon, New York, Jan 6, 2009.

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ACKNOWLEDGEMENTS

Image courtesy of Hilary Koob-Sassen.

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MOBILITY, COSMOPOLITANISM AND PUBLIC SPACE IN THE MEDIA CITY

SCOTT MCQUIRE



Fig. 1: Members of the public turning their backs on the live image of Opposition Leader Brendan Nelson.



Fig. 2: Crowd gathered at Federation Square, Melbourne watching a live telecast of Prime Minister Rudd's speech during the National Apology to the Stolen Generations, Parliament House, Canberra, 13 Feb. 2008.

From Television Sets to Public Screens

For the first few decades of its existence, debates around television generally concerned its integration – or lack of integration – into the family home. Television was a distinct household object; an item of furniture as well as a media platform, and the domestic sphere was its primary scene of consumption. This entailed a whole series of consequences for private life, but also for the structure of public culture, as television increasingly became the key manifestation of the public sphere.¹

Around the mid-1970s, a number of things began to change. One trajectory was the beginning of cable networks and the growth of satellite transmission.² These developments initiated the erosion of the broadcast paradigm dominant since the 1950s, in which large audiences watched programming controlled by relatively few broadcasters operating primarily on a city-wide or re-

1. On the impact of television on the private home, see Lynn Spigel, *Make Room for TV: Television and the Family Ideal in Postwar America*, Chicago: University of Chicago Press, 1992. On the relation of television to the public sphere see, for instance, Alexander Kluge and Oskar Negt, 'The Public Sphere and Experience', trans. Peter Labanyi, *October* 46 (1988): 60-82. For an expanded discussion of this dynamic, see Scott McQuire, *The Media City: Media, Architecture and Urban Space*, London: Sage, 2008.
2. For a useful history of the rollout of cable and satellite in the US, see Michele Hilmes, 'Cable, Satellite And Digital Technologies', in Dan Harries (ed.) *The New Media Book*, London: BFI, 2002, pp. 3-16.

gional scales. What began to emerge, unevenly and with different levels of concentration and intensity, was the current proliferation of channels operating on national and global scales.

A second significant shift was the migration of TV screens from the home into the street. If this shift was initially less discernible and received far less critical attention, this situation began to change in the mid-1990s. Public screens – or rather large screens situated in public space – are proliferating in cities all over the world. How should we understand the emergence of the electronic screen from the domestic interior onto the streetscape of contemporary cities? What are the implications of the merging of screens with architecture, which turns the surface of buildings into an active communication resource? How will the overlap between streetscape and datascape shape public space in the future?

Of Lightbulbs and LEDs

The large screens that emerged in the mid-70s were not the same as those proliferating now.³ The landmark Spectacolour Board, erected on the old New York Times building at One Times Square in 1976, was really a programmable electronic sign. It used an array of krypton incandescent bulbs to produce what now seem to be fairly rudimentary monocolour graphics. Its key innovation over existing signage was its capacity to display variable content – to use a sign as a broadcast medium, as signage pioneer George Stobely put it.⁴ The new medium attracted keen interest from a range of advertisers, and was also exploited by artists such as Jenny Holzer, who famously used the Times Square screen (among others) to display text-based works from her iconic 'Truisms' series in the mid-1980s.

A second significant threshold in large-screen technology was crossed in the mid-1980s with the release of Sony's JumboTron and Mitsubishi's Diamond Vision. Instead of incandescent light bulbs these screens used a matrix of small Cathode Ray Tube (CRT) displays. An outdoor JumboTron measuring a massive 25 x 40 metres was exhibited at Expo 85 near Tokyo in 1985. While this type of screen was extremely expensive to purchase and to operate, the capacity to display full colour video at much better resolution meant that they soon began to find a home at premium sporting venues, as well as high-visibility central city locations. In 1986, the first large screen was erected at the famous Hachik Crossing in Tokyo's Shibuya.

The third major threshold, which is driving the recent rapid expansion of large screens, was the maturation of LED (light emitting diode) technology as a video display format in the late 1990s. While LED screens are still relatively expensive, they have significantly lower operating and maintenance costs, are more versatile in terms of daylight display, and more flexible in terms of integration into built structures. LED screens now dominate many famous streetscapes such as Manhattan's Times Square, where they feature on landmark buildings such as Disney's Times Square Studios (1999) used by its ABC Television network, and Nasdaq's MarketSite building at the northwest corner of Four Times Square (2000), with its patented curved wall display system utilising nearly 19 million LEDs each with its own electric feed.

3. On the technology of contemporary large screens, see Cubitt in this volume.

4. Quoted in Christopher Gray, 'Streetscapes/George Stobely: A Times Square Signmaker Who Loves Spectacle', *New York Times*, January 30, 2000.

LED technology also underpins a range of new products such as the 'media facade' system developed by German-based company ag4 mediatecture, which enables entire buildings to be clad in a surface that remains relatively transparent to occupants looking outside, but supports large-scale video images when seen from the street. The explosion of LED screens has propelled architecture towards a new role as what Paul Virilio aptly terms 'media buildings': structures with the primary function of providing information rather than habitation.⁵

The Media City

The proliferation of public screens and 'media buildings' over the last decade has become one of the most visible signs of contemporary urbanism. It is symptomatic of the emergence of what I call the media city. This phrase is intended to suggest two related developments.

First, that the spaces and rhythms of contemporary cities are radically different to those described in classical theories of urbanism. The physical scale of contemporary cities, the distribution and heterogeneity of their populations, and the forms and speeds of circulation that characterise urban life, all depart from previous models. The new dynamics of social life have destabilised traditional urban hierarchies, ushering in a period of great uncertainty concerning the city's function as a symbolic centre. This loss of centrality has led to a proliferation of neologisms such as Ed Soja's *exopolis* to describe a new paradigm.⁶ Rem Koolhaas is blunter, describing contemporary urbanism as 'junk space' in which spatial hierarchy is replaced with 'accumulation, composition with addition'.⁷

Second, as much as cities have changed, so have media. Where the mid-twentieth century saw a shift from the centralised distribution of material objects such as newspapers and film reels to the centralised distribution of electronic information such as radio and TV broadcasts, the last twenty years has been characterised by the increasing emergence of the decentralised forms of distribution enabled by digital networks. Of course, this has not been a linear succession, and all these modes or platforms co-exist in the present. Newspapers are still trucked around cities, bulky film reels are still air-freighted from Los Angeles or other production centres, and analog TV is still far and away the most popular media platform attracting the lion's share of advertising revenue. Nevertheless, digital media is clearly ascendant, not only because it is the fastest growing sector, but because the logic of the digital is remaking all older media industries from publishing to telecommunications.

As media become mobile, pervasive and instantaneous, the contemporary city becomes a *media-architecture complex*. This is manifested by the proliferation of spatialised media platforms – what the industry calls 'place-based' media such as public screens – as well as the production of hybrid spatial ensembles, such as the novel forms of co-presence generated by wireless mobile devices. While I would argue this process has been underway at least since the development of technological images in the context of urban 'modernisation' in the mid-

5. Cited in Gianni Ranaolo, *Light Architecture: New Edge City*, Basel and Boston, MA: Birkhäuser, 2001, p. 7.

6. Edward Soja, *Postmetropolis*, Oxford: Blackwell, 2000.

7. Rem Koolhaas, *AMOMA*, Köln: Taschen, 2004, p. 163.

nineteenth century, its full implications are only coming to the fore with the extension of digital networks. In this respect, the description media city is designed to foreground the way that our experience of space in contemporary social life now emerges through a complex process of co-constitution between architectural structures and urban territories, social practices and media feedback. The convergence of ubiquitous 'real time' media with urban space has become a constitutive frame for a distinctive mode of social experience, a new way of binding, in Henri Lefebvre's terms, cognition and affect to space.⁸ Mediated forms of perception and agency alter customary relations of presence and absence. By generating new capacities to act-at-a-distance, they reconstruct contemporary social life along the lines of what Scott Lash describes as 'sociality at-a-distance'.⁹ They generate what I call 'relational space'.

Relational Space

Of course, there is a sense in which *spacing* – setting things apart in space – always implies relation. However, by relational space I am pointing to a specific spatial paradigm that has become dominant in the present phase of globalisation marked by the growing prominence of digital networks. Relational space emerges in the nexus of two trajectories. First, it pertains to a social context in which social relations are no longer 'given', are no longer adopted 'naturally' on the basis of tradition and *habitus*, but instead have to be *actively constructed* in the absence of what Bauman calls 'pre-allocated reference groups'.¹⁰ This condition is not new, but is integral to the dynamic of modernisation, as the spread of capitalism has liquidated older social structures and forms of collective identity. However, the intensity and the reach of this process, particularly its penetration into the zones which were formerly 'private' such as familial and intimate relationships, is relatively recent. Second, the conduct of social relationships increasingly occurs across radically heterogeneous spatio-temporal dimensions and speeds. Face-to-face encounters in relatively localised sites such as workplaces and neighbourhoods are routinely punctuated by ongoing interactions sustained by complex technological systems, such as transport networks and communication media.

A key effect of this collision of scales and speeds is that particular sites and social situations have increasingly been stripped of inherent qualities, such as stable dimensions, enduring appearances and secure meanings. The enclosure of a room, the relation between the inside and outside of a building, the dimensions of the local, the boundaries of a city, the borders of a nation-state, have all become increasingly contested and susceptible to new forms of mobility and traversal. However, this volatility does not mean that time and space have simply 'disappeared'. Proclamations concerning the 'annihilation of time and space' have been regularly announced throughout modernity in conjunction with the deployment of new transport and media technologies. As social historian Wolfgang Schivelbusch reminds us, this rhetoric was in fact launched with the expansion of railways

8. Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith, Oxford: Blackwell, 1991.

9. Scott Lash, *Critique of Information*, London: Sage, 2002.

10. Zygmund Bauman, *Liquid Modernity*, Cambridge, MA: Polity Press, 2000.

in the 1830s.¹¹ Its most recent version were the expansive claims made by those such as Frances Cairncross and Bill Gates about the capacity of the Internet to render space and time irrelevant.¹²

A fundamental problem with this rhetoric of annihilation – whether it's utopic like Bill Gates asking 'where do you want to go today?' or dystopic like Paul Virilio's prognosis of the profound *exhaustion* of time and space by media¹³ – is that it treats technology as an autonomous cause and social change as a mere effect. A corollary is that this stance tends to obscure the diversity of emergent social practices. Abandoning the temptation to declare, yet again, that (in Marinetti's words) 'time and space died yesterday' allows more scope to map the new, emergent social relations constructed and sustained in the context of the meshing of media space and physical space.

'Relational space' names the spatial experience of the current conjuncture in which the pre-given nature of social space and the taken-for-granted contours of subjectivity have been increasingly withdrawn, and instead we face the demand to actively construct social space in the context of new patterns of mobility and the heightened role of individual life choices. The increasing importance of complex technological systems such as digital networks to sustaining basic social relationships is a symptom of 'sociality-at-a-distance' but is also a driver of this condition. This lays a particular imperative on *situated* analysis. If, on the one hand, the uniqueness of particular sites and events does not disappear, it is clear that all sites are increasingly drawn into global systems of communication and exchange, and thus rendered susceptible to rapid recalibration. If the 'situation' (in Guy Debord's sense) was never simply defined by local dynamics or face-to-face interactions, but assumed the abstract geographies of capitalist exchange and colonial power, it must also now include the 'real time' dynamics of global media flows as an integral part of its domain.

Since relational space cannot be defined by essential attributes or inherent and stable qualities, it assumes significance primarily through the interconnections established between different nodes and sectors. Such interconnections are characterised above all by their variability and impermanence. While certain connections may endure over time or even assume a sense of relative permanence, the general context is one of growing susceptibility to rapid and volatile realignments. As a result, space – manifested in the distance between geographical regions, but also in terms of the demarcation of social boundaries and zones of ambiance – assumes a new sense of volatility and impermanence. Given the extent to which forms of social agency can now be abruptly redefined by the switching of a network, the installation of an interface, or the activation of a circuit, the social meaning of space becomes increasingly open to the force and potential of a generalised *elsewhere*.

11. Wolfgang Schivelbusch, *The Railway Journey: The Industrialization of Time and Space in the Nineteenth Century*, trans. Angela Davis, Berkeley: University of California Press, 1986.

12. Bill Gates, *Business @ the Speed of Thought: Using a Digital Nervous System*, Ringwood, VIC: Viking, 1999; Frances Cairncross, *The Death of Distance: How the Communications Revolution is Changing Our Lives*, Boston: Harvard Business School Press, 1997.

13. Paul Virilio, *Open Sky*, trans. Julie Rose, New York: Verso, 1997.

What I call the media city achieves critical mass once relational space begins to emerge as a cultural dominant. Such a 'moment' is marked by ambivalence. On the one hand, it offers new potential to reconstruct social relationships beyond the traditional constraints of geography and propinquity. On the other hand, these possibilities actively undermine the 'ground' on which older modes of social association have been sustained. This tension asks us to pay particular attention to different, but equally strategic issues. At one level is the question of uneven access to media networks, stratified at urban, regional, national and global scales. As Sassen points out, this is not a simple issue of availability and unavailability, but requires close empirical analysis as even limited networks enable otherwise disempowered actors to enter the realm of transnational politics in strategic ways.¹⁴ A related question is how digital networks might contribute to the invention of forms of social collectivity outside the neo-liberal strictures of hyper-individualism and the polarities of national imaginaries. It is clear that the 'freedom' of the network society that emerged in the context of neo-liberal policy settings in the 1990s offers some people heightened choice in constructing what Ulrich Beck terms a 'DIY biography'. However, even for these admitted to this privilege, the rampant individualism which defines the 'good life' primarily through fantasies of unlimited private consumption, is shadowed by growing alienation and disaffection, measured partly in the functional role the 'flexible personality' assumes in contemporary global capitalism.¹⁵

Flexible Cities

At least since Antonio Sant'Elia's manifesto of futurist architecture, published on the cusp of the First World War, *avant-garde* architects have been dreaming of cities that would accommodate new forms of speed and mobility. These dreams took a distinct turn in the 1960s, as the production of flexible living spaces was increasingly seen in terms of the merging of modernist principles of modular construction with new media such as computers. It's instructive to look back at the philosophy underpinning proposals by those such as Yona Friedman, Constant, and groups like Archigram in the UK and Nicholas Negroponte's Machine Architecture group based at the Massachusetts Institute of Technology (which later morphed into the Media Lab) in the US. While they had diverse aims and political ambitions, they were united by an optimistic view of technology, seeing not only the possibility for liberation from economic scarcity and repetitious labour, but – and this is the key point at which those such as Friedman and Constant meet those such as Archigram and Negroponte – envisioning the emergence of what we today call 'user-generated content'. Instead of the architect functioning as a master planner for determining the optimum living environment, a significant part of this role was to be reallocated to the inhabitants themselves.

For example, in Friedman's famed 'spatial city', the overstructure is a skeleton 'to be filled in as desired'. According to his mobile city manifesto of 1958:

Constructions should be variable and interchangeable.

The spatial units produced by these constructions should likewise be alterable and

14. Saskia Sassen, *Territory, Authority, Rights: From Medieval to Global Assemblages*, Princeton, NJ: Princeton University Press, 2006.

15. Brian Holmes, *Unleashing the Collective Phantoms: Essays on Reverse Imagineering*, Brooklyn, NY: Autonomedia, 2008.

interchangeable in their use.

The inhabitants must be given the opportunity to adapt their dwellings themselves to the needs of the moment.¹⁶

Similarly, Constant's 'New Babylon' project (1958-70) was premised on the technological elimination of labour, and the shift to a society in which *homo ludens* displaced *homo faber*. For *homo ludens*, space is 'a toy rather than a tool. And as such he wants it to be as mobile and variable as possible'.¹⁷ In keeping with Debord's precept that 'the situation is made to be lived by its constructors', Constant's plans never developed a high level of specific detail.¹⁸ Like Friedman's spatial city, the designs for New Babylon could not be prescriptive because the spaces were to be built and inhabited by New Babylonians themselves.

New Babylonians play a game of their own devising, against a backdrop they have designed themselves, together with their fellow townspeople. That is their life, therein lies their artistry.¹⁹

Where Friedman and Constant were largely content to treat the automation of machine production as an established social fact against which new forms of creative urban life would emerge, Archigram and Negroponte explicitly foregrounded the potential for computer networks to reconfigure urban space. Archigram projects such as 'Plug-in city', 'Computer city', and 'Instant city' all challenged the heroic modernism of Mies, Gropius and Le Corbusier in the name of individual customisation. By coupling the standardisation inherent in mass production to the new possibilities for decentralised control enabled by computers, Archigram proposed a more consumer-oriented model of modernism. For instance, 'Control and Choice' (1968) downgraded the architect's central role in building design in favour of user-directed feedback:

The determination of your environment need no longer be left in the hands of the designer of the building: it can be turned over to you yourself. You turn the switches and choose the conditions to sustain you at that point in time.²⁰

While Archigram's proposals remained largely speculative, a more practical approach to computer design was being hatched at MIT. Nicholas Negroponte's concept of the 'archi-

16. Yona Friedman, 'Mobile Architecture' [1958], in Ulrich Conrads (ed.) *Programs and Manifestoes on 20th Century Architecture*, trans. Michael Bullock, Cambridge, MA: MIT Press, 1971, p. 168.

17. Constant, 'The Principle of Disorientation' [1973], in Mark Wigley, *Constant's New Babylon: The Hyper-Architecture of Desire*, Rotterdam: Witte de With, Centre for Contemporary Art, 1998, p. 225.

18. Guy Debord, 'Report on the Construction of Situations and on the International Situationist Tendency's Conditions of Organization and Action', in Ken Knabb (ed.) *Situationist International Anthology*, trans. Ken Knabb, Berkeley: Bureau of Public Secrets, 1981, p. 25.

19. Constant, 'Unitary Urbanism' [1960], in Mark Wigley (ed.) *Constant's New Babylon: The Hyper-Architecture of Desire*, Rotterdam: Witte de With, Centre for Contemporary Art, 1998.

20. Archigram, 'Control and Choice' [1968], in Peter Cook and Michael Webb (eds.) *Archigram*, New York: Princeton Architectural Press, 1999, p. 68.

texture machine', first proposed in the mid-1960s, was predicated on the development of intelligent machines capable of entering into dialogue with its human partners. In contrast to contemporaries such as Lewis Mumford who decried the machine's 'denatured language', Negroponte took a counter-intuitive position. Looking beyond the hierarchical relationships enforced by existing mainframe computers, Negroponte argued that it was only through machine intelligence that the sort of social problems caused by the generalist orientation of modern architecture and urbanism could be addressed:

[A]n environmental humanism might only be possible in co-operation with machines ... that can respond intelligently to the tiny, individual constantly changing bits of information that reflect on the identity of each urbanite as well as the coherence of the city.²¹

While Negroponte was keenly aware of the emergence of the first CAD systems in the early 1970s, he evinced little enthusiasm for the computer's ability to 'liberate architects from the parallel rule'. In *Soft Architecture Machine* (1975), what interests him is not the opportunity to design 'globular, glandular freeform habitats', but rather the computer's capacity – or lack of capacity – for dialogue and co-evolutionary learning.²²

In retrospect, it seems ironic that the networking potential of computers was extolled by those such as Archigram and Negroponte during an era when it barely existed. However, by the time that computer networks were actually becoming more widespread with the mainstreaming of the Internet from the 1980s and the development of the World Wide Web in the 1990s, architecture seemed to largely lose interest in networked communication. In place of earlier ambitions for user-configured design was a new fascination with sophisticated computer graphics and cinema-like 'fly-throughs'. Throughout the 1990s, 'digital architecture' became virtually synonymous with precisely the sort of 'globular, glandular, freeform' design Negroponte had disdained in the 1970s. The pinup example is undoubtedly Frank Gehry's Guggenheim Museum at Bilbao that began construction in 1993 and opened to global acclaim in 1997. Gehry never considers the computer's capacity for distributed communication, but extols it solely as a tool of architectural mastery capable of solving complex design problems such as drawing double-curved shapes:

In struggling to figure out how to represent these shapes and to demystify them so that you could build them, we hit a gold mine. Because you could all of a sudden take these shapes and explain them to a builder in a way that didn't frighten them ... It puts the architect back as master builder.²³

Rather than decentering the architect by shifting power to the user (as Friedman, Constant and Archigram envisaged) or to the machine as design collaborator (as Negroponte advocated), Gehry celebrates computer technology precisely because it puts the architect back in control. By enabling the translation of visionary ideas into visual forms which will not frighten

21. Nicholas Negroponte, *The Architecture Machine: Toward a More Human Environment*, Cambridge, MA: MIT Press, 1970, p. 3.

22. Nicholas Negroponte, *Soft Architecture Machines*, Cambridge, MA: MIT Press, 1975.

23. Quoted in Donald Garfield, 'The Next Thing Now, Designing the 21st Century Museum', *Museum News* 75 (1996): 42.

the supposedly less visionary (such as builders), Gehry positions the computer as the strategic lever capable of reversing the century long ascendancy of the engineer, first signaled by Eiffel's tower produced for the Paris Universal Exposition in 1889.

Criticisms of Gehry's Bilbao Guggenheim by former Archigram members reveal the gulf between their proposals for a 'computer city' in the 1960s and the ambitions that dominated 1990s digital architecture. Michael Webb argued:

[W]hereas Archigram tried to make what is essentially an inert object, a building, into something fluid, the formal evolution of a contemporary building such as the Guggenheim at Bilbao is the result of the fluid process arrested to create an inert object.²⁴

David Greene was even more biting:

Despite its contorted form, it does not engage time in the way that a rock spectacle does so effectively. The container yard beside the museum is a better example of late twentieth century architecture.²⁵

The work of Friedman, Constant, Archigram and Negroponte provides a useful frame for thinking about the role of various media platforms in establishing distinct ambiances and modes of agency in contemporary public space. In place of cities and spaces designed 'from above' by experts such as urban planners, their mutual emphasis on user-configured space focuses critical thought on the city as a dynamic process – what Tschumi describes as an 'event-city' – involving complex and unpredictable human interactions as much as deliberately designed physical structures and built forms.²⁶

If, as Lefebvre reminds us, all space is *social* space, the role of the urban designer can only ever be one part of the equation in the construction of public space. However, the general repression of the role of the 'user' in the name of the rational planning that dominated much of the twentieth century means its recent rediscovery (in art and media, as much as in urbanism), is hailed not only as a novelty, but most often as a property of individual choice. Moreover, while the networking of urban space clearly offers new possibilities for 'users' – heterogeneous and mobile publics – to redefine lines of communication and power, the extent to which this will facilitate *cosmopolitan* social interactions depends on addressing other trajectories associated with the growing interpenetration of media and urban space.

Spectacle and Surveillance

While Archigram and Negroponte premise the new architectural paradigm on ubiquitous computing, their focus on the individual as the basic social unit – and their lack of focus on questions of power – meant their programs were easily absorbed into the rising tide of

24. Quoted in Peter Cook and Michael Webb (eds.) *Archigram*, New York: Princeton Architectural Press, 1999, p. 3.

25. David Greene, 'The Ice Man', in Eric Holding (ed.) *Mark Fisher – Staged Architecture*, London: Wiley-Academy, 1999, p. 9.

26. Bernard Tschumi, *The Manhattan Transcripts*, London: Academy Editions; New York: St. Martin's Press, 1981.

consumerism characterising post-industrial society. Constant was a vehement critic of consumerism, but his vision of social change was flawed by his largely uncritical belief in the positive and determining potential of technological development. In fact, far from leading to the rejuvenation of public culture, the extension of technological automation into a consolidated techno-culture since the 1960s has led many to question the future of public space. A whole string of influential urbanists and sociologists from Jane Jacobs and Jürgen Habermas to Marshall Berman, Richard Sennett and Paul Virilio have argued that the public culture characteristic of an earlier period of modernism has been displaced by a retreat to the more private culture of suburbia. If this has been partly a result of the corrosive effect of the automobile on the older public spaces of the city, it has also been compounded by the rise of television as the premier institution of the public sphere. Once television became the key conduit between public and private life, enabling new forms of vicarious participation in public events, it also confirmed a new level of withdrawal from actual public encounters.

It was Constant's sometime collaborator Debord who proposed arguably the most influential analysis of the decline of public space in terms of his theory of spectacular society. For Debord, spectacle is not simply about the invention of new forms of imagery, but about the extent to which social relationships are subjugated by commodity logic.²⁷ The flipside of extended commodification is increased passivity, as social interactions are channelled into predictable and potentially profitable forms. The conversion of practices such as bargaining, which once entailed mutual interaction between buyer and seller, to the constrained uniformity of the fixed-price department store – or later the shopping mall, which swallows the social space of the street itself and reproduces it as a highly surveilled, intensely commodified, pseudo-public space – stand as key indices of this shift.

Debord's analysis offers an instructive matrix for thinking through the implications of the growing interpenetration of media and urban space. One index of this process has been the increasing prominence of advertising in public space. Since the early twentieth century, cities have been the site for the intensive development of new forms of display concerned with commodity exchange: billboards, illuminated and electric signage, display windows, and floodlit corporate buildings, all coalesced into the *brandscape* of contemporary cities. The emergence of large-screens in the mid-1970s fitted this trajectory in which public space became the backdrop for increasingly strident commercial appeals.

If spectacle is one key index of the media city, its flipside is the rise of technological surveillance. It has often been noted that the rise of digital networks facilitates the extension of surveillance down to the micro-levels of urban space. In this respect, we might position Jane Jacobs' (1961) famous advocacy of New York's village model of mutual community supervision of the street as the last hurrah of an older order of urban public space.²⁸ As public space has been increasingly treated as a *problem* requiring strategic management, digital technologies have been invested with a heightened role in shouldering this burden. Deleuze

27. Guy Debord, *The Society of the Spectacle*, trans. Donald Nicholas-Smith, New York: Zone, 1995.

28. Jane Jacobs, *The Death and Life of Great American Cities*, New York: Random House, 1961.

memorably described this as a shift from panoptic to control space, as the fixed and stable spatial 'moulds' of disciplinary society give way to the incremental and flexible adjustments of digital modulation.²⁹ The extension of surveillance via the automated digital gaze of what Virilio calls the 'vision machine' has significant consequences for the ambiance of contemporary public space.

Today, anyone traveling through a city is almost certain to leave a traceable record. This was strikingly illustrated in the wake of the September 11 2001 attacks, as the movements of Mohammed Atta were retraced from various financial transactions, and could even be watched on video. David Lyon notes: 'He could be seen on grainy CCTV footage entering a motel, paying for fuel at a gas station, picking up supplies in a convenience store, and so on'.³⁰ Two factors are worth emphasizing about such a record. First, it was not part of any official police or security operation, but merely the routine electronic 'footprint' of everyday commercial transactions. Second, digital convergence of older, more fragmented systems meant that authorities were able to assemble various streams of data with great speed.

Lyon stresses that modern surveillance is not undertaken primarily by various state agents such as police. Rather, what he terms 'surveillance society' emerges in the nexus of demands for economic and administrative flexibility. In short, technological surveillance is primarily an outgrowth of capitalism's quest for expanded and efficient economic circulation and the heightened spatial mobility this demands. Sociologists since Simmel have emphasised the pre-eminent role of the stranger in the modern city. In contrast to earlier forms of habitation, where social relations were grounded primarily in personal knowledge and the stranger was someone who arrived from elsewhere and either left or in staying *became* familiar, the modern city is characterised by living among strangers who largely remain unfamiliar. Social interaction in this context becomes increasingly dependent on establishing abstract forms of trust, such as various bureaucratic records and licences relating to educational attainment, professional skills, health, age, and the like. Over recent decades, technological tokens of trust, such as credit cards, passwords and PINs, have assumed a greater role in economic life. As a result, everyday social interaction has become increasingly dependent upon the collection and checking of large volumes of information about individuals. Speed of comparison via the searchable database is the practical key to the viability of such routines. Corbusier's aphorism that 'a city made for speed is made for success', initially coined in 1924 to proselytise for the rationalisation of the street, takes on a new meaning as digital infrastructure assumes primacy in economic and social relations.³¹

The digital networking of surveillance changes its function in a fundamental way. Surveillance technologies such as urban CCTV cameras are no longer separate 'islands' located at specific sites such as banks or casinos, but belong to interconnected systems permeating wide

29. Gilles Deleuze, 'Postscript on the Societies of Control', *October* 59 (1992): 3-7.

30. David Lyon, *Surveillance after September 11*, Malden, MA: Polity Press in association with Blackwell, 2003, p. 88.

31. Le Corbusier, *The City of Tomorrow and its Planning*, trans. Frederick Etchells, London: The Architectural Press, 1971, p. 179.

swathes of urban space. The speed of data circulation, combined with the development of pattern recognition software applied to characteristics such as faces and behaviour, means that surveillance is less retrospective in orientation, but increasingly shifts to the prospective stance of risk management. In other words, surveillance is no longer mainly about what happened in the past, or even what is happening now in the present, but about anticipating what *might* happen in the future. This underlines one of the key issues influencing the exercise of power in contemporary media cities. While extending surveillance often seems eminently reasonable in individual cases, the problem is the extent to which 'risk management' based on technological surveillance becomes the dominant philosophy for managing public space. As many analysts have pointed out, mass surveillance inevitably demands the differentiation of so-called 'normal' and 'deviant' groups. The oppressive social effects of this logic has assumed increasing importance during the US-led 'war on terror' with rhetorical demand to fear strangers, coupled to its explicit programs for mass screening on the basis of profiling.

While such state surveillance is invidious, it is merely the tip of a much larger commercial iceberg. The bulk of contemporary surveillance, such as the data mining of electronic transactions, is undertaken with the ambition of rendering desire more profitable via the formation of detailed personal consumption profiles. Profiles are also the key to the optimisation of personal media. People trade privacy in order to gain functionality – of their computer, their phone, and, increasingly of their homes and workplaces. The smart building needs to learn our preferences, or at least to study our actions, in order to model our behaviour and anticipate our needs. Public space, we are often told, 'needs' surveillance technologies to ensure a range of functions from the safety of citizens to efficient services for consumers. But at what point does this kind of 'anticipation' become a neo-Weberian cage for shaping behaviour? The embedding of devices such as computers, cameras, RFIDs and other sensors which can 'measure' and 'test' public behaviour raises vital questions concerning the future of public space. Is there still space for social interactions outside the dictates of surveillance and the spectacular forms of commodity display?

Experiments in Public Space

Denying the existence of alternatives risks becoming a self-fulfilling prophecy. A better question is *how might we facilitate such interactions?* One of the most useful aspects of Richard Sennett's work on public sociability is his emphasis on the fact that public culture is neither natural nor pre-given. Rather, public culture emerges from a set of social skills demanding practice, nurturing and experimentation. For Sennett, the core value of public culture is cosmopolitanism. By cosmopolitanism, he means not so much the 'broadening' effects of travel that was once largely to be restricted to the rich and powerful, but the ability to sustain civil relations to strangers in public. Sennett extends Simmel's insight into the unique condition of the modern city as a society of strangers to argue that unexpected conjunctions of knowledge and culture are the key benefit of modern urban life. In Sennett's terms, living among strangers means that human experience is inevitably subjected to multiple collisions or jolts: 'these jolts are neces-

sary to a human being to give him that sense of tentativeness about his own beliefs which every civilized person must have'.³² In other words, the *structural* conditions of the modern city favour what might be called an *everyday cosmopolitanism*. Interaction among strangers supports the innovations in social practice that underpin the dynamism of modern urban societies. The capacity to negotiate public relations with others becomes even more vital in a context in which cities are increasingly comprised of diverse populations who don't necessarily share a common language, religion or cultural history, but instead share the experience of cultural complexity.

A second useful aspect of Sennett's work is his stress on the pivotal role of ritual and play in forging public culture. Sennett argues that social rituals provide a vital means of coordinating 'impersonal' social relations (relations with strangers which don't depend upon assumptions as to their personal qualities or character), while play is a key mechanism for testing and potentially reinventing social rules concerning appropriate modes of public behaviour. Aligning Sennett's framework with the emphasis on anti-spectacular, user-configured culture drawn from Debord and Constant offers some useful markers for thinking how we might go about reinventing public space in the present. In particular, it suggests a need for frameworks capable of strategically addressing the new dimension of social space created by the intersection and overlapping of media and architecture in 'media cities', moving beyond current paradigms based upon security and commerce to instead think about facilitating other forms of engagement in public space.

One productive line of experimentation has been led by artists using new media in public space. Contrary to the cybernetic paradigm of communication, where communicative 'efficiency' is maximised by restricting 'noise', many contemporary artists design experimental interfaces with the aim of facilitating an open or 'unfinished' ambiance of public space. Unfinished public space is urban space structured around the space left for the public – for different publics – to come into being via their interactions with a combination of physical and media infrastructure, and each other. Arguably the most consistent and influential body of work in this field has been Rafael Lozano-Hemmer's 'relational architecture' projects.

Large scale projects such as *Body Movies* and *Underscan* both involved robotically controlled digital projection and shadowplay.³³ *Body Movies* comprised a series of large-scale still portraits projected onto the exterior wall of a cinema bordering a large public space (originally Schouwburg Square in Rotterdam). The images were rendered invisible by directing high intensity white searchlights on to them, meaning they were only revealed when a pedestrian walked between light source and wall. In this way, the wall surface became a screen for the display of participants' shadows, but also for the 'negative imagery' appearing inside these silhouettes. A variation of the same principle was used in *Underscan*, where 'video portraits'

32. Richard Sennett, *The Fall of Public Man: On the Social Psychology of Capitalism*, London: Penguin, 2002, p. 296.

33. *Body Movies* was first staged in 2001 in Rotterdam, and subsequently in a number of other cities including Hong Kong in 2006; *Underscan* was staged in Derby, Leicester, Lincoln, Northampton and Nottingham in 2005-2006, and in Trafalgar Square, London in 2008.

were projected onto the ground of various central city thoroughfares and public spaces. Again, the portraits were saturated by a powerful white light source, becoming visible only when passersby approached. The scenario produced a complex interplay of body and image, as the visitor revealed the portrait by framing it within his or her own shadow, while the image became 'active' on the visitor's arrival, sitting up and making eye contact at some point, before turning away on the visitor's departure.

These works are suggestive of some of the potentials and pitfalls of public space media art. First, they are experimental platforms: they don't always 'succeed', or at least not always as planned. Lozano-Hemmer first used projection and shadows in a work called *Re: Positioning Fear* at Graz in 1993. In that piece, the shadows were intended to symbolise anxiety and creeping fear, but Lozano-Hemmer found that the audience had other ideas:

As soon as people passed by and noticed the installation they would start to play with their shadows and perform humorous pantomimes ... a man in a wheelchair could roll his twenty-five-meter-high shadow over the others deriving great pleasure from squashing them with his giant wheels. The installation was converted into an *ad hoc* carnival and nobody thought for one minute about fears, plagues or invasions. This was one of the most entertaining errors of my career.³⁴

Second, these works produce complex combinations of personal intimacy and civility. While the interfaces produce striking, and, at times, spectacular, visual images, they also emphasize embodied participation. This transforms the nature and stakes of 'interactivity'. Rather a menu where 'choices' entail relatively predictable consequences, the fact that many people can participate at the same time means there is a more open horizon in which contingency and unpredictability assume a greater role. When *Underscan* was staged in London in November 2008, Lozano-Hemmer found the location improved its experimental aspect: 'The project in Trafalgar Square benefited greatly from the fact that there is already a lot of foot traffic at night. This meant people would just "encounter" the work as they went home after work, for instance, rather than having to go to a specific site to see it'.³⁵

Third, while many of Lozano-Hemmer's public space works utilise computer-tracking systems, their lack of pre-planned outcome obviates the logic of surveillance. Crucially, these projects are not just about *watching* images, but depend upon the presence of the public – on people interacting with others – in order for things to happen. Lozano-Hemmer stresses that the public 'co-produce' the work: 'That's a collaboration that has often been identified (for example in Duchamp's maxim *le regard fait le tableau*) but now it is inherent to any interactive proposal. In the end *Body Movies* or *Vectorial Elevation* are platforms that are taken over by the public If no one participates the pieces simply do not exist'.³⁶

34. Rafael Lozano-Hemmer, 'Interview by José Luis Barrios', trans. Rebecca MacSween, 2005, <http://www.lozano-hemmer.com/ecomisario.html>

35. Rafael Lozano-Hemmer, email interview with the author, 2009.

36. Lozano-Hemmer, 2009.

Works like *Body Movies* and *Underscan* are notable for the delicate balance they construct between personal participation and collective interaction, between active engagement and reflective contemplation. In this way, they are able to sustain playful encounters among groups of strangers who meet in public space and discover that, by enacting a collective choreography, they can alter its ambiance. For this to occur, it is important that the interfaces are capable of commanding immediate attention – that they are visually arresting – but also they are not immediately comprehensible. While technically sophisticated, they promote a mode of interaction that is not simply instrumental. Passers-by aren't initially sure what is going on, but can best learn by joining in. Habit is suspended in favour of kinesthetic experimentation. Unexpected conjunctions emerge. Through mutual participation, people discover they are able to intervene – albeit ephemerally – in the look and feel of central city public space. In short, they are platforms encouraging creative public behaviour, enabling the city to become an experimental public space.

Another equally significant line of experimentation worth mentioning here relates to the growing reinvention of ritual utilising embedded urban media infrastructure as a spatial and communicative resource. Recent years have seen much discussion of the impact of mobile media such as cell phones on urban activism. Large screens clearly do not lend themselves to the same sort of tactics based on mobility. The fixity of their location, coupled with planning and content restrictions and hierarchical forms of control, has led many to dismiss them as a potential civic resource. This response, while perhaps justified by the predominantly commercial history of large screens, seems premature. Given their prominent locations, the 'occupation' of large screens by specific groups is capable of creating powerful symbolic resonances. A significant example was the occasion of the national apology to the Stolen Generations issued by the Australian Federal Parliament on February 13, 2008.³⁷

The event conformed in some respects to the established paradigm of the 'media event' where the live telecast of an event (in this case, speeches from Parliament) is used to construct an 'imagined community' based on shared temporality (synchronicity) rather than spatial adjacency.³⁸ However, as has become increasingly common in the last few years, not everyone wanted to watch at home. Many people, both indigenous and non-indigenous, witnessed the debate about the apology in highly public sites such as Federation Square in Melbourne.³⁹ This desire for the collective experience of shared viewing reintroduces a performative role for members of the public in *public* culture. This was particularly notable during the address by then Opposition Leader Brendan Nelson speech, when the crowd in

37. The 'stolen generations' refers to Aboriginal children removed from their families between the 1930s and 1970s under Australian state and Federal government policies directed towards the 'assimilation' of indigenous people. The practice was widely discredited in by the Wilson Royal Commission (1992) but an official apology from the Federal Parliament did not eventuate until 2008, following the defeat of the previous conservative government whose Prime Minister infamously refused to say 'sorry'.

38. Daniel Dayan and Elihu Katz, *Media Events: The Live Broadcasting of History*, Cambridge, MA: Harvard University Press, 1992.

39. Federation Square hosts a permanent large screen in a prominent city centre location (see interview with Kate Brennan in this volume).

Federation Square demonstrated their disapproval of what Nelson was saying by turning their backs on his screen image. By effectively translating a traditional gesture used in face-to-face communication into the hybrid spatial context of the contemporary media city, the crowd become an actor able to intervene in the process. The action was picked up by many news bulletins, and in this way became part of the complex feedback loops that shape the unfolding of such a 'media event'.⁴⁰ SMSs submitted from the crowd also ran across the bottom of the screen, evoking the emotionally charged response many had to the occasion.⁴¹ This example demonstrates the way that the new technological infrastructure of a media-dense site like Federation Square can enable the symbolic occupation of the urban centre by a group, such as indigenous Australians, who have who have historically been excluded from it. In this context, the screen functions as both an attractor and an amplifier. It offers a point of focus for a protest action, but also a way that people can organise an action so as to intervene in other media flows, opening new avenues for what Alexander Kluge terms *counter-publicity*.

This kind of use of public screens as the site for the enactment of social rituals is growing. The most extensive experiment in using public space media is the public space broadcasting initiative launched by the BBC in 2003. At the time of writing some 18 screens have been installed in city centre locations in mainly northern cities. They show mainly BBC content, but have programming 'windows' for partner cultural institutions such as The Cornerhouse Gallery in Manchester and FACT in Liverpool. As the BBC's Bill Morris observed:

We've learnt a lot about the fact that there is a really enduring need for people to share some of those opportunities for having a bit of fun, celebrating a great moment, be it a sporting moment, or a cultural moment ... Or indeed a moment of concern and sadness. In Liverpool there was a guy called Ken Bigley, a guy from the city who was out in Iraq who was murdered in a particularly gruesome way. They really took it to heart and they held a one-minute silence and there was a service and there were more people gathered in front of the screen in Liverpool than there were at the Cathedral, and to our astonishment, people were putting flowers at the bottom of the screen. Now this wasn't planned or our assumption at all. We've been constantly surprised and challenged by what people are doing.⁴²

40. For example, public service broadcaster the ABC reported: 'Large groups of people watching from Parliament's Great Hall and in Federation Square in Melbourne turned their backs to Dr Nelson when he spoke. The images reminded some of a reconciliation conference in Melbourne in 1997, where Indigenous people turned their backs on former prime minister John Howard', Tony Jones, 'Apology the Latest Salvo Fired in the "Culture Wars"', *ABC News* (2008), <http://www.abc.net.au/news/stories/2008/02/14/2162341.htm>

41. As leading historian Professor Henry Reynolds noted on television program current affairs *Lateline*: 'The reaction of so many people all over Australia indicated just how much he [Prime Minister Rudd] had touched the nation, and I think that was the most amazing thing about it. It wasn't so much what happened within the Parliament House in Canberra, it was this extraordinary national experience that was felt all over the country.' Transcript available online at <http://www.abc.net.au/lateline/content/2007/s2162136.htm>

42. Brian Morris, Interview by Nikos Papastergiadis, London, November 14, 2005.

Towards a Transnational Public Sphere?

As more large screens are launched, their impact on the dynamics of public space is becoming a global issue. It remains to be seen whether the emerging global infrastructure of public screens can be used in ways that elicit active public participation or whether they will simply subject passersby to 'messages' formulated according to the transmission model of media. If the dominant function of the new infrastructure is merely to display advertising, large screens are likely to remain merely another channel of visual noise in an oversaturated environment. An historic opportunity for reshaping public space and civic culture will have been missed.

As discussed above, a key advantage that large screens have over the profusion of small screens now used for mobile personal media consumption is precisely their capacity to promote new forms of shared experience in symbolic locations. In this respect, the emergence of a new generation of screens positioned in pedestrian spaces such as city squares is significant. Instead of being constrained by the immediate need to seize the attention of a fast moving target, other rhythms can be explored. Here we might revise Corbusier's axiom about the 'success' of fast cities in accordance with Willie Dixon's sentiments: 'I'm built for comfort, I ain't built for speed'. 'Comfort' here should not be read in terms of the bourgeois aspirations for 'authentic' existence to be lived in private, but in terms of the comfort of the city: its hospitality to strangers, its spaces for unexpected and creative public interactions. Speed is a useful, and at times necessary, element of communication practice, but when it becomes a fundamental value harnessed to specific paradigms of efficiency and instrumental command, it can easily overwhelm diverse social interactions. In place of a fundamentalism of speed, we need to imagine how urban media infrastructure might facilitate the polyphony, or what Lefebvre calls *polyrhythmia*, of cosmopolitan public cultures.

In her work on global cities, sociologist Saskia Sassen has stressed that the function of digital technology cannot be conceived simply in terms of promoting de-territorialisation and immaterial flows. Digital networks certainly produce novel spatial effects, in part by rendering all points on the network equi-distant. But such networks also have a material existence. Sassen also stresses the importance of empirical analysis of the particular pathways along which the digital and the non-digital are intertwined – or to use Sassen's word – 'imbricated'.⁴³ Precincts such as Federation Square offer one of the most interesting 'frontier zones' for this type of research. They are media-dense spaces, comprising a variety of platforms such as large screens, LED signage, wireless networks, and a growing range of interactive capabilities. They are also the inheritors of the tradition of public space constituted by street life, city squares, cafes, and public cultural institutions. They have assumed the task of catering for those who are present at a moment when being present has assumed new dimensions.

As the number of public screens expands around the world, there is growing potential to link up screens in public spaces in different cities. In the past, this has been done primarily in the

43. Sassen. *Territory, Authority, Rights*.

context of large-scale events such as the 'Live8' concerts.⁴⁴ What would happen if those links were available on an everyday basis, and involved interfaces enabling public participation? By promoting new forms of agency in situated spaces *and* across national spaces, large screens have the potential to contribute to new space-making practices involving cross-border interactions. This is the new terrain for 'cosmopolitan' encounters contributing to something like a transnational public sphere. Experiments towards this end will test some of the fundamental conditions of twenty-first century urbanism.

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44. 'Live8' (2005) comprised synchronised concerts in 10 venues around the world. A related example was the '2000 Today' live global telecast, a media event of Warholian duration, linking people gathered in public squares in 60 different cities over a 24-hour period as midnight struck around the world.

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DIGITAL MEDIA AS ORNAMENT IN CONTEMPORARY ARCHITECTURE FACADES: ITS HISTORICAL DIMENSION

UTA CASPARY

The question of a new aesthetics of facades in the urban environment is closely linked to the question of 'architecture as sign or communication', to take up the title of Denise Scott Brown and Robert Venturi's latest book, published in 2004. According to Brown and Venturi, 'historical precedents engaging architecture as sign embrace essentially every period or style of architecture'.¹ The surfaces of Ancient Egyptian temples were enveloped with hieroglyphics, Greek and Roman temples were richly ornamented with sculptures; both could be perceived as instances of what they call 'billboards for a proto-Information Age'.²

It has often been claimed that the architecture of modernity repudiated the traditional ornament or 'rhetorical element' in following both Adolf Loos' condemnation of ornament as a 'crime' against the logic of the industrial age and Mies van der Rohe's dictum 'less is more'.³ Yet classical modernist architecture also redeveloped the ornamental in terms of material and colour compositions. Totalitarian architecture, for instance, utilised specific propagandistic and symbolically loaded icons for its purposes, while post-war-architecture experimented with a variety of facade design ranging from abstract patterns, figural mural paintings to honeycomb facades. Thus, a multi-faceted and continuous genealogy of ornament exists in the twentieth century.⁴ This ongoing importance of ornamental and decorative elements, while in varying intensity, received significant impulses with postmodernism's theoretical and practical interest in architecture's narrative and communicative potential. With the 'digital turn' in the 1990s (that is, with the establishment of computer-based design and production processes), a new form of ornament was born: the electronically animated, computer-controlled ornament which as a central element of a media facade, can be transformed into huge, moving images, films or changing text-messages, thus communicating with the urban space around it.

In this chapter, I understand ornament as an element of a facade which cannot be separated neatly from image, writing, and – this is the focus here – digital media. I perceive a continuous interplay between image, writing, digital media and ornament to the extent that

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1. Robert Venturi and Denise Scott Brown, *Architecture as Signs and Systems: For a Mannerist Time*, Cambridge, MA: Belknap Press, 2004, p. 24.
 2. Venturi and Brown, *Architecture as Signs and Systems*, p. 24.
 3. Robert Venturi, *Complexity and Contradiction in Architecture*, New York: Museum of Modern Art, 1977, p. 40.
 4. Jörg Gleiter, 'Zur Genealogie des neuen Ornaments im digitalen Zeitalter. Eine Annäherung', *Arch+* 189.10 (2008): 77-83.

images and digital media can assume ornamental functions and that they are all united by the communicative, narrative aim of a building's facade. Ornaments provide architecture with structure and at the same time enhance its aesthetic effects. Media facades often take up ornamental principles (e.g. repetition, rhythm and symmetry) and by doing this, they replace or expand the potential of ornament, which traditionally ranges from the purely decorative to the symbolic or functional (sun and/or view protection).

My understanding of media facades is broad: it includes facades that are based on or integrate digital media in their construction system as well as facades that correspond to media strategies or media iconography and that evolve a media-like visual effect in the viewer's eye (so-called passive media facades). In short, facades characterised by a moving, dynamic effect thanks to computerised design and production technologies.⁵

Today's discourse about media architecture widely assumes that a media facade's quality, its sensorial effect, and perceptive fascination depends on whether the facade is integrated into the building in terms of function and construction or whether it transports content or symbolic meaning.⁶

How are we to make sense of the revival of ornament in digital disguise? What do contemporary media facades communicate to us, the viewer? In trying to find answers to these and similar questions I will step back in time – not as far as Venturi, to Ancient Egypt, but to the Middle Ages – and place the comparatively young phenomenon of media facades within the tradition and theory of ornament in (mainly) European and North American architectural history.

Historical Dimensions of Media Facades

Media architecture characterised by colour, light and moving ornaments or flickering video images has four main historical precursors. Firstly, the gothic cathedral windows of the twelfth to the fifteenth century; secondly, the *screen walls* of churches – mainly – a common practice since the twelfth century; thirdly, the origin of architecture in textile arts, as Gottfried Semper theorizes; and finally, light architecture of the early industrial age. Throughout I will pair these four historical signposts with contemporary buildings to draw out existing connections between the architectural past and present day's facades. As I focus on the conceptual, content-related dimension of media architecture, I will only touch upon technical aspects and the difference between historical facades that are mostly illuminated by daylight and today's media facades, which mainly depend on artificial light and reveal their effects only by night.⁷

5. M. Hank Haeusler, *Media Facades: History, Technology, Content*, Ludwigsburg: AVEdition, 2009. Haeusler categorises the vast number of contemporary media facades according to their technical composition and distinguishes mechanical facades, projection facades, rear projection facades, illuminated facades, window raster animation, display facades and voxel facades.
6. Susanne Jaschko and Joachim Sauter, 'Mediale Oberflächen – Mediatektur als integraler Bestandteil von Architektur und Identität stiftende Maßnahme im urbanen Raum', *Arch+* 180.09 (2006): 42-45.
7. Haeusler, *Media Facades*, p. 13. In order to distinguish media and light architecture, Haeusler stresses the dynamic aspect of the displayed graphics, text, image.

Gothic Cathedral Windows as Precursors to Today's Media Facades

Since their appearance, media facades have been paralleled with gothic cathedral architecture.⁸ Both are perceived as originating in a radical change – societal as well as technical and artistic – caused by the advent of new information technologies for the public or a mass audience. Of course, their respective contents are diametrically opposed: the iconic programme of gothic cathedral windows transmits religious information whereas media facades are nearly always of a profane aesthetic experimental character or serve commercial and advertising purposes.

The Netherlands Institute for Sound and Vision, inaugurated in 2006 in the Media Park in Hilversum near Amsterdam, seems to have been rather obviously inspired by the tall, light-transmitting, stained-glass gothic cathedral windows.⁹



Fig. 1: Netherlands Institute for Sound and Vision in Hilversum, view from the inside. Photography: Uta Caspary, March 2007.

8. Martin Pawley: 'Information: Weniger ist mehr', *Arch+* 10908 (1991): 65.
9. The architects Neutelings Riedijk say: 'What we sought to achieve was the quality of light-transmitting cathedral windows, not just a piece of glazed and mirrored technology but a lightly tactile surface', *The Plan: Architecture & Technologies in Detail* 19.4/5 (2007): 49.



Fig. 2: Detail of the facade.
Photography: Uta Caspary,
March 2007.

In this 'media cathedral', biblical scenes have been replaced by depictions of around 750 historic moments of television and film in the Netherlands, such as the Dutch Queen on a bicycle, a well-known football star, two famous comedians, etc.¹⁰ Film clips of these images are stored in the Institute so that the facade expresses the function of the building as a huge media memory. With moulds made of the digital images, thick relief glass panels were manufactured especially to achieve a tactile surface that successfully combines ornamental and iconic effects. The graphic designer and video-jockey Jaap Drupsteen worked up the images into blurred test pictures that resemble captured spirits. From a distance, the strikingly coloured facade evokes a flickering TV set in a typical Dutch living room. Although this is not a media facade in the narrow sense of the word, since there

are no computer-controlled lighting effects, the impressive interplay of ornamental image and light is definitely inspired by media aesthetics. Both light refraction and reflection create a three-dimensional effect which indulges passers-by in a display of kinetic images: yet instead of being in motion itself, the facade instigates (virtual) movement in the viewer's mind – we might, therefore, want to call it a 'passive media facade'.¹¹

Gothic and Renaissance Screen Walls as Precursors to Today's Screen Walls

The by-now widely used term *screen* (by that I mean also used in a non-Anglo-American context) can be traced back etymologically to screen walls; that is, a flat relief-like, sometimes free-standing wall (in German: *Schauwände*, *Schirmfassaden* or *Bildschirmwände*).¹² In Europe, such screen walls were realised in gothic and Renaissance architecture, both sacred and profane: in Italy, especially in churches, in Northern Europe, but also in townhouses.¹³ These screen walls were obviously placed in front of the main construction thus implicating a rather aesthetical, narrative or symbolic function.

Famous historical screen walls in an ecclesial context include the Western facade of Santa Maria Novella in Florence, designed by L.B. Alberti (1470) or the spectacular Western facade of Lincoln Cathedral (twelfth to thirteenth century). This latter vast screen, made of pale yellow limestone, is built out in front of the porches 175 feet wide, thus reaching out beyond the nave's outer walls, with a high gable and corner turrets. It is covered in great bands of arcading, but the actual doorways are deeply recessed, providing an impressive effect of depth and chiaroscuro that makes it look as if the whole facade were moving. The front as a whole

10. Anneke Bokern, 'Flimmerkiste. Institut für Bild und Ton in Hilversum', *Baumeister* 104.04 (2007): 86.

11. Alexander Wahl: 'Wandelbare (mediale) Gebäudefassaden', Seminar at the University of Weimar, 2001/2002, <http://www.alexanderwahl.de/dateien/medienfassaden/medienfassaden.html>

12. Caroline Jäger, *Europäische Architekturtraditionen: Ideen und Konzepte*, Wien: Neuer Wissenschaftlicher Verlag, 2002.

13. Günther Bindig, *Architektonische Formenlehre*, Darmstadt: Wissenschaftliche Buchgesellschaft, 1995.

is a spectacular backdrop for a processional entry on feast days as well as a curtain-raiser to prodigious events within the cathedral.¹⁴ In other examples, like Wells cathedral's screen facade (also thirteenth century), the decorative and narrative function is multiplied through sculptured figures. Similar to Hilversum, the static wall has a dynamic dimension in the eyes of the passers-by who look at the scenery of the stone screen.

For KPN Telecom's headquarters in Rotterdam, Renzo Piano designed a large screen in front of the actual wall in 1997-2000, a light wall: the facade of the building's side facing the city and the Erasmus Bridge is tilted and has a slanted pillar reaching from the ground up to the centre of the facade. The facade is clad with a green curtain wall system complemented by green lights distributed evenly over the glass facade thus showing changing patterns, moving ornaments and simple animated sequences – smiling faces, swimming fishes or interactive games like Tetris which are meant to encourage communication between the urban space and citizens.¹⁵ KPN Telecom is a typical example of a contemporary media facade, which – unlike its etymological predecessors made out of stone – has no visual effect during the day.

Semper's Theory of Textile Architecture and Today's Pixel Facades

In his main theoretical work, *Style in Technical and Tectonic Arts, or Practical Aesthetics* from 1860/63, the architect and architectural historian Gottfried Semper argued that all arts originated in the textile arts. The main principles of architecture can be traced back, according to Semper, to the temporary tent constructions made out of interlace, woven textiles or carpets. Semper's postulated interrelation between architecture and the textile arts seems to be an apt description of today's media facades: the digitally produced, pixelated, pixel-dissolving images shown on media facades are reminiscent of the geometrical, abstract patterns and interlaced structures of textiles and their ornamental aesthetics. The single pixel replaces the single stitch. As Tom Phillips wrote in the *Architectural Review*: 'the binary system which governs information technology is one of the most ancient staples of ornamental practice, as is the mode of visual generation by pixels in mosaic and weaving'.¹⁶

Chanel's new headquarters in Tokyo, designed in 2004 by Peter Marino Associates Architects (from New York), symbolizes a Semperian interdependence of texture and architecture, in combination with a market-oriented dimension typical for the present day. The building is a conceptual rendering of the iconic Chanel tweed achieved through a programmable glass facade with a massive LED display. The majority of the facade's 20-minute animations (designed by different artists and altered every three months) are also inspired by the visual world of fashion (you see models in long coats, for instance); the reduction to black and white also corresponds with Chanel's aesthetics. The tower is layered with stainless steel in glass to symbolise quilting, an icon of Chanel, and is semi-transparent during the daytime

14. Paul Johnson, *Cathedrals of England, Scotland and Wales*, London: Weidenfeld & Nicolson, 1990.

15. Anne Bracklow, *Markenarchitektur in der Konsumwelt: Branding zur Distinktion*, Wiesbaden: Deutscher Universitäts-Verlag 2004, p. 142.

16. Tom Phillips, 'Ornament on Trial', *The Architectural Review* 1274.4 (2003): 79.

and fully transparent at night. The building, viewed from the street, appears as an immense black-and-white video wall. The curtain wall is a sophisticated 2-foot-thick layering of six components fitted onto a reinforced-concrete core: 'the high-tech illumination stitches all the elements together – and the seams don't show'.¹⁷ All that Marino, the fashion world's architect of choice, wanted was a building that would not look like a building – 'I wanted one that would dissolve; I wanted it ever-changing. That's the face of fashion today. Nothing is static: it's not the same from 9 o'clock to 10 o'clock. It always has to be different'.¹⁸

Early Light Architecture as Precursor to Today's Light Ornaments

Artificial light is perhaps the most crucial component of media facades: especially since it allows the building come to life at night. Therefore, the fourth historical precursor of today's media architecture are the luminous buildings which emerged with the widespread introduction of electricity in the late nineteenth century. Apart from its use as street lighting, artificial light was used increasingly to accentuate the symbolism and monumentality of buildings, especially of their ornamental facade details.

The earliest examples of this are the Singer Building (by Ernest Flagg, 1906-1908, demolished in 1968), the Woolworth Building (designed by Cass Gilbert as a terracotta-clad steel-construction, 1910-1913) in New York and the Wrigley Building (by Graham, Anderson, Probst & White, 1920-24) in Chicago. Powerful spotlights illuminated the skyscrapers, usually from below, creating a sensational interplay of light and shadow. Since the 1920s, illuminated signs and shop windows started to dominate the street space. Here, then, originates the close relation between media facades and commercial interests.

One of the earliest examples regarding light or media architecture in Europe is the headquarters for *De Volharding* (Perseverance), a social cooperative based in The Hague. With its big glass facade, designed in 1927/28 by Jan Willem Buijs und J.B. Lürsen, the building is reminiscent of the aesthetic of the avant-garde De Stijl-movement. Apart from a glazed stairwell and lift shaft, Buijs' design included horizontal bands of glass spandrel panels. These served as illuminated signs by night; both text and iconic messages could be changed from inside. The facade sparked a heated debate about the integration of advertising into architecture.¹⁹ With the dawn of the industrial and later capitalist era, architecture became more and more an 'instrument for brand communication': it was used as a means of identifying a certain brand, as a signal for a company.²⁰ Architecture seemed to support the principles of *branding* and *corporate identity*. Whilst these terms, which originated in the USA, were introduced in Europe during the 1990s, the phenomenon itself existed before: traditional architectural ornament with its symbolic con-

17. William Weathersby, 'Peter Marino Wraps Chanel Ginza in Tokyo with a Cloak of Light', *Architectural Record* 11 (2005): 208.

18. Jennifer Kabat, 'The Alchemist', *SPOON* 3.4 (2005): 39.

19. After a brief period of service, the signs were never used again after the 1920s but were finally re-lit by the contemporary art movement LUST in 2000 and again at the Today's Art Festival in 2006.

20. Bracklow, *Markenarchitektur in der Konsumwelt*, pp. 7, 60.



Fig. 3: De Volharding in The Hague. Photo courtesy of Chris Rehorst.

tent was a predecessor of the *logo* in architecture.²¹ Thanks to the opportunities opened up by digital media, architecture had re-acquired its value as a means of communicating to the public (or to use the pejorative term: a means of advertisement).

After World War II, light architecture evolved into the purely commercial architecture of Las-Vegas-Strip, which from Fifth Avenue in New York to Piccadilly-Circus in London West End uses illuminated signs, symbols and scripture in all colours and formal variations. In their well-known 1972 study *Learning from Las Vegas*, Robert Venturi, Denise Scott-Brown and Steven Izenour described this kind of architecture as a spatial 'communication system'.²²

I would now like briefly to present three examples of present-day media facades to show the variety of lighting techniques developed over the past 15 years.

The first is the light installation (or 'window raster animation') *Blinkenlights* developed by Chaos Computer Club on the Haus des Lehrers (House of the Teacher) office building at Alexanderplatz in Berlin that has been enhanced to become the world's biggest interactive

21. Jäger, *Europäische Architekturtraditionen*, p. 134.

22. Robert Venturi, Denise Scott Brown and Steven Izenour, *Learning from Las Vegas*, Cambridge, MA: MIT Press, 1972, p. 8.

computer display.²³ From 2001 to 2002, passers-by could participate in the design of the light facade playing the old arcade classic Pong on the building using their mobile phones or placing their own love letters on the screen.²⁴ However, interaction was limited to mostly young people in possession of the necessary technical knowledge and equipment.

The first big, permanent and non-commercial European display facade is another invention from Berlin. *BIX*, as it was called as shorthand for both *big* and *pixel*, was initiated and developed by the Berlin based media art & architecture office realities:united. It was installed on the Kunsthau in Graz (Austria), built in 2000-2003 by Peter Cook and Colin Fournier as a multi-disciplinary venue for exhibitions, events and other means of presenting contemporary art, new media, and photography. A matrix of 930 standard industrial fluorescent lamps is integrated into the eastern acrylic glass facade of the biomorphic building structure of the building. The lamps' brightness can be individually adjusted at an infinite variability with 20 frames per second. This allows for images, films and animations to be displayed. Thus, the external shell of the *blob* is transformed into a communicative membrane, transmitting the internal processes of the *Kunsthau*. In the absence of a recognisable boundary (the light is gradually fading away towards the edges), it looks as though the light patterns could dance freely on the outside skin of the building.

realities:united deployed the same light ring technique again from 2005 to 2007 on an office building at Potsdamer Platz. For a period of eighteen months, the eleven-storey glazed main facade hosted the light and media art installation *SPOTS*. Again, design, graphics and animation sequences could be recreated on the facade as moving luminous images. Primarily, artistic material was displayed, creating a platform for internationally renowned artists. The client aimed to transform the unspectacular architecture into a landmark (there were still offices to rent!) and at the same time, to improve the image of the company (HVB Immobilien).

Conclusion

There are, of course, many other historical precursors, and the chosen examples might seem subjective or arbitrary to a degree. The four aspects of facades viewed historically through the concept of ornament in article were, in summary: the facade as 1) a coloured, luminous wall, 2) a spatially relevant, narrative screen, 3) a protecting tent or perforated textile structure, and 4) a signal and brand sign.

In the present urban context, urban screens and architectural ornament have important aspects in common: the ambivalent link to function as they can be added to the building or they may be – and this is the desirable variant – fully integrated in architectural facade structures;

their communicative role in urban space which is oscillating between dialogue, advertising function and artistic message; and their attempt to transform the rather static discipline of architecture into something moving and – due to the screening technique – even interactive.

The facade becomes an *interface* and ornament becomes an electronic *display*, a moving image or a transformable object. Media facades seem to accommodate the drive towards corporate design, brand familiarity and event architecture. Electronic iconography gives architecture a transitory and ephemeral dimension that enables and facilitates changeability and movement.

Against this background, I would like to encourage a form of urban architecture that strives for an ever more subtle use of media facades. The communicative or narrative role often enhanced by media facades requires careful differentiation: whereas some facades work as a perhaps slightly superficial small talk, others are able to transmit more substantial messages. Surfaces as architectural interfaces should promote interactivity and connectivity, both within themselves and with the surrounding space. As landmarks in the urban environment, they are able to mediate between public and private; they may even call for participation thus responding to the process of identification and recognition in today's societies.

23. The existing electronic system of the building was used to produce a monochrome matrix of 18 times 8 pixels (eight storeys with 18 front windows each): A central computer linked to a bus system can control all the lamps individually, adjusting their brightness or switching them on and off, thereby showing a constantly growing number of animations during the night. See Ilka Ruby, Andreas Ruby and Philip Ursprung, *Images: A Picture Book of Architecture*, London: Prestel, 2004, p. 100.

24. Blinkenlights Project Homepage, <http://www.blinkenlights.net/>.

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THE LIGHTNESS IN ARCHITECTURE

LEON VAN SCHAİK



Fig. 1: Collage by Leon van Schaik, Einstein image by Peter Lyssiotis. © Leon van Schaik

There is a certain essentialism inherent to Architecture, a certainty that after the weather has washed the informing decorations off the stones of the Acropolis, erased the strident colours from the striated columns of Durham Cathedral, that the play of light, from the rising of the sun to the setting of the moon, across the remaining 'dumb platonic solids', will animate the structures for us; imbue them with a poetic that chimes with our inescapable one-ness with the universe. We see architecture bathed in light, emanating light, forged by light, made of light. Architects collect their designs into virtual cities. They have been arrayed on hilltops, belching smoke, strafed by storms, chiaroscuro, as in the c1800 *Collection of Rationalist Buildings as a City*, by Claude Nicholas Ledoux (1736-1806) and Etienne-Louis Bouleé (1728-1799), or Joseph Gandy's mounded city of buildings by Sir John Soane, rendered in 1818, backlit by stormy skies, high lit by sunrays shining through the stacked up cumulus clouds and penetrating floating wisps of smoke. Architecture in this state is that 'carapace of our desires'¹ – so many of them evidently so tawdry – that critics have observed, pondering on how to distinguish between the noble and the dross? Distinguish between the original and the dim resonance, the actual and the symbol? Architecture has been there to express

1. Michael Frayn, *The Human Touch*, New York: Picador, 2006, p. 21.

in a tangible model our beliefs about the nature of our universe, and ontologies supporting differing ideologies course through its histories.² The tree becomes hut, the cave becomes cathedral, the woven tent becomes our tapestry hung halls – all have their adherents. It is the forms that are bathed in masterly plays of light that concern us here.

To commence this reflection on the interplay between light and architecture let us consider scale. How big is Architecture? No bigger than Urban Architecture, the largest complex that one can imagine a small group of minds conceiving and constructing. Possibly Haussmann's Paris (1853-1870) – thanks to a sleight of hand that inverted our attention from the interiors of individual dwellings to the interior of boulevards that were conceived of as urban rooms, with the sky for ceiling – is as big as it has ever got. Although sometimes architects are powerful enough to add a city to a city as in the massive circus that Napoleon, in a fit of rationalist enthusiasm, proposed for Milan in 1803. How small is architecture? No smaller than a bandstand big enough to hold a string quartet, though to a four year old a table is architecture; as artist Robert Therrien's *Under the Table* (1994) proves by reducing us – even against our knowing that it will – to our four year old selves as we walk underneath the 'giant space' without having to duck.

Some architects, unable to accept these simple constraints, suffer from a sense of demotion. Cathedrals are difficult now because once their frescos, friezes, tympanum, and their coloured fenestrations carried more information than libraries; and building them today, as in Guilford or Liverpool, when information is conveyed in other ways, teaches lessons Master Builders could not have seen as even a troubling cloud on the horizon. Information is the stuff of architecture, not the 'master building' enshrined when the profession was formed in the nineteenth century in a fit of engineer-envy. But what information now, architects ask?

Architecture divorced by professionalisation from its core of spatial intelligence and spatial thinking lost its moorings.³ Architects cast about frenetically, and for most of the twentieth century believed that film offered a route back to power. The bravest found their way to Eisenstein and his theory of attractions. Film envy resulted in vast Oldenburg-like forms in the first half of the twentieth century. While Dziga Vertov in *Man with a Movie Camera* (1929) superimposed himself and his camera tripods over the heads of the masses in a street scene, Melnikov designed a parking garage for Gosplan (Moscow 1929) in the form of a vehicle mudguard with headlight from which light beamed into the street at night, or the HQ of the People's Commissariat of Heavy Industry (1934) in the form of a triumphal stairway to the stars entered from the street through a giant roller bearing. In the second half of the century, Bernard Tschumi tried to emulate the narrative form Eisenstein perfected with his theory of attractions and his cutting between one attracting image and another to elicit emotions within us, the viewers. In a series of designs, Tschumi proposed action as the generator in architec-

2. W. R. Lethaby, *Architecture, Nature & Magic*, London: Gerald Chatsworth and Co., 1956. First published as *Architecture, Mysticism and Myth*, 1892, reworked into above title for *The Builder*, 1928.

3. Leon van Schaik, *Spatial Intelligence: New Futures for Architecture*, Chichester: John Wiley and Sons, 2008.



Fig. 2: Collage by Leon van Schaik. © Leon van Schaik

ture: 'To really appreciate architecture, you may even need to commit a murder'. In 1977, he took the choreography of a criminal's flight as a plan ('Transcript 1, The Park'), and elevated this into architectural form in *The Block* ('Manhattan Transcripts', 1981).⁴ With results as disappointingly static and unmoving as Melnikov's gigantisms, Tschumi achieved a new form of the pathetic fallacy and was forced to move on.

Others have observed how tight was the connection between the flickering light of social ritual and form in public works of architecture when belief illuminated society. When Venice commissioned Santa Maria Della Salute to crown a procession devised to celebrate the passing of the Black Death (1631-1687), architect Longhena won the competition with a design that swallowed the head of the procession into a choir beyond a circular ambulatory through which the people walked for the rest of the day. This brilliant innovation materialised a social flow respecting the nuances and mutual dependencies and duties of its hierarchies. Those in the choir were there glowing all day, the populace flickeringly came and went.⁵ Faint echoes of the fabled 'Bread and Circuses' including naval battles with smoke and fire that filled Rome's Colosseum as empire failed. Resonating with architect Inigo Jones as his Masque Balls for the Stuart Court imported to England, from a much later Rome, the light of Renaissance architecture. Possible emanations with Teatrum Mundii that held all the world's knowledge, illuminated at least for those who filled them with their knowledge.⁶

4. Bernard Tschumi, *Architectural Manifestoes*, London: Architectural Association, 1979.

5. Andrew Hopkins, *Santa Maria Della Salute: Architecture and Ceremony in Baroque Venice*, Cambridge: Cambridge University Press, 2000.

6. Frances A. Yates, *The Art of Memory*, London: Pimlico, 1966.

Somewhere, the alignment of play and belief hove into view. With one eye on the long lasting urban frolic of Vauxhall Gardens (1660s-1850s), the City as Arcadia, a justificatory setting for rude and robust pleasures, legitimised as country innocence complete with torch lit fairs and umbracious dells lit by the moon, thunder and lightning, Koolhaas intuited that the phantasmagoria of Manhattan⁷ was brought into existence through the attractions of Coney Island, from the top of the Globe Tower of which, in 1906, search lights beamed out knowledge over the heads of revellers, and whose competing towers of 1873 presaged the first skyscraper at Madison Square in 1909. Tschumi beat Koolhaas to the prize at La Villette (a new Vauxhall Gardens in Paris, 1983-5) and populated it with a grid of red follies that move only if strummed like a flicker book. Which is what walking through the grid of slightly differing pavilions strobes into one's mind.

Others were dreaming up engines to 'Haussmann' Manhattan, order it that is, such as, Hugh Ferriss's city of light with forms driven down to the street by rays of daylight (1916) that inversely conjures up Hood's city of congestion (Manhattan Collage, 1950),⁸ thickening out the city at every transport junction and bridge in a paeon to traffic, transport and commerce. Ferriss's projections of skyscrapers designed within the geometries of the sunlight present a city form defined by light, an informed geometry, but the message is very tightly restricted. Like Boulee and Le Doux, and Soane, Ferriss captures his phantom city of light-carved solids in a drawing in 1929, and a lone figure in a field rears upwards in Nietzschean admiration (or perhaps in horror) at the arrays of endlessly receding gothic skyscrapers – now uncannily like the view of Shanghai from Pudong – but then a vision paradoxically contemporaneous with the upward carving of the solid of the night with light that was Albert Speer's 1934 Nuremberg rally, hailed by a British visitor as a 'Cathedral of Light' and as the apogee of future architecture. Sobering to realise why Art Deco did not survive World War II.

Can there be an architecture that is information rich as we have come to expect our world to be in this 'informationalist' age? Architects NOX thought so, and embraced the concept of Hypersurface or Deep Surface (H2O Water Experience pavilion with Dutch Ministry of Transport, Public Works and Water Management, 1993-1997), creating spaces in which no surface was flat or orthogonal, and that carried imagery and information under your feet, ahead, to the side and behind you, interacting with your attentions, diverting you from any essentialist temptations. And so we have a generation of intestinal architecture, or toroidal virtual spaces like Tom Kovac's 2003 *Virtual Concourse* and his 2004 *Virtual Venice* pavilion inside which my book *Design City Melbourne*, defoliated, endlessly circled.⁹

7. Rem Koolhaas, *Delirious New York*, Rotterdam: 010 Publishers, 1994, p. 176.

8. Raymond Hood, *Manhattan Collage*, 1950.

9. Leon van Schaik, *Design City Melbourne*, Chichester: Wiley Academy, 2006.

Every spectacle is wonderful the first time you see it, some like the rainbow¹⁰ are enduringly captivating as we penetrate their mathematics; some manmade, like fireworks on the Sydney Harbour Bridge or the Birdcage, seen twice, induce ennui. In discussion with Anna Tweeddale, an architect who is pursuing informed or inform-able architecture, I discovered that practitioners are well aware that the surprise element arising from new technologies is a fragile frontier, interesting for a moment, and then ubiquitous. What is guerrilla art (or Dan Flavin at least) at one moment is advertising the next. Even the new Slow Architecture, like the concrete mass of the Kunsthau Bregenz by Peter Zumthor (1997) with its startling invention of a translucent outer skin through which aspects of the innards are vaguely seen, is a breakthrough one moment and is Louis Vuitton in New York Fifth Avenue in the next (2007) – a decade being a minute in architecture. In art or architecture we use the same word when thinking about what is missing after the breakthrough: 'resistance'. Remember how Paul Klee struggled against his ability to make pure sweet lines by using broken pens?

New understandings of how our spatial intelligence works support old intuitions. Some sites are endlessly fascinating. These are 'Urban rooms' like Times Square, Shibuya, and Piccadilly Circus. Here Einstein sticks his tongue out at us, forever caught, and we project back our own mental concerns creating accidental juxtapositions that are clustered into an enduring 'show' that can captivate us through recognitions of shifting memories *because* the architecture holds the frame for each of us, but as overlapping individuals, not as a 'multitude'.

Here, in these rooms, we see ourselves as citizens of the metropolis, even if only for a moment, and distorted through holding the digital camera ourselves, because as often as not, we are alone in the city. And we take the image away to show ourselves and to our beloved that we were indeed there! There! But some architectural appropriations of light make of a city district a 'no there there' zone: as in Brussels where a new office district sports buildings every one of which lights up in garish LED lit sequences of its own, we may as well be in an outer suburban discount lamp shop such as those on the Nepean Highway strip heading out of Melbourne. Or stuck on the promenade in Kowloon observing the skyscrapers of Hong Kong taking the bow, one by one every night at 8pm to the piped strains of Vivaldi.

10. 'There is a part secured within the process of explanation for the same triggering mechanisms that brought on attention in the first place. These wonder-preserving features of explanation can now be summed up: First, when we undo the rarity of an experience we do so by surprising means and in unexpected directions. Second, to bring the remote nearby is not at all to domesticate it. Third, once the sudden and unexpected temporal features of an experience are outwitted by making it repeatable, the very form that repetition takes is not obvious... Fourth, the location of the extraordinary within the ordinary and the everyday brings about a new form of ordinary itself... Fifth, ...an aesthetic surprise is built into the result... Sixth, the aesthetic element of rapid change of scale from the celestial to the dustlike raindrop as we skip all intermediate scales is an element of breath-taking focus and refocus. Seventh, this is a boundary problem, a result of unexpected pleasure and intellectual complexity'. Philip Fisher, *Wonder, the Rainbow, and the Aesthetics of Rare Experiences*, Cambridge, MA: Harvard University Press, 1998, p. 119.

Some of us – a collective called Urban Interior¹¹ – argue that the urban room could repay closer attention, its acoustics managed, its air aestheticised, its information richness tune-able, tune-in-to-able, its costumes and rituals influenced. And some say it has already happened – at least for some young elites in Japan.¹² Whatever, we seek out urban rooms because the unfolding of our spatial intelligence in the rooms and gardens of our childhood have formed our mental space, our personal *Teatrum Mundii*; and they – those specific places – stain our spatial thinking as much as our language intelligence is stained French by growing up in France. We suffuse the urban realm with screens we have lived.¹³

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11. Urban Interior is a research collective auspiced by the Design Research Institute at RMIT. Its members include: Suzie Attiwill, Robyn Healy, Michael Douglas, Mick Peel, and Malte Wagenfeldt. The collective mounted an 'Occupation' of the gallery of the Craft Council of Victoria in September 2008.
12. Akira Suzuki, *Do Android Crows Fly Over the Skies of an Electronic Tokyo? The Interactive Urban Landscapes of Japan*, trans. J. Keith Vincent, London: Architectural Association, 2001.
13. Gaston Bachelard, *The Poetics of Space*, Boston: Beacon Press, 1969, pp. 11-12. To paraphrase, 'Each one of us, then, should speak of his roads, his crossroads, his roadside benches; each one of us should make surveyor's map of his lost fields and meadows. Thoreau said that he had the map of his fields engraved in his soul. And Jean Wahl once wrote: the frothing of the hedges I keep deep inside me. Thus we cover the universe with drawings we have lived.'

AUTONOMOUS PIXELS LIBERATING THE PIXEL FROM ITS PLANAR POSITION ON A SCREEN

M. HANK HAEUSLER

Introduction / Motivation

Architecture in its recent development has shifted from a planar box, as was the ideal in the modernist movement, towards complex and non-standard forms. An indicator of this shift can be seen in the *Architectures Non-Standard* exhibition at the Centre Pompidou in Paris, originally shown from December 2003 to March 2004. According to the press release, the aim of the exhibition was:

Not merely to present examples of digital or virtual architecture which deal with questions of representation (such as virtuality and hyperspace), but rather to highlight current modifications to the industrialization of architecture.¹

While documenting this change in industrial materials was the primary focus of the exhibition, the specific interest of this chapter is the ‘gestalt switch’, a perceptual and epistemological turning point in design produced by the advent of non-standard forms; a concept first proposed by Zeynep Mennan in an essay contained in the catalogue for *Architectures Non-Standard*.² This paradigm shift to non-standard forms is not an isolated development. Contemporary architecture and architectural discussion has also started to understand and design space as *performative*, with environmentally sustainable design in particular being a key area of discussion.³ The homepage for ‘Green Architecture for the Future’ exhibition at the Louisiana Museum of Modern Art in Humlebaek, Denmark, raises the stakes much higher: ‘a sustainable future calls for new inventions, materials processes and complex architectural methods in the built-up environment’.⁴ One could argue that there is a demand within the architectural discourse for complex or non-standard forms, as well as a call for environmentally sustainable product designs to generate a sustainable future.

After briefly introducing these observations, it might be worth asking why are these changes in architectural discourse are also important for discussions about urban screens and me-

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1. Centre Pompidou, *Architectures Non-Standard*, 2003, [http://www.centrepompidou.fr/Pompidou/Communication.nsf/docs/IDCC337242435DOC06C1256DF2005EA9E8/\\$File/archinonstandang.pdf](http://www.centrepompidou.fr/Pompidou/Communication.nsf/docs/IDCC337242435DOC06C1256DF2005EA9E8/$File/archinonstandang.pdf)
 2. Zeynep Mennan, ‘Des Formes Non Standard: Un “Gestalt Switch”’, in F. Migayrou and Z. Mennan (eds.) *Architectures Non Standard*, Paris: Editions du Centre Pompidou, pp. 34-41.
 3. Branko Kolrevic and Ali M. Malkawi (eds.) *Performative Architecture: Beyond Instrumentality*, New York: Spon Press, 2005.
 4. Louisiana Museum of Modern Art, ‘Green Architecture for the Future’, 2009, <http://www.louisiana.dk/uk/Menu/Exhibitions/Green+Architecture+for+the+Future>

dia architecture? While recent architectural discussion, and architecture itself, has shifted towards non-standard shaped surfaces and forms, screen technology has stayed on the level of a flat plane. Recent technical developments in screen technology have focused either on high definition media contents, such as HDTV, or on maximising the size of certain screen applications such as LCD. A Panasonic LCD screen presented at the CES (Consumer Electronics Show) in Las Vegas in 2006, for instance, reached the impressive size of 103 inches.⁵ Like LCD or plasma technology, the LED-based screens currently applied in architecture mainly stay on a flat plane. Product ranges of companies such as Barco or Element Labs primarily offer LED modular tiles for indoor or outdoor environments. In this essay, I will concentrate on LED-based screens since they are arguably the most suitable solution when it comes to architectural application. The main argument for LED-screens is that this technology has become the most prominent for industry use in recent years, mainly due to falling costs and the large number of inventions and products available, including the capacity to achieve screens with building-sized dimensions. It could, therefore, be argued that while screen technology has focused on producing high-definition or large-scale screens, the shift in architecture towards non-standard forms has essentially been ignored.

The combination of media technology and complex shaped surfaces in architecture are not the only things that cause difficulties when designing a media facade with LED technology on an architectural scale. Most screens are not able to fulfill elementary needs of architecture, such as openings in the facade for illumination and ventilation. This situation is exacerbated by a series of further problems that are worth listing as a premise for research. For instance, many large screen displays such as the Barco OLite system series are around 500 x 500 mm in size, depending on the particular product.⁶ With square or rectangular screens of this size there is only one option for openings in a facade – square or rectangular. An example of this is the NASDAQ building at New York's Times Square, where the square openings in the media facade were determined by the nature of the product used. Other products, like the Barco MiPix 20 series, allow other forms of openings in a media facade. However, this product has other constraining factors that limit its use and applications.

The Mercedes-Benz booth at the Geneva Automobile Salon in 2004 used the Barco MiPix 20 system to allow architecturally designed openings in the facade of the VIP café of the booth. As the designer of this media facade, I can confirm that the form and shape of these openings were significantly dictated by the nature of the Barco system. Several specifications determined by the product led to the final design. One determining factor was finding a way to address the pixels so that the computer could send the right colour information to the pixel at the right time. This was achieved by arranging a pixel chain of up to 32 pixels in either horizontal, vertical or a coil shape. The pixel chains could only be shortened by leaving out pixels at the end of the chain, not in the centre or at the beginning. Thus, in a coil shaped setting, openings could only be achieved in the centre with a dimension of 11 x 11 pixels. Furthermore, the openings in the facade were determined by other parameters of the MiPix

5. M. Hank Haeusler, *Media Facades: History, Technology, Content*, Ludwigsburg: AVEdition, 2009.

6. Barco nv, *LED System Overview*, May 2009, http://www.barco.com/projection_systems/downloads/LED_display_overview_may09_LRw.pdf

20 system, such as the length of the prime-cable connecting the output port of control unit and the first pixel block. The system required a control unit between pixel and computer to distribute the right colour information at the right time to create an image. The primary design ideas of the openings required a longer cable than the standard 25 cm prime-lead between the output port of the control unit and the first pixel block in the chain. Barco provides an option of extending this prime-lead to up to 10 meters, but an increase of the length of the cable would also involve increasing the space for cabling, thus creating a more complex and expensive construction. If the prime-cable lengths are reduced, it may be necessary to increase the number of control units. Both options, prime-cables and control units, would thus have added to the costs and complexity of a media facade.

At this stage, I want to briefly return to the environmental aspect raised at the introduction of this essay and the environmental impact of media facades. Media facades are often seen as applications that use large amounts of energy and are, therefore, not considered to be environmentally friendly. A counter-argument could be made that LEDs, the main light source in media facades, are one of the most energy-efficient lighting devices that currently exist. Used as a source of light,

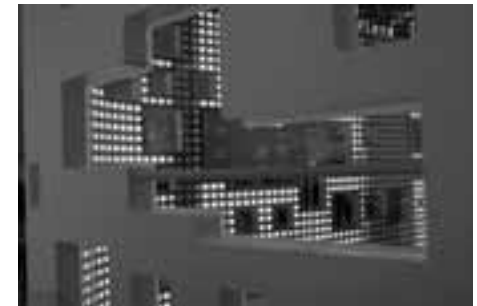


Fig. 1: Mercedes-Benz booth Salon de Automobile 2004
© M. Hank Haeusler

the efficiency of LED lamps is far greater than that of a compact fluorescent lamp (CFL), also known as a compact fluorescent light or energy saving light. C. Crane Company has introduced an LED lamp, the so-called GeoBulb, that can provide as much light as a traditional 60W incandescent with just 7.5W, and a 30,000 hour (10 year) lifespan when used normally. This lamp demonstrates that LEDs and, thus, LED-based media facades, are not necessarily environmentally harmful; it is only the large number of LEDs used in a media facade that causes high-energy consumption. A solution to this problem in terms of working towards a more energy-efficient designed media facade needs to be sought.

Defining a Research Question

Based on these observations, the research of the Urban Digital Media Research Laboratory (UDM_RL), part of the UrbanAid Group at the University of Technology (UTS) Sydney, focuses on finding solutions that will bridge the divide between architectural interests and media technology. The research laboratory was founded by Tom Barker and myself in October 2008, and is a joint venture between Smart Lab, as industry partner with experience in developing media facade systems, and the academic partner UTS, Sydney, set up to host a research group based at the faculty of Design, Architecture and Building. The laboratory concentrates on the integration of media technology within architecture, rather than as bolted-on additions to built forms. In our research, we aim to combine the two by weaving architecture and electronically applied and managed imagery together. By successfully interchanging their respective properties, the goal is to achieve media facade technology that can be applied in any given configuration, while at the same time allowing openings in any

given number, form or location. The media facade itself should provide the energy required to run the developed system in order to achieve a CO² neutral output. Thus our first research proposal, presented in this chapter, is divided into two major streams. Firstly, we envision a component that could be used for various media facade variations applied on a flat, curved, complex surface or even for a voxel facade. Secondly, we aim to design a component suitable for the requirements stated in the first point as an autonomous pixel, able to supply itself with energy and data without depending on wires.

Screen Types: Working Towards the Component

A component capable of weaving architecture and electronically applied imagery together needs to be adaptable to all kind of surfaces – planar, curved in one direction and complex shaped. The first principle for such a component is to understand electronically produced dynamic text, graphic or image on a screen, as an array of individual pixels where each pixel can have any desired colour information at any given time. By translating a screen into individual pixels, these can then be arranged in any given order, provided an equal distance from pixel to pixel can be guaranteed from at least one position, so the viewer can see and understand the media content. The second principle for the component is, therefore, that the media facade is made up of single elements. To make this clearer, each pixel can be equated with a sphere located in space that is able to change its colour at any time depending on media content. In the following, I want to discuss how this method allows a configuration of different screen types.

– Flat or Planar Screen

Based on the two principles described above, spheres can be arranged in X and Y directions to generate a screen with as-yet-undefined dimensions for the representation of dynamic text, graphics or images. Openings for windows or doors could be achieved by omitting pixels at the required positions.

– Curved Screen

The main difference between a curved screen and a flat or planar screen lies in the arrangement of the spheres. Instead of arranging them on a planar surface, they could be arranged on a tube-like surface curved in one direction. A surface curved in one direction will not, however, answer to the main challenge of combining complex shaped architecture and media technology. The spheres, therefore, need to be arranged differently, so they might have an equal distance in only the X and Y direction, but not in the Z direction.

– Voxel Screen

The principle of a sphere as a representative for a pixel can also be adopted for a voxel facade. A voxel facade describes a subclass of 3D-display technology built from a static volume that creates images without any moving parts. The 3D-display is made up of a number of spheres, where the distance of the centre of each sphere is the same as to the other neigh-

boring spheres in all three axes to create the 3D grid or a zone in which media content is presented. Through this arrangement, an equal resolution can be achieved in all three directions: images can be displayed in an X, Y, and Z plane and, more importantly, as a 3D-object. As a result, a 3D-object, surface, form or image defined by light points can be realised within the zone. Here too, the principle of having a sphere to create a colour with which an image or form is generated can be applied.

– Anamorphic Screen

According to the weblog *Daily Cognition*, the term anamorphic or anamorphosis ‘stands for a distorted projection or perspective requiring the viewer to use special devices or to occupy a specific vantage point to reconstitute the image’.⁷ During my previous research in *Chromatophoric Architecture*, I investigated and discussed the phenomena of a privileged perspective when designing for a voxel facade.⁸ The cultural and historical background for these privileged perspectives and the technique of anamorphosis are the principles discussed in the above mentioned publication and helped to build a foundation to develop a necessary understanding of complex curved screens. Significantly, the technique of anamorphosis was used in paintings for many centuries. *The Ambassadors* (1533) by Hans Holbein the Younger, now exhibited in the National Gallery in London, is a famous example of this painting technique. The painting has a distorted skull in the foreground, placed in the bottom centre of the composition, but when seen from a point to the left of the picture the distortion is corrected.

Work by the French photographer, Georges Rousses, provides a spatial example of a privileged perspective in contemporary art. Rousses’ photographic work translates the techniques of anamorphosis from a 2D drawing to 3D space. The technique used is a combination of projection, painting and photography. He first projects an image, such as a circle, onto the walls of a hall or corner of a room. Due to the position of the projector, for instance in a corner, the image is projected with a certain degree of distortion. Rousses then copies this image by painting it onto wall. As a last step, he positions the camera at the exact same point the projector used to be and photographs the painting. Through this technique he achieves two effects: 1) when looking at the photographed image the beholder gets the impression that someone has painted on top of the photograph and 2) when walking through the space of the installation the beholder will only understand and experience the anamorphic effect when in the position where the projector used to be.

In both examples, the viewer is in a privileged position that enables them to see the static image presented in the painting or photo. The same happens when viewing a curved surface displayed in a voxel facade. When representing a sinus curve-shaped surface, for example, by light points where each light point receives colour information to create an image, the beholder only can see and understand the image displayed from one position. From any other position, they can only see a cloud of light points and thus are not able to recognise the image.

7. ‘Unbelievable Anamorphic Illusion’, *Daily Cognition*, <http://www.dailycognition.com/index.php/2008/08/29/unbelievable-anamorphic-illusion.html>

8. M. Hank Haeusler, *Chromatophoric Architecture*, Berlin: Jovis, 2009.

Based on these principles, a screen that represents any possible media content would allow only a meaningful understanding of the displayed media content from one privileged position. The main difference between a privileged perspective in a voxel facade and an anamorphic screen is the dynamic nature of the representation of a surface in a voxel facade. Here, the displayed surface can alter its form and shape within the boundaries of the 3D light point matrix, whereas in an anamorphic screen, the surface as such is predefined. This achieves the same effect that Hans Holbein the Younger achieved in his painting, *The Ambassador*, but instead of just a static image, dynamic pre-recorded, live or interactive media content can be presented on the screen. The spheres are arranged in a regular grid over a complex shaped surface with equal distance in the X and Y plane, but not in the Z plane.

This method is used to address the first research stream based on developing a media facade system suitable for flat or planar screens, one directional and curved surfaces, voxel screens and non-standard or anamorphic images. Naturally, these pixels can be arranged in various other configurations. 2D plane surfaces or complex shaped ones are possible. 3D arrangements to allow a voxel facade such as a matrix in the form of a sphere (as well as other geometric volumes) – dodecahedron, cube, cone, pyramid, cylinder or star, to name a few, are also possible.

The principle of a sphere as representative of a pixel can also be applied to satisfy the requirement of having openings in the screen. However, when actually constructed, if conventional LEDs are used for the arrangement of these spheres, the concerns about the environmental impact and the necessary cabling mentioned earlier become evident. Therefore, I want to discuss research and development work that attempts to address these concerns by means of an autonomous pixel.

Autonomous Pixel: Development of Component

The concept of autonomy for a pixel is centred on the idea that the pixel is able to support itself with energy and data without depending on wires. Further principles are included into the concept of autonomy to support the performance of the autonomous pixel. The following list is also intended as a guideline for a later evaluation of this technology. The points listed here can be taken as basic principles that need to be considered when designing a media facade.⁹ Addressing these aspects when developing a component will ensure that the urban screen will cover all relevant features of a successful system suitable for a built environment.

1. It should be possible to alter the resolution and aspect ratio of the screen, depending on location and other specific requirements, thus making it suitable for the display of text, graphics or images of any given size on the screen. In addition, the system should be able to cover facades of any size and it should be possible to adjust the system to address budget concerns. To cater to the various forms of screen applications such as curved, complex or voxel, a screen viewing angle of 360° should be possible.

9. These are adapted from Haeusler, *Media Facades*.

2. The system should be suitable for an outdoor context, thus offering a solution for both indoor and outdoor locations, while being easy to clean and maintain. It should also be easy to replace damaged pixels.
3. It should be possible to address each pixel so that they can be arranged in such a way as to allow openings within the screen in any required shape.
4. A complete reduction of cables or wires to supply data from and to the pixel and power supply cables, thus guaranteeing fast installation.
5. In the interest of the environment, the energy required to run the system should stem from CO²-neutral sources.

Based upon these parameters, I want to describe the development of the autonomous pixel with the aim of ensuring that the assembly of virtually any screen formation is possible.

I want to start by discussing 1) the resolution and 2) aspect ratio when using an autonomous pixel to build any of the previous listed screen types. According to Wikipedia, 'basically, resolution quantifies how close lines can be to each other and remain visibly resolved. Resolution units can be tied to physical sizes, for example lines per mm or lines per inch, as well as to the overall size of a picture', such as lines per picture height or TV lines.¹⁰ In LED based media displays, generally speaking, the resolution is measured in pixel, a sample of the original image, containing as the smallest item, the information in an image. The optimum resolution for a screen can be roughly defined as distance of the screen to the beholder equals the distance of LED to LED (a distance of 5 metres would mean distance LED to LED equals 5 mm). Aspect ratio, on the other hand, is the ratio of its longer dimension in an image to its shorter dimension, normally its width divided by its height. Five common aspect ratios exist at present (4:3; 3:2; 16:9; 1.85:1; 2.39:1).

Whereas this ratio stays mainly fixed in conventional displays, the previously discussed screen types allow modifications in terms of resolution and aspect ratio, when each pixel is equated with a sphere located in space. The resolution can individually be defined by the location of the screen – if the distance beholder to screen is higher, one can increase the space between the pixels when setting up the screen. The same principle could be applied to the aspect ratio – the media content and its aspect ratio can be defined by the relation between width and height to either match one of the five common aspect ratios or to create an aspect ratio that suits the screen location or media content.

Thus the pixels can be arranged depending upon the location and the preferred viewing distance of the viewer. The system can show video, still images, abstract patterns, text and diagrams from a variety of sources: live, digitised or pre-recorded onto a computer, server or programmable chipset. Furthermore, by spacing the pixels so that they are not necessarily adjacent to one another, the effective resolution will be improved with the 'halo' of light that gives an 'anti-aliasing' effect. Whereas anti-aliasing, in a common understanding, is a technique of minimising the distortion effects known as aliasing when representing a high-

10. Wikipedia, 'Image Resolution', http://en.wikipedia.org/wiki/Image_resolution

resolution signal at a lower resolution. In the case of the autonomous pixel, a halo of light around the pixel will 'bind' the pixels together to such an extent that a higher resolution could be achieved visually. As a result, fewer pixels will allow a higher resolution and reduce the overall cost. If we return to the idea that a pixel could be substituted by a sphere able to display any colour at any given time, it would also be possible to ensure a viewing angle of 360°.

For an indoor and outdoor application, the LEDs and all other required technology such as power boards and control chips (as well other electronic components to be later defined) could be enclosed in a clear acrylic or polycarbonate form (such as the previously discussed sphere shape). The sphere is hermetically sealed to guarantee complete protection of the embedded electronics against the elements or vandalism and the like. These two points suggest that the ideal form for the autonomous pixel could indeed be a sphere. Another advantage of the acrylic or polycarbonate pixel sphere is that it is easy to replace faulty pixels. When properly sealed, it can be used in indoor and outdoor applications and can be easily replaced when defective, because the individually damaged pixel can be exchanged (rather than a whole series of pixels that are embedded in one system). Openings in the facade could be achieved by leaving openings in the array of pixel spheres to offer a vast number of possibilities for the design of these openings. Interrupting pixel arrays to create openings can, however, cause problems when addressing these pixels, an issue I addressed in the design of the Mercedes-Benz car booth in Geneva.

After defining the form of the pixel as sphere, I now want to address the core concept of autonomy for a pixel by offering a solution of how the pixel is able to support itself with 1) a supply of data from and to the pixel without depending on wires and, at a later stage, how one can eliminate 2) power supply cables. To obtain a better understanding of the technical nature of an LED screen, I want to dismantle an LED screen in order to list the individual components that are also essential for the autonomous pixel. First, each media facade will have a remote computer containing software able to run the system. In the case of the SmartSlab™ system, for example, the software sent ethernet packages to the display contain the information for the screen, so that it can display the right colour in the right location at the right time. The principle of sending ethernet packages with data is also adopted for the autonomous pixel. Here, a remote computer will also send data to the system, but instead of using cables, ethernet packages are sent via wireless data communication. Bluetooth or Wi-Fi systems are available in many devices to communicate data from one system to another. Consequently, the autonomous pixel will have a wireless communication device embedded in its system. Information such as colour and brightness can, therefore, be transmitted to the pixel. In order to send the right information to the right pixel, the pixel itself must relay information to the computer, specifying its position. The next device in the pixel is a wireless GPS system or similar environmental sensors (proximity, motion, acceleration) to determine its position in physical space. Now the pixel is able to receive the right information to the right position. Further items included would be a CPU capable of processing the received information and, finally, an RGB LED to actually produce the colour. Through wireless communication and location positioning the autonomous pixel can eliminate data cables. The next question is how all these devices can be provided with energy.

The power supply issue can essentially be solved by including a PV cell in the pixel sphere. This addresses the 'green' aspect that demands that the energy required to run the system come from CO² neutral sources. Moreover, the power cable that is normally required could also be eliminated. The energy produced by the PV cell will be stored in a battery to provide energy at night. Reducing the wiring ensures fast installation as the pixel only needs to be attached to a substructure in order to fix the pixel in its location. Although, in fact, even this is no longer necessary. The pixels are able to continuously compensate for movement by adjusting their brightness or colour when in use. Thus a large number of pixels could roll around together on the floor while a video could still be running on them and be visible.

Through these steps, all five points listed above could be fulfilled. The principle of a sphere as a pixel has developed into an autonomous pixel: an acrylic sphere hosting a wireless communication system (Bluetooth or Wi-Fi), a GPS or similar environmental sensors system to track location, a small CPU to process data, a PV cell to provide energy, a battery to store energy and an RGB LED to produce the colour. As demonstrated before, the spheres could be arranged in any physical configuration: a) in a 2D array (regular or irregular), b) anamorphic, c) in a 3D array (regular or irregular) that makes a specific form, such as a face (a project I will discuss at a later stage), d) in a 3D array (regular or irregular) that makes a complex abstract curved surface, e) in a situation where the pixels are rolling around (e.g. on a floor) or falling (e.g. like a waterfall) but constantly adjusting their location information to allow them to still show coherent images and video that appear to be still or stable in XYZ space, f) arrayed in a mesh of flexible or hinged joints or cables/rope, chainmail or fabric so that the pixels can be 'draped' over objects or supported in many 3D physical forms.

Work by Others

Having described the autonomous pixel, I want to position the work in a broader field of related research. I will briefly discuss recent media facades built by others in the research domain to illustrate current trends and directions. I have chosen these specific projects for discussion because they explore a similar direction to my own research. These works, which I have used to benchmark the current status and effect on media facades, are as follows:

Kunsthau Graz by Peter Cook and Colin Fournier/Spacelab – this museum for exhibitions of modern and contemporary art is the result of an international competition initiated by the city of Graz, Austria. Beneath blue acrylic panels facing the river and city centre, realities:united deployed a matrix of 930 circular fluorescent light tubes covering an area approximately 20m high and 40m across. By being able to individually adjust each bulb's brightness at an infinite variability with 18 frames per second, each lamp effectively acts as a pixel in the same way a pixel behaves in a computer or television screen. This allows low-resolution images, films and animations to be generated over the whole eastern facade; visible at a considerable distance all over the surrounding city.

Organic electroluminescent display that can stretch like rubber – this is a technology by Takao Someya, a researcher at the University of Tokyo working on OLEDs that are stretchable in 2 directions. According to a report reproduced in a technology weblog: 'The team

demonstrated a face-shaped display showing changing expressions, and a spherical screen to show weather information. By spraying a layer of carbon nanotubes with a fluororubber compound, a stretchy, conductive material was produced. The displays are thinner than plasma and LCD equivalents, and consume very little power, making them suitable for a range of different uses'.¹¹ The current prototype displays are 100 square centimeters in size while having a resolution of 256 monochrome pixels, and can reportedly be folded a thousand times without a decline in quality.

Mercedes-Benz booth Salon de' Automobile (Geneva 2004) – as previously described, the project is one of the few media facades with embedded openings other than square or rectangular formats. The design of the openings followed the brief for the booth, the technical requirements of the system being used, Barco MiPix20 LEDs, as well as addressing architectural concerns of the appearance of a facade. Moreover, the MiPix20 required specific arrangements of the pixels on the facade, determined by issues such as cable length and position of the pixels to one another, to name a few of the issues addressed. These demands on the system were the main motivation in designing the openings of the media facade. This project is one example where specific requirements dictated by the technology led to the execution of an architectural design for a media facade. The booth achieved an integration of architectural designed openings in a media facade. The facade design followed the principles of media facade design, considering basic requirements such as daylight and ventilation for rooms located behind the media facade. Furthermore, by considering and adopting the technical requirements of the technology used, media was integrated into architecture, and not simply added on.

Even though they differ in the way that they been designed or constructed, these projects all share a common element which is relevant for this research: all the examples have achieved partial aspects of the autonomous pixel. The Kunsthhaus Graz, by combining complex shaped surfaces and media technologies as well as the organic electroluminescent display have the potential to be applied to a complex surface. The Mercedes-Benz booth is relevant for its architecturally designed openings. Nevertheless, all these previous projects fulfill only a fraction of the possibilities the autonomous pixel has to offer. Up to this point, screens have stayed mainly on a planar level, unable to integrate openings and dependent on a large cable infrastructure located behind the screen. The autonomous pixel, on the other hand, would allow the following advantages over existing screens:

- The physical configurations of pixels could be ordered in a highly varied way to achieve existing configurations, while at the same time allowing a complex curved screen with an anamorphic technology.
- Openings in any form are possible thanks to RFID or GPS tracking
- The use of Wi-Fi or Bluetooth technology reduces cabling and the integrated power supply of the pixels.

11. 'New Organic Electroluminescent Display', *Anders Bekeken Blog*, May 5, 2009, <http://www.stichtingmilieunet.nl/andersbekekenblog/energie/new-organic-electroluminescent-el-display.htm>

- It is environmentally compatible through the use of PV cells
- The concept of an individual pixel allows the cost of the screen to be ideally controlled.

This brief list of works by others in the research domain demonstrates the significant contribution of the autonomous pixel to the field of research. I will now turn to the practical application of these ideas by introducing a prototype that led to the patenting of ideas expressed by this research.

Work in Progress: The Janus Screen Prototype

The Smartlight festival was a major component of Vivid Sydney, a new public festival held in 2009 between May 26 and June 14 that aimed to transform the city into a 'living canvas of music and light'.¹² Vivid Sydney was one of five anchor events in the first ever NSW Master Events Calendar created by Events NSW on behalf of the NSW Government. The UDM_RL / UTS Sydney participated in this festival with an installation called the Janus screen. Here first principles of the autonomous pixel and anamorphic screen were tested and further developed. In the search for a complex surface we decided to generate a screen shaped like a face to have a maximum number of different curvatures combined in one media facade. The idea of a face-like facade also assisted in generating meaningful media content for the installation. The media content was developed in correspondence with the face shape and collected social data. Internet sites allowing the sharing of social data and images have gained greatly in popularity in recent years. To date, these shared images and communications have been kept on personal displays and did not impact on a public mood in the public space. The project proposes a pixel facade generated from 183 grayscale-controlled light spheres arranged as a giant human face hanging above the street. People can send pictures either by MMS or a website to the facade for display – the currently leading (or most relevant) expression then modifies and animates the face. The name 'Janus screen' was inspired by the two-faced Roman god Janus and by Greek theatre masks. Through emotional expressions, a feedback loop was created between the private mood of the individual and a public image.

– Screen Technology

The screen comprised 183 pixels arranged to display the captured expressions. Contrary to conventional screens that display media content on a flat display surface, the 'Janus screen' imitates the complexity and form of a face. In this way, the screen creates a surprise effect by being an anamorphic screen, a screen that is only readable from one certain privileged perspective. As previously described, this privileged perspective effect is achieved by positioning the sphere-shaped pixels in the form of a non-standard complex screen. All 183 pixels are positioned within a 3D-matrix with defined distances in X and Y direction. Due to the space between the pixels, a different screen is perceived from each different spatial position. The light points were built of 100mm polycarbonate spheres containing a white LED, a PV cell, a battery and a CPU. The autonomous pixels were attached to each crossing point comprising an acrylic substructure with horizontal and vertical elements.

12. Vivid Sydney, held from 26th May to 14th of June 2009, <http://vivid Sydney.com/about/>



Fig. 2: Autonomous Pixel prototype used at the Janus screen.
© M. Hank Haeusler



Fig. 3: Face recognition software for Janus screen. © Mona Lieb, Frank Maguire, Jason McDermott

– Software Screen

The software received information either from the homepage platform provided by the organisers (where participants could upload their image) or via images sent as an MMS picture straight to a site. Thus participation before and during the festival was guaranteed as well as via mobile phone in front of the screen. Various face recognition software is currently available. They all capture a number of points on a face. These captured expression were then the input to trigger a prerecorded video of a face showing the expression previously provided by the participants. The displayed expression stayed for a period of 15 seconds before the screen returned to a 'neutral' expression before starting again with the next expression input.

The screen itself was installed at the centre of Kendall Lane in The Rocks, Sydney. The location, a lane approximately 80m long, helped to give viewers a clear view of the screen from the entrance to the lane. This was intended to place beholders into a privileged position when first viewing the installation and allowing them to experience the effect of an anamorphic screen when walking along the lane. The further they walked, the more distorted it became. It was no longer possible to understand or see the image at all when standing directly underneath the screen.

At this first stage, not all aspirations of the autonomous pixel could be fulfilled due to cost and time constraints. Nonetheless, the installation did cover most of the aspects realistically achievable in a three month period developing, designing, testing and building the facade. The screen achieved an anamorphic effect and through the built-in PV cells was independent of any power supply. At this early stage, it was not yet possible to embed wireless communication into the individual spheres.

Conclusion / Evaluation

The Laboratory's research interest lies in the integration of media technology within architecture, rather than as bolted-on additions to built forms. We are striving to weave architecture and electronically applied and managed imagery together so that screen technology can be applied in any given configuration, while allowing openings in the facade in any given number, form or location. Furthermore, the systems developed in our research should be CO² neutral by providing their own required energy. The evaluation of the research should, like the research itself, be divided into two major streams: 1) the evaluation of a component that could be used for various media facade variations applied on a flat, curved, complex surface or even for a voxel facade, and 2) the development of a component suitable for the requirements stated in the first point as an autonomous pixel, able to support itself with energy and data without depending on wires.

The concept of dividing a screen into individual pixels, translating the intangible pixel into a sphere and arranging the spheres in various forms to generate different screen types could answer the first research stream. This offers a response to the research background and interest expressed at the beginning of the chapter in finding a solution within screen technology to answer demands raised in the architectural discussion of non-standard complex surfaces. Complex shaped screens are now possible. Furthermore, the field of media facades and media architecture could be enriched by the principle of the anamorphic screen. The system principle of spheres as pixels allows openings within the screen, thus offering a possible answer to the call for windows and doors.



Fig. 4: View of the Janus screen at the SmartLight Festival in Sydney May – June 2008. © Mona Lieb, Frank Maguire, Jason McDermott

The autonomous pixel also satisfies the requirement for openings by avoiding any restrictions to the shape of the openings caused by cabling. Here too, the research claim was fulfilled and a prototype has been developed that has been patented and is now awaiting further development into a marketable product in the next few months. The Janus screen provided proof of the concept for complex curved screens and marked the beginnings of the development of an autonomous pixel.

In the course of this research, the research team has contributed to the development of media and architecture by introducing a new screen type, the anamorphic screen, and a new technology, the autonomous pixel, both developments that could radically change the way media content is displayed.

ACKNOWLEDGEMENTS

I would like to acknowledge the work of my colleagues at the Urban Digital Media Research Laboratory (UDM_RL) at the UrbanAid Group at the University of Technology, Sydney, in developing, designing and achieving the research to this point. Ideas and the concept to the patent stage of the autonomous pixel were developed together with Prof. Tom Barker, as was the entry design for the Smartlight festival. The Janus screen was developed and built with the great effort and support of Mona Lieb (Research Coordinator), Frank Maguire and Jason McDermott (Development Software and Electronics), John Holland (Screen Assembling), as well as other colleagues at the faculty of Design, Architecture and Building. Both the anamorphic screen and the autonomous pixel were patented by SmartSlab™, London / Sydney as part of the industry / academia research cooperation between SmartSlab™ and the University of Technology, Sydney.

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LED TECHNOLOGY AND THE SHAPING OF CULTURE

SEAN CUBITT

Prospectus

Much has been written and debated concerning the social and cultural benefits as well as the commercial applications of large screens in public places. Siting, content and aesthetics have been considered in the light of architecture, urban planning, human geography, sociology, media and communications and the visual arts. Little has been said so far on the technical infrastructures, at least outside the concerns of engineers and operators charged with purchasing or leasing screens. This essay is intended to help bridge that gap. It undertakes an overview of the technologies involved at the hardware and protocol levels in the operation of the large screen in Federation Square in Melbourne, Australia. In the first instance, it looks at LED technology. It backs that up with the protocols – in this instance the compression-decompression algorithms or codecs – which underlie video projection. This first analytical section suggests that there is a history and, because of that, a series of constraints to the design of the technologies deployed in urban screens. The second interpretative section uses some of the ideas circulating among contemporary media and communications researchers to inquire whether the fit between hardware and codecs expresses a particular kind of social organisation, and whether, if that is the case, innovation in design and content is inevitably constrained by those historically inherited features, or whether understanding them may be an avenue to innovation.

Analysis

Oleg Losev was one of the thousands who died in the siege of Leningrad in the winter of 1941-2. In his twenties in the 1920s, he developed the first light-emitting diode (LED), the basic technology of contemporary urban screens. The research lay fallow for decades. In 1955, RCA developed infrared LEDs, GEC a red LED in 1962, and a graduate student of the lead GEC scientist produced yellow LEDs in 1972, with green following soon after. Costs however were high, around US\$200 per diode, until Monsanto developed marketable red LEDs for car signaling lights in 1968. To build screens attuned to the standard colour signals used in electronic imaging, the missing element was blue, which only became available in bright and manufacturable form in 1993.¹

Light-emitting diodes (LEDs) have some wonderful properties. Some screen technologies are energy-hungry. The LED can average as little as 90 volt-amperes (loosely equivalent to watts) for a 448 x 448mm tile with voltages between 3.6 and 4.3: compare the 32,000 volts required for a colour cathode-ray tube (CRT). Some displays need you to be directly in front of them: LEDs can be seen anywhere in an arc of 120 degrees. They can be manufactured

1. Shuji Nakamura, Stephen Pearton and Gerhard Fasol, *The Blue Laser Diode: The Complete Story*, New York: Springer, 2000.

to withstand anything the weather (and most things the audience) throw at them, and can operate over a startling range of heat conditions. The modules used in the Federation Square big screen are billed by the manufacturer Barco as having 100,000 hour lifespans, very important to the always-on requirements of public screens. Most of all they are bright: bright enough to see in big sunlight; so bright that the Federation Square briefing for potential users recommends adding 5 per cent black to pure white screens because otherwise they are too bright to look at. High density models use 14-bit colour addressing, which gives a colour range in the trillions, at a resolution of one centimetre in Federation Square's SLite 10 XP FX tiles. Low power use, high luminance (brightness), long lifetimes and robustness in most environments have made LEDs favourite components of traffic lights, brake and indicator lights on cars and bicycle lamps. Organised in tiles – Federation Square has an array of 108 – which themselves can be assembled into screens of effectively unlimited size (although the larger the screen, the more processing power is required to run them). Each of the 108 tiles is 44 pixels wide by 33 high, giving a total somewhat over 155,000 individual LEDs. Each tile is calibrated at 6,500 NITs (in European measurement 6,500 candelas per square metre). For comparison, a cluster of five LEDs on my bicycle headlamp can act as a bright handheld flashlight. Given the total surface area is 10,752mm x 6,048mm, or about 60 square metres, the screen can illuminate the huge crowds that gather for important sporting and social events, and light up the plaza when smaller numbers idle the night away in the square, making it a safer and friendlier place.

Audiences and even content-producers have little reason to care about how this important technology works. Yet the intricacies of design can prove significant. LEDs are a variety of diodes, the ubiquitous valves that first emerged in early radios. The principle of these old thermionic diodes was that a heated cathode would release a cloud of negatively charged electrons that could then be attracted to a positively charged anode. But the electro-chemical composition of the cathode didn't encourage flow in the reverse direction. Hence the term valve: like a plumber's valve, diodes only allow flow in one direction. The vast majority of diodes in use today are built around positive-negative (p-n) semiconductors, where charge can flow from the positive towards the negatively doped elements of the chip, but only with difficulty (and greatly reduced current) in the opposite direction, effectively providing a reliable on-off switch for binary digital processes. In an LED, electrons emitted in one area of the chip are attracted into 'holes' in the other, in the process releasing energy in the form of photons: light. Silicon is the wrong kind of material for this process, so other semiconductors like gallium arsenide and gallium nitride are used, the precise material defining the wavelength of the emitted photons and thus the colour.

Gallium is a vital component. Though its major use is in LEDs, new uses in solar power cells suggest it may become a strategic metal in the same way that germanium has. The major source is the aluminium ore bauxite, the refining process for which is extremely hazardous. Australia has the largest mineable reserves, followed by China, which in recent years has been investing heavily in Australian mining interests, not only to secure building and manufacturing materials, but to ensure supplies of strategic rare earths and other critical raw materials for the electronics industry. The LED is, like all advanced technologies, deeply embroiled in the globalisation process and the new terms of struggle for strategic

advantage in the era of free trade, especially as major governments plan for the post-oil economy. Similarly, even the minute amounts of gallium, indium and arsenic used in doping semiconductor parts are rare enough to need to be recovered, and their toxicity is a critical factor in the global trade in waste and its ultimately social impact in the recycling villages of Southern China and West Africa.² (It should be noted that epoxy is also classified as hazardous waste in many jurisdictions). The common use of sapphire as a substrate in LED fabrication is probably less significant in recycling terms, but it is worth recalling that for the last decade, the world's largest producer of sapphires is no longer Australia but Madagascar, linking LED technology back to the economics of underdevelopment, and the suspicion that there may be some link to the 2009 coup in the Indian Ocean island state.

The chip is typically housed in a reflective cup which directs the light through a lens, usually made of epoxy, the catalytically hardened adhesive, whose chemical properties and shape are structured to maximise the refractive index and so the amount of light which can be made to contribute to the LEDs central function: illumination. Each LED then emits light in a specific waveband. To produce full-colour images, each pixel of the image signal needs to find a 'pixel' composed of at least three LEDs, one each for the red, green and blue areas of the spectrum to which the human eye is sensitive, and on which digital image processing is based. In the high-density, high-resolution Barco S10XP FX tiles used in Federation Square's LED display, four LEDs form each point in the grid: two red, one green and one blue (not the standard Bayer pattern used in most digital devices). The wavelengths of each slightly overlap, as they do in the human eye (which is why most of us see yellow as the brightest colour, as it is overlapped by both red and green receptors in the retina). As with any screen, viewing distance is paramount: too close, and the array turns back into data instead of significant content. The background to the tile is also significant: too pale and it becomes visible under the LEDs, creating a noisy image; too dark and it risks absorbing too much of the available light they produce. Shaders also help to baffle daylight, and provide the kind of apparent increase in resolution that the Sony Trinitron delivered through masking in cathode ray tubes in the 1980s. The screen surround holds the tiles in place, helps to frame the image, houses the infrastructure, and adds more shade from the harsh direct sunlight of the brilliant Melbourne summer.

Equally critical is the handling of the incoming signal. Video and still images have to be compressed by the sender and decompressed by the receiver, partly to maximise efficient use of the infrastructure such as the carrying capacity of cables or the choice of colour spectra. The standards used for this process are called codecs (short for compression-decompression) and are established through the International Telecommunications Union (ITU) on behalf of the International Standards Organisation (ISO). These codecs ensure that common standards prevail on systems like the Internet, and also that media content can be freely exported into international markets. Federation Square's recommendation is for one of three codecs: MPEG-2, Flash and JPEG (the latter for still images).

2. Basel Action Network, *Exporting Harm: The High-Tech Trashing of Asia*, 2002, <http://www.ban.org/E-waste/technotrashfinalcomp.pdf>; Basel Action Network, *The Digital Dump: Exporting High-Tech Re-use and Abuse to Africa*, 2005, <http://www.ban.org/BANreports/10-24-05/index.htm>

Flash is the proprietary name for Adobe's *Shockwave* web-ready animation format, originally developed by Macromedia, and based on the H.261 codec. Because it is specifically designed for the World Wide Web, it is a 'lossy' codec, sacrificing image quality for speed in transmission. The major losers in the process are resolution, colour and the accurate registration of movement. H.261 aggregates pixels into a hierarchy of blocks and calculates an average value of colour and brightness for each block, hence losing resolution. It uses another algorithm to send colour information that re-encodes the red, green and blue (RGB) signal in terms of luminance and colour-difference components (YG), a process in which fidelity is compromised and information about the colour gamut (the range of hues that can be displayed) is condensed.³ Finally, it uses another algorithm to find key frames in a sequence of images – for example the beginning and end of a scene of a footballer running across a field – and averages out the amounts of green and blue in large areas of the image, on the principle that the interesting element is neither grass nor sky but the action. This technique, called vector prediction, reduces the amount of bandwidth required dramatically, and is excellent for animations, which typically use large areas of flat colour. On the other hand, it tends to produce disconcerting effects of judder, and lumpy, large blocks of pixels tend to stay a single colour between keyframes, with a sometimes eerie effect on live-action sequences. These are especially apparent on YouTube which uses the H.261 codec throughout.⁴

MPEG-2 is the most widely adopted of all motion codecs, and underlies DVD as well as such widely used applications as Windows Media Player and RealPlayer. It also uses vector prediction algorithms, though not to anything like the same extent as H.261. The MPEG element refers to the Motion Picture Expert Group, a subgroup of the Internet Engineering Taskforce, which in turn recommends to the ITU and ISO. This codec has been the gold standard for decades, but is in the process of being supplemented with MPEG-4, which provides a range of additional capabilities, especially in high-definition and 3D imaging. This standard also links us back to the global economy because it includes over 640 patents held by a startling variety of individuals, corporations and governments, each of whom has to agree to their use, and to pricing structures and contractual obligations. Here, as in the case of H.261, the end result is not exclusively a product of the optimum engineering solution but of necessary compromises. While many of these can be articulated in terms of profit and power, many cannot. Compatibility with older equipment is important, so that the new codec is framed by the history of the technology and of previous policy decisions. Issues of universal access, widely held among Internet, telecommunications and broadcasting regulators and stakeholders, demand respect for such features as rural delivery in remote areas over often unreliable telecommunications and broadcasting media: conditions which make extreme compression and streaming especially significant. Changing codecs also requires a significant investment in software that has to be paid for from what is typically a static pot of consumer spending,

3. Douglas Bankston, 'The Colour-Space Conundrum, Part 1: Seeking Standards', *American Cinematographer*, 2005, <http://www.theasc.com/magazine/jan05/conundrum/index.html>; Douglas Bankston, 'The Colour-Space Conundrum, Part 2: Digital Workflow', *American Cinematographer*, 2005, <http://www.theasc.com/magazine/jan05/conundrum/index.html>
4. Sean Cubitt, 'Codecs and Capability', in Geert Lovink and Sabine Niederer (eds.) *Video Vortex Reader: Responses to YouTube*, Amsterdam: Institute of Network Cultures, 2008, pp. 45-52.

advertising revenue and government funding. The new codec has to be future-proofed to minimise the risk of having to go through the whole process again too quickly, so it must be framed in the light of likely technical developments and projections of social need. Perhaps most of all, in these circumstances, it must both be and be seen to be essential.

Federation Square's screen uses Scala, a scheduling and content management software package for digital signage which, according to its designers, 'is a network of customizable digital displays that you can control electronically using a computer, allowing you to change your content remotely for the most targeted messaging possible'.⁵ Alongside a second scheduling package, On The Air, the screen operators can program materials not only in the recommended formats but in virtually any signal format that can be delivered through the industry-standard connections VGA (video graphics array) and SDI (serial digital interface) – embracing everything from high-definition to mobile phone generated content. Scheduling and programming software allows all these signals to be displayed similarly on the large screen (though obviously not to provide high-resolution versions of images supplied in low-resolution formats). The colour responsiveness of LED screens is comparable to that of plasma and other new screen technologies where the signal contains enough information, and the resolution matches the standards adopted in Australia for high-definition television (576p, 720p and 1080i/p). Colour is, however, something of a problem. The various codecs employ different colour systems. Some variants (including sRGB and Adobe RGB 1998) are absolute colour spaces, others, like YCbCr, are ways of encoding absolute colour space for transmission. These systems have been developed for specific challenges. sRGB was developed by Hewlett Packard and Microsoft as a common denominator for the very differently calibrated screens attached to a network. It displays about 35% of the spectrum visible to human eyes, in the measurements established by the International Commission on Illumination (CIE). Adobe's RGB 1998 is a translation of the printing industry's CMYK colour space into the red-green-blue of display screens and offers about 50% of the visible spectrum. YCbCr is used in the MPEG-2 codec among others and rests on the observation that the human eye is much more sensitive to variations in luminance (brightness) than colour.⁶ MPEG-2 reserves the largest part of the signal for the luminance component (represented as Y), encoding colour as degrees of difference from blue and red (chrominance minus 'r'ed; chrominance minus 'b'lue). Incoming signals must be recalibrated to make use of this colour system, and the fact that the dominant wavelengths (which determine the colour of the individual LEDs) are different from those of phosphors used in CRTs and plasma screens.⁷ Handled automatically in the digital transmission of signal from source to screen, the colour gamuts get manipulated several times before they arrive. To get some reasonable consistency requires a set of technical standards that typically arise from the electronic engineering community and, if generally applicable, become standard practice and even acquire recognition from standards

5. Scala: Global Digital Signage, Signs & Displays Leader, <http://www.scala.com>
6. P. N. Tudor, 'MPEG-2 Video Compression', *Electronics and Communication Engineering Journal* (December 1995); http://www.bbc.co.uk/rd/pubs/papers/paper_14/paper_14.shtml.
7. Ian Ashdown, 'Accurate Modelling of LED Colours: A Scientific Approach', *LEDs Magazine*, October, 2005, pp. 21-23; Kim Moon-Cheol, 'Optically Adjustable Display Colour Gamut in Time-sequential Displays using LED/Laser Light Sources', *Displays* 27.4/5 (2006): 137-144.

bodies and manufacturers. At this level, the apparently inconsequential questions of colour management tie LED technology, like any type of screen technology, into global systems for the governance of the media.

Between the materials and the specifications, then, LEDs are in some ways typical of contemporary innovation in media technologies. They articulate with the economic and the political circuits of globalisation, with issues as diverse and on occasion fraught as the proper balance of interests in global media governance, and the gap between those who take the risks and those who reap the rewards in the global economy. Globalisation scholars debate the relative influence of institutions, economics, politics and technologies in the emergent global regime, and while LEDs may seem removed from these grand debates, a closer study reveals that they are exemplary in both expressing the histories that gave them their shape – for example, as raster arrays – and in providing as it were a mirror to the urban societies that gather in their light.

Interpretation

One implication of this shaping of LED technology in the normative practice of electronic engineers and regulatory standards bodies, and in a more distant way by their implication in the circuits of global capital, is that the technology articulates what Deleuze and Guattari refer to as a diagram of the contemporary world: a structuring common shape around which many of our social, cultural and technical achievements gather. It would be a gross over-statement to move from such a position towards saying that the display technology standardises all inputs to a single homogenous format. But that possibility does need to be discussed: either the operating principles of the screen are such that they not only constrain but in some sense determine the uses to which it can be put, or knowledge about those principles can inform a richer and deeper use of this and other urban screens in future. Either way, the question has some significance.

Standardisation is necessary, as we have seen, in order to get different devices to speak to each other. It is also essential in creating the conditions of a free market. As an instance of the paradox of liberalism that Foucault observes, the global coordination of engineering standards is at the same time a governmental intervention and a condition without which freedom does not exist.⁸ Freedom is not the given and natural condition of existence. Rather, for the liberal, the condition of populations without regulation is a Hobbesian war of each against all in which nothing can flourish because no one has the incentive to work together to create infrastructure or trust. If competition is natural, then so is theft, fraud and killing. Regulation creates the conditions of contracts, obligations and reciprocity. Regulation is the basis of freedom: the state must intervene, or there can be no market, even though the principle of minimum government persists, and the state tries with even indecent efforts to remove itself from the scene. Yet were it to do so, then such basic things as the standard size of screws, without which none of these technologies can function, would not emerge

8. Michel Foucault, *The Birth of Biopolitics: Lectures at the Collège de France 1978-1979*, ed. Michel Senellart, trans. Graham Burchell, Basingstoke: Palgrave Macmillan, 2008.

‘naturally’, things could not be traded, and the global market would most certainly not exist. Some form of government has to function on a daily basis to ensure that the complex inter-connecting systems of global communication do not crumble. Without regulation, no free market in images.

At the same time, standardisation can be interpreted as the dead weight of the past bowing down the shoulders of the present. For all the lip-service to innovation, both market pressures and regulatory regimes have a tendency towards ossification: towards cartelisation or monopoly, and towards the adoption and maintenance of the commonly achievable and familiar standard, rather than the one best fitted for the job – as witnessed by the reluctance of the cinema industry to adopt sound, of the radio industry to move from AM to FM, or of the triumph of VHS in the format wars of the 1980s.⁹ In this vein, we might argue that the innovation of LED technology has nonetheless found itself constrained by the prior adoption of the raster display: the grid of pixels scanned in numerical order in horizontal rows from left to right and from top to bottom. This grid has its own history, from halftone printing to wire photography and thence to the cathode ray tube and the computer monitor. Now the raster grid is normalised as the form not just of the display, but in many instances of the signal being prepared for them. This Cartesian grid is one of the great signatures of modernity, from urban planning to modern art, and from the cartographers’ longitude and latitude to the rows and columns of Microsoft Excel. From its origins in the mathematics of graphs, the grid became the central tool of statistical social science and thence of the emergent biopolitical management of populations in the later nineteenth century. In its core application in finance, from double-entry bookkeeping to spreadsheets,¹⁰ just as in the serried ranks of supermarket shelves, the grid is also a central organising tool of contemporary economics: the visible expression of the general equivalence of all commodities, their fundamental identity with one another. The grid as it emerges in electronic screen design is then both an expression of the age that produces them, and an organising principle that shapes and structures images and texts in their commonest media of transmission: screens, from handhelds, computers and TVs to the billboard scale screens of the new urban landscape.

As Adrian Mackenzie notes, the way a codec ‘pulls apart and reorganizes moving images goes further than simply transporting images ... Like so much software it institutes a relational ordering that articulates realities together that previously lay further apart’.¹¹ Much the same can be said about the hardware underpinning digital imaging transmission. The brief account of MPEG-2 and H.261 codecs above indicates not only the homology between hardware and software, but their mutual determinations, their intertwined fundamentals. The infrastructural

9. Donald Crafton, *The Talkies: American Cinema's Transition to Sound*, History of the American Cinema, Volume 4, Berkeley: University of California Press, 1997; Douglas Gomery, *A History of Broadcasting in the United States*, Oxford: Blackwell, 2008; James Lardner, *Fast Forward: Hollywood, the Japanese and the VCR Wars*, Mentor: New York, 1987.

10. Alfred Crosby, *The Measure of Reality: Quantification and Western Society, 1250-1600*, Cambridge: Cambridge University Press, 1998.

11. Adrian MacKenzie, ‘Codecs’, in Matthew Fuller (ed.) *Software Studies: A Lexicon*, Cambridge, MA: MIT Press, 2008, p. 54.

layer of LED technology and the layer of codecs that lies over them are mutually dependent. The codecs in turn provide the basis on which the layer of applications like Windows Media Player can operate. To this extent, they are analogous to the protocols which Alex Galloway has suggested control online behaviour in the Internet.¹² These key protocols like TCP/IP, the fundamental platform which allows computers to talk to each other, shapes and structures the kinds of activities that can be carried out on the higher levels of applications like the World Wide Web or social networking. Similarly, the raster grid of electronic display systems is the architectural foundation of media representations. You can build any kind of house you want, but it has to fit on the foundation. Like athletes, you can be as creative as you like, but only within the rules of the game.

The counter-argument to this potentially depressing scenario is the argument that the rules serve not only the commercialisation of public space in the form of LED billboards, but also the remaking of public space in creative and interactive developments of the medium of big screens. While there are certainly reasons to continue developing alternative technologies, there is no need to abandon those we already have at hand. Since the late nineteenth century, a surprising variety of thinkers from Peirce to Žižek have argued that human beings have a tendency to react to the chaos of perception by creating a world of order: intellectual, mathematical, linguistic, conceptual, symbolic. This tendency can be described as a drive towards order. Drives, however, are dangerous things. Unconstrained, hunger and sex can make people mad; and the drive to order is no different. At a personal extreme, it becomes obsessive, and at a social extreme, fascist. Like the sex drive, it can twist into its violent opposite and become a rage for formlessness and destruction. But like both sex and hunger, it can also be sublimated. Paolo Virno suggests, using the case of language, that an instinct that might become destructive can be contained or in some sense healed by the application of a homeopathic principle: a little of the poison to cure the disease.¹³ This might well be the function of art: to provide that grain of ordering which cures our instinctive drive of its most terrifying extremism.

The question then is about the kinds of order that the raster display is capable of, especially when it is moved from the domestic TV and the personal computer or handheld screen to the scales of public spaces. The interchangeability of units, the equivalence of the mathematical underpinnings of colour and pixel addressing, the standardisation of units all point towards the model of the commodity form, whose specific uses and meanings are always subject to the overriding economic truth that every commodity is exchangeable for any other, and that all are in the end equivalent in the universal currency of money. Similarly, the averaging of colour values and the use of vector prediction point us towards the biopolitical managerialism of contemporary governmentality. In this case, our screen technologies are admirably fitted to be the medium of choice for the expression and reproduction of what might be called the database economy: the combination of information, capital and power most typical of the twenty-first century.

12. Alexander Galloway, *Protocol: How Control Exists After Decentralization*, Cambridge, MA: MIT Press, 2004.

13. Paolo Virno, *Multitude: Between Innovation and Negation*, trans. Isabella Bertolotti, James Cascaito and Andrew Casson, New York: Semiotext(e), 2008.

But at the same time, the neo-liberal consensus produces effects that escape any overarching governance. It is often said that the free market is only free for goods, services and finance, which traverse the global economy with no respect for boundaries, while flows of people are everywhere subject to strict immigration controls. While this is sadly true, it is also the case that rarely in the history of the species have people been so mobile as they are today. On the one hand, this is a requirement of the global economy: labour needs to be able to move where the jobs are. Such, for example, is a key logic to European union, which allows those who have made it to the interior of Fortress Europe to move freely within it. But as Kevin Robins observes, such mobility creates a new kind of public.¹⁴ In the days of bandwidth scarcity, broadcast media imagined the public as national, sedentary, homogenous. But today, increasingly, we inhabit networks rather than nations; we move across boundaries; and we are multilingual and culturally flexible. These conditions are such, Robins continues, that the old terminology of minorities, communities and identities is no longer appropriate: we live in a post-community, post-identity world of diversity. It might be possible to argue that diversity is a new method of exploitation. Shake the bag to get new cultural combinations to produce new kinds of cultural content, new user-generated innovation without challenging the overall logic of the status quo.¹⁵ But equally, it is possible to see in these new, mobile and flexible formations new kinds of order which thrive in the gaps between the over-ordered world of the database economy, and which perhaps point towards an emergent type of social order beyond what we experience today.¹⁶

It is some of the apparently extrinsic and contingent features of large screen displays that need to be understood. The extremely wide viewing angle that they accommodate is one of these. The cinema, more so the domestic television set, and most of all the LCD screens of laptops and handhelds, organise us ever more into an optimum viewing position directly in front of the screen, but urban screens allow us to spread out, to form our own viewing groups, to create cells of friends or club supporters. But the kind of amphitheatre experience this allows also permits these cells to swarm, reform, mingle and generate new fluid, temporary communities. Where screen operators provide interactive capabilities, these shifting alliances and temporary tribes bubble with new kinds of social invention, and the invention of new kinds of sociality. Just as interesting is the disjuncture of screens from the perpetual onward flow and repetitive cycles of twenty-four hour broadcasting. While urban screens may emulate broadcast cycles, they also have the capacity to delay, to collect interactions over time, for example, allowing the building of microhistories for people passing through, messages left to be collected and responded to, microalliances to form and reform, open to interjection from strangers, to mutation into new histories or to intersect with the microhistories of other groups.

14. Kevin Robins, 'Transnational Cultural Policy and European Cosmopolitanism', *Cultural Politics* 3.2 (2007): 147-174.

15. Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom*, New Haven: Yale University Press, 2006.

16. Brian Holmes, 'Swarmachine: Activist Media Tomorrow', *Third Text* 22.5 (2008): 525-534.

Urban geographers from Lefebvre to Sassen have noted the importance of place to these new mobilities.¹⁷ Loyalties among newly nomadic global citizens are far less likely to be to nations than they are to cities. The urban screen is a site in which those loyalties to place intersect with other networks: diasporas, kinship, friendship, work, sport and the formal and informal economies that characterise migration. To provide a site where such networks intersect is to exploit the properties of exchangeability and probability that rule the raster arrays and codecs of big screen displays, but in ways which are neither subjected to the dominant governmentality nor merely resistant to it. Instead, they produce out of the raw materials of screens the affordances that by and large are ignored in commercial and even artistic productions for them. It is only where these qualities of exchange are restricted to advertising that they become oppressive. It is only when the conception of the public is restricted to the old model of the homogenous national culture that prediction works as a mode of biopolitical governance. Where users interface with the raw structure, the very diagram of the database economy, they are capable of exploiting properties which are otherwise unused. For some commentators, these user-generated innovations are simple mechanisms for encouraging new forms of capitalist commodification.

Cynically we might say that users are there, as Vilém Flusser argued of photographers, to provide the level of randomness that a thoroughly planned and systematised apparatus can no longer generate on its own.¹⁸ That this can be the case is clear from the expropriation of avant-garde techniques by advertisers. But the temporary, autonomous and interconnecting publics of the new urban squares are not necessarily engaged in plays of power and economics, or if they are, it is in effervescent exchanges of intangible goods which still remain properly the public sphere: ideas, jokes, sexuality, play. Their unpredictable nature is not, like some forms of contemporary art, mere resistance to predictability. Instead, they are dynamics invented for the fun of it, dynamics that are entirely situational, and difficult to generalise, like the famous episode when the audience for the Sorry Day telecast in Federation Square turned their backs on the leader of the opposition when he tried to upstage the Prime Minister's apology. There is nothing in that action that can be usefully repeated or reused. A spontaneous organisation of the crowd itself, it belonged exclusively to that moment: you had to be there.

This is the remarkable opportunism of the new networked crowd. Rather like the emergence of Linux from the hurly-burly of the Internet, spontaneous organisation is enabled by but exceeds the technologies which give it birth. In the case of Linux, there are, of course, ways to turn free and open source software into commercial services like Ubuntu and Red Hat. But the fluid nexus of Linux partisans is demonstrating, like the crowds for urban screenings, that they are capable of far more than reinvigorating a moribund capitalism. Such innovation may yet prove to be a model for a more open and more equal mode of socialisation, built

on the very logic of the database economy, but exceeding it at every turn. In many respects, the urban screen passes towards another aspect of the emerging world: even at this scale, it is environmentally cheaper for a large crowd to watch one screen than to disperse and watch thousands. But the democracy to come will also have to embrace the extraction of raw materials, the conditions of production, and the eventual recycling of LED screens, as well as their geometries.

With special thanks to Glenn Harding and Thomas Dawe of the Federation Square large screen.

17. Henri Lefebvre, *The Production of Space*, trans Donald Nicholson-Smith, Oxford: Blackwell, 1991; Saskia Sassen, *The Global City: New York, London, Tokyo*, Princeton: Princeton University Press, 1991.

18. Vilém Flusser, *Towards a Philosophy of Photography*, trans Anthony Matthews, intro. Hubertus Von Amelunxen, Reaktion Books: London, 2000.

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INTIMATE PUBLICS MEMORY, PERFORMANCE, AND SPECTACLE IN URBAN ENVIRONMENTS

ANDREAS BROECKMANN

Introduction

Cities are sites of spectacle. We walk around, flaneur and voyeur, looking into faces and shop windows, at posters, screens, and facades, scanning for the new, the unexpected, the beautiful, and the wicked. The 'screen' of the city is a cluttered kaleidoscope, all shards vying for attention. A cacophony of mediated messages we barely notice and learn to ignore, or that we eagerly look out for – as signs and clues to find our way in the maze of itineraries, goods, and attractions.

The city is a field of experience in which built architecture, visual displays and personal communication overlap to form a rich, often overly rich mesh of impressions.

Urban screens confront us with the aesthetic phenomenon of building-size images. The gaze turned *upward*, we see an image that hides and mimics a built structure, a facade in visual acceleration. Most of these screens unfold their full potential only in the dark of evening and night when the city becomes a dreamscape in which immaterial images rule over the obscured material infrastructure. Glistening lights, disembodied luminar movements, all ugliness hidden in the dark, lights projecting images like the dreams of cinema.

The question of the ontological status of the urban screen as image is not merely philosophical, but it is the question also of what the screens offer as visual phenomena, and how they can be understood.

This is relevant not least since built architecture represents power, and the media-augmented structures inherit this representational power of architecture. Thus, what would it mean to conceive the context of urban screens not as a zone of spectacle, but as a space of dialogue, of conflict and negotiation, and of agency?

Walter Benjamin, philosopher of the modern city, sought to develop, in his 'Arcades Project' (or *Passagen-Werk*), an analysis of the city that would reveal its hidden potentials, or, as Susan Buck-Morss writes, Benjamin wanted 'to interpret out of the discarded dream images of mass culture a politically empowering knowledge of the collective's own unconscious past'.¹ Benjamin describes the experiential space of the city as an effective and affective dreamscape that is spurred by technological developments as much as by the social and economic context in which they are deployed. His interweaving discourse of observations, memories, marketing strategies and technological innovations is exemplary for a study of the dreamscape of urban screens.

1. Susan Buck-Morss, *The Dialectics of Seeing: Walter Benjamin and the Arcades Project*, Cambridge, MA: MIT Press, 1989, p. 273; Walter Benjamin, *The Arcades Project*, trans. Howard Eiland and Kevin McLaughlin Cambridge, MA: Belknap Press, 1999, pp. 388-404.

Importantly, the term 'urban screens' does not describe a particular type of technical medium, but it is a concept that encompasses different kinds of screens, viewed from the perspective of how they operate in an urban environment, and how they contribute to shaping urbanity. Therefore, the screens of mobile phones and game pads can be as important samples of 'urban screens' in creating a contemporary sense of urbanity as the large-scale video billboards and media facades.

All of these screens get embedded into a rich, layered fabric of urban experience in which intimacy, void, redundancy, difference, invisibility and memory play important roles.

In this essay, I try to offer a number of skewed perspectives onto this phenomenon. I take several detours, hoping to reflect on the possibilities as well as the limitations of an urban environment augmented, or cluttered, or coded, by a new generation of large-scale displays. Several somewhat unlikely examples are here interpreted as 'urban screens', even though they are very different from the typical screens that we may normally have in mind. What follows, thus, is not the exposition of a conclusive theory, but rather an essayistic excursion into the margins of the current debate.

Intimacy

Take Jozef Robakowski's 1978 video, *From My Window*, as a first instance of friction. Robakowski has been experimenting with film, photography and video since the 1960s and is one of the key figures of the Polish avant-garde.

Consider what happens when we reverse the gaze that is normally turned towards a building. How does the city appear from the perspective of somebody sitting on the 9th floor of an apartment block? And what if we think of every window as an 'urban screen', the window as a screen through which the spectacle of the city is observed?

The half-hour-long film shows the view from the author's 8th floor flat in an apartment block on the outskirts of Lodz. Over a period of several years, he observed his neighbours, recounting to the film audience little episodes and character traits of the people we see walking across the parking lot in front of the house, or along the street. The intimacy of the voice-over commentary is intriguing because it reflects the type of everyday knowledge that we have about our immediate surroundings, even in the most anonymous housing estates. Whether we know the names of people or not, when we see them regularly, they become actors in the play of the everyday which unfolds around us, a play whose narrative, most of the time, happens only in our heads.

Robakowski's observations are additionally charged by the fact that, when these recordings were made in the 1980s, the Polish SB intelligence agency was spying on people, making precisely the same kind of close and often random observations from which patterns of behaviour and misbehaviour might be gleaned. Robakowski turns us into eager or bored, innocent yet complicit witnesses who cannot but thread along with him, in this interlacing of personal curiosity, voyeurism, and the nonchalant modes of surveillance.

He compels us to ask: Who are the subjects of viewing in public space? What does a subject see, and how does she or he *connect* all the other visual information, their living conditions, political opinions, and memories, with what they see in the city? What can they do with this meshwork of observation and experience?

Our senses, the sensual orifices and the use we make of them, looking, listening, touching, tasting, smelling, are intensely *intimate* media to the self. They are continuously trained by their environment, and the subjects that we become are projected by the shapings and the friction that occur at the interfaces of these senses.

This intimacy is a crucial dimension of contemporary technical media. Thirty years ago, the radio, television and the fixed-line telephone were probably the epitome of intimate media, media that have affected at least my generation in the most direct and subcutaneous manner. Whereas today's media – the interiorised ear-canal medium of the iPod, the ubiquity of familiar voices in the mobile phone, and the networked PC – give us a very different sense of a mediated intimacy that touches us inside. The physical *and* mental integration between self and medium today goes much further than it used to.

One question that follows from this is how urban screens will become integrated into the structure of contemporary subjectivities. And will the large TV screens on buildings be able to compete with the intimate mobile media that vibrate in pockets, and that cocoon the gaze and the listening mind?

In his seminal 1974 study, *The Fall of Public Man*, the social theorist Richard Sennett decries how the modern city and its cultural interfaces create a deafening intimacy that *prevents* people from understanding their own lives as a result of broader, social and economic conditions. This run-down urbanity also engenders no sense of collectivity, of shared experiences, and it thus also does not foster incentives for political agency. While Sennett's analysis would have to be updated to this iPod age, the question it raises remains pertinent: into what social role do the urban screens call their viewers?

And how might the screens contribute to an understanding of a public urban space not defined by entertainment and one-way information, but by difference, communication, conflict, contradiction, efficacy, negotiation, and passion? In such an understanding of urbanity, intimacy becomes a dimension that is either consciously reclusive, or aggressive, that is, affective in its insistence on difference: what a rupture in the cool fabric of urban behaviour when it is interrupted by a passionate embrace or slight touch, a whisper, a languishing look, exchanged with a stranger. Is it desirable to recuperate, with this intimacy, the surreal eroticism of the modern city, as it was imagined by some artists of the earlier twentieth century?

No urban screens without urbanity – yet, what is the urbanity of this cocooned unit: somebody rolled up on a bed, or hunched up on a subway train, earphones plugged and the eyes glued to the small screen of a Video iPod or Nintendo DS, fingers on the controls?

Void

In the spring of 2008, the famous Accademia di Venezia, a museum housing one of the most prestigious collections of Italian art, is under reconstruction. Its facade is surrounded with scaffolds, covered by tarpaulin which simulates parts of the architectural decorum and leaves two large *16 to 9* fields free for advertising.

The apologetic text, printed on the tarpaulin, below, reads, in Italian, 'The sponsor contributes to the restoration of the Gallery of the Accademia'. The surfaces reserved for advertising are empty. A cynical interpretation of this white void would be that they have not found an advertising

customer, while the romantics among us may believe in philanthropic aestheticism and speculate whether some sponsor actually gave money so that these surfaces can deliberately be left white.

Such an absence of additional information is now the exception, rather than the rule. Much more normal is this scene, only a few hundred meters away, on the old Marciana library, opposite the Doge's Palace and near St. Marc's Square: half of the facade is covered by a big poster that simulates the architecture and leaves room for a large Rolex advert.

Branded facades offering to fulfill desires for love, wealth and well-being. Hungry eyes looking in the hope that one of these messages will change your life. Are they, in turn, being let down by the empty billboards on the Accademia whose surface makes no such promises?

A comprehensive theory of the visual economy of an urban environment in which screens of all different kinds overlay architectural structures and human perception – such a theory would have to account for the multiple cultural conditions of urbanity, visuality, media reception, the public sphere, and so forth. The specific interventions and inscriptions, and the way in which urban space is structured and transformed by media surfaces, need to be analysed individually, and compared.

For the moment, think of this as considerations towards a school of urban screen aesthetics.

In February, just across the Accademia bridge, I reached Campo San Stefano, and with my eyes now focused on *any* attention-grabbing transformation of surfaces, I saw this make-shift wall with posters, partly torn or half covered by more recent messages. And then of course also the Coca Cola logo to the right, and the 'artblucafe' marquee, quite humble between the dark green shutters and the monochrome facades. I began to think, what might make this a balanced, or interestingly unbalanced visual experience.

And then of course, I noticed the plaque commemorating the nineteenth century revolutionary writer, Felice Cavallotti, and the word 'Thief' scribbled beside it. The semiotic context for this chalk 'graffito' is very open, it resonates in our mind according to our own preconceptions and expectations.

For now, suffice to say that one chapter of the 'Aesthetics of Urban Screens' would have to analyse this triad of closure, void and openness.

Naked

It is curious to notice that the step taken by the city of São Paulo two years ago to remove all large-scale advertising from the city's buildings and highways does not resonate more urgently through the discussions on urban screens.

I'm not sure whether the topic is what in German we call a 'Fettnapf' – a kind of taboo topic that people try not to mention because it would be embarrassing for somebody. But what about São Paulo and their claim to get rid of the visual pollution of the city? And how does the issue relate to similar discussions about graffiti and street art, in which some people argue that any graffiti or stencil is better than a dead and grey concrete wall?

Here is São Paulo journalist Vinicius Galvao speaking in a radio interview in 2007:

São Paulo's a very vertical city. That makes it very frenetic. You couldn't even realize the

architecture of the old buildings, because all the buildings, all the houses were just covered with billboards and logos and propaganda. And there was no criteria.

And now it's amazing. They uncovered a lot of problems the city had that we never realized. For example, there are some favelas, which are the shantytowns. I wrote a big story in my newspaper today that in a lot of parts of the city we never realized there was a big shantytown. People were shocked because they never saw that before, just because there were a lot of billboards covering the area.

... São Paulo's just like New York. It's a very international city. We have the Japanese neighbourhood, we have the Korean neighbourhood, we have the Italian neighbourhood and in the Korean neighbourhood, they have a lot of small manufacturers, these Korean businessmen. They hire illegal labor from Bolivian immigrants.

And there was a lot of billboards in front of these manufacturers' shops. And when they uncovered, we could see through the window a lot of Bolivian people like sleeping and working at the same place. They earn money, just enough for food. So it's a lot of social problem that was uncovered where the city was shocked at this news.

... [Without the billboards] it's weird, because you get lost, so you don't have any references any more. That's what I realized as a citizen. My reference was a big Panasonic billboard. But now my reference is art deco building that was covered through this Panasonic. So you start getting new references in the city. The city's got now new language, a new identity.

... Big banks, like Citibank, and big stores, like Dolce and Gabbana, they started painting themselves with very strong colours, like yellow, red, deep blue, and creating like visual patterns to associate the brand to that pattern or to that colour. For example, Citibank's colour is blue. They're painting the building in very strong blue so people can see that from far away and they can make an association with that deep blue and Citibank.²

The question can of course be approached from different angles. The purism of the São Paulo city council reverts the city to an age in which São Paulo itself barely existed: ever since the nineteenth century, posters and later billboards have been part of the major cities' face, and São Paulo began to grow to its present shape only in the 1920s and 30s, so that there has never been a pristine moment which the cityscape can now be returned to.

At the same time, the insidious idea of using posters and billboards to physically cover up instances of social injustice is of course intriguing, and makes us wonder what all the other facade decorations, screens and billboards might be hiding. Urban screens as camouflage – a rich field of research for conspiracy theorists and critical urbanists alike.

Naked 2: Colours

However, as another short detour and picking up on Galvao's remark about Citibank São Paulo painting their building blue in order to mark and brand it, this instance may remind us of a project by the mayor of the Albanian capital of Tirana, Edi Rama, who has been seeking to transform the image of Tirana since 2000 by improving public park areas, tearing down illegally built houses and kiosks, and most notably by having buildings painted in bright colours. The Albanian artist Anri Sala's film *Dammi i Colouri* is about this project.

2. Bob Garfield and Vinicius Galvao, 'Clearing the Air', *On the Media* (April 20, 2007), <http://www.onthemediamedia.org/transcripts/2007/04/20/04>

The vision behind Rama's project was to foster a stronger identification of the Tirana inhabitants with their city. The authorities provided paint and scaffolding for free to those people who wanted to paint their houses, or even only the part of a facade that belonged to their own flat in a larger estate. The result has been an at times wild patchwork of colours that emphasizes or counter-acts the architectural structures of the facades.

The facades of buildings have always been designed to convey the symbolic, political and social values and status of the owners or inhabitants. Architectural style and decorum, media of simulation and dissimulation are used to articulate a social and cultural vision. In the Tirana colours project, the derelict anonymity of modernist facades is displaced by accentuating specific elements or areas. The previously dumb buildings and flats suddenly begin to converse, they say 'yes', and 'hello', and 'here', and 'look at me'. The built facades themselves are conceived as screens through which the inhabitants can communicate with the world around them.

Instead of living behind a pixel in a large-scale screen playing commercial videos, the Tirana inhabitants have adorned their facades with individual expressions of their sense of home.

Memory

As the last site of our excursion I would like to take you to Berlin's Potsdamer Platz, which some readers will most recently have seen as the site of the SPOTS Media Facade (2005-2007), a large-scale light installation that turned the glass facade into a huge, low-resolution video screen, made up of 1800 dimable circular neon tubes as the pixels of the screen.

When we curated the first four works for the facade, we took as a conceptual starting point the idea of the building looking back at the city. The exhibition was called *Die Stadt hat Augen*, freely translated as 'City Gaze'. The most literal application of the concept was provided by Carsten Nicolai's installation *SENSOR*, which used visual and sonic data from the immediate environment of the building to create on the facade a reflection of activities on the square. Nicolai designed a system of light, sound and movement sensors which were mounted on the facade and which tracked the lively square in front of the building. According to complex preset rules, the intensity of sounds, lights, and movements by people, cars, buses, etc. was translated into waves of light scanning across the facade at different speeds and in diverging directions. It was a feedback system that produced visual effects that were, at the same time, ever-changing, unpredictable, but in some vague form legible.

The facade was conceived as an abstracting mirror that reflects light back into the environment as a response to the urban activity in the square – an architecture that 'talks back' through the medium of a screen facade.

A stranger and maybe more shocking project was realised by the American artist Jim Campbell who sent barely recognisable human figures stumbling across the facade, turning into an image screen what Carsten Nicolai had treated as an architectural and urban reflector.

The event we observe on the screen looks like a scene straight out of film by Samuel Beckett, whose anonymous heroes trail the border of monomania, desperation, and humour. Projected at this scale into the city, Campbell's video sequences mark a fissure in the urban fabric that is weird and disconcerting, as though it came from a different reality.



Fig. 1: Staatsbibliothek Berlin, Cafeteria, 1979; photo Ludwig Ehlers; courtesy Landesarchiv Berlin.

Another layer of reality, set at the same spot, is a more personal story which is, I believe, exemplary enough to justify that I tell it.

My own first encounter with Potsdamer Platz was in 1987 when, as a student in West Berlin, I was working at the State Library, the Staatsbibliothek, or Stabi. The cafeteria of the library has a large panorama window that looks eastwards and, at the time, offered a view of the southern part of Potsdamer Platz, with the Berlin Wall in the background.

I have a vague, yet vivid memory of the view that, like many other people, absorbed me in my coffee breaks. I only really remembered this because a couple of years ago a friend of mine asked me whether I could try and track down a photograph that would show the view through that window.

Since the mid-1990s, the view has been blocked by a musical theatre which was built right next to the Staatsbibliothek, along with a whole quarter of new office, shopping and entertainment buildings that Potsdamer Platz now houses.

The view that we remember had a distinct life span: the library was first opened in December 1978, and the view got blocked some time around 1997 or 98 when the *Theater am Potsdamer Platz* by architect Renzo Piano was built. Twenty years during which thousands of library users spent their coffee breaks with a view of the city that has now physically disappeared, but lives on in people's memories.

For some yet unclear reason, I have so far been unable to find a photograph that would show that view. Like my friend, I am sure I would immediately recognise it, but neither the image archive of Berlin, the *Landesbildarchiv*, nor the image archive of the library itself, seem to own a photograph that shows it. It was, in a way, a double confirmation of my hopeless endeavour when I wrote to the commercial *Ullstein Bilderdienst*, a famous photo agency in Berlin, and got the response from the contact person that she too remembers the view that I am talking about, because she also saw it when she was studying in the 1980s, but she could also not find a matching photo in their archive.

So, what I have are some images from the area around Potsdamer Platz, and two images of the recently completed cafeteria in 1978 (Fig. 1 Staatsbibliothek, cafeteria, 1979; Fig. 2 Staatsbibliothek, press conference, 1978).

We are interested in the man with the glasses on the far right of Fig. 1 who is looking out of the window and sees what we would like to see again. The other clue I have is equally ambiguous: in the photograph taken during the press conference on the occasion of the opening of the library, we can see the reflection of the windows in the glass walls separating the cafeteria from the main building. This reflection feels much more vague than the image in my memory, but there is no way to materialise the image before my inner eye either. I am of course offering this memorised panorama window as a further example of an 'urban screen', akin to Robakowski's view from his window, but this time one that is hovering before a vaguely collective inner eye and, as it seems, undocumented.

The fascination with this site was shared by the German film director Wim Wenders who, in his 1987 movie, *Wings of Desire*, has the old Berlin actor Curt Bois first in the Staatsbibliothek, thinking about memory and the necessity of narration and commemoration; and then stumbling across what used to be Potsdamer Platz, unable to find a real equivalent for his half-century old memories of the once vibrant square. He says things like: 'I cannot find Potsdamer Platz. This – this cannot be it. For at Potsdamer Platz, there was the cafe where I would have chats and a coffee and smoke my cigar. There were buses and trams and cars. No, this cannot be it. But I will not give in, until I have found it'.

It is unlikely that Jim Campbell was thinking about Curt Bois, stumbling across Potsdamer Platz, when he proposed his uneasy Gait Studies for the *SPOTS* facade. However, both offer images of what we might call 'disintegrated flaneurs', men who do not simply drift and project their gaze, but who are caught up in an unstable body and in the maze of memory.

Each city, wherever people live, is rife with such imaginations, a cultural stage, and a container of mediated memories. The urban screens add only one layer to this multi-dimensional, deep screen of urban experiences.

Coda: Clandestine

In the society of surveillance, urban screens speak with the voice of those who have nothing to hide. It may be the voice of power and unhindered self-affirmation, or the naive voice of Reality TV actors, oblivious of a distinction between private, public, and political. They turn city squares into the equivalent of a private sitting room in which political decisions are neither tested, not taken. Some say that the urban screen was the ultimate democratic medium. However, I believe that like any other medium, it has to be used in a democratic way in order to be more than a tool of propaganda. The medium is not democratic, only its use can be democratic.

In the case of any remaining doubt about the political role of these highly visible displays, let us look at an extreme opposite, like the tunnels of Rafah on the border between Gaza and Egypt. These clandestine tunnels have been used by traders and traffickers to bring weapons, food, cash, people, drugs and pharmaceuticals into the heavily policed Gaza strip. Because of the weapons trade, Israeli forces try to bomb the tunnels and regularly destroy buildings that are assumed to house tunnel entrances, and because of this often random destruction of houses, the people in the neighbourhoods near the wall equally hate the Israelis, and also the tunnel traders whose profiteering creates the permanent danger of further demolitions, rightly or wrongly.



Fig. 2: Staatsbibliothek Berlin, Press conference, 1978; photo Ingeborg Lommatzsch; courtesy Landesarchiv Berlin.

These tunnels are running underground, and their entrances are hidden in the basements of buildings, since they are in strict conflict with the ruling power. We here need to address the intricate dialectic of legality and illegality, of visibility and invisibility. Whereas the tunnels have their impact because they are clandestine and invisible, the hypervisibility of the public screens and media facades, in contrast, display an unquestioning affirmation of their messages.

It is the role of artists to destabilise these dichotomies, to undermine the certainties and expectations about what is visible and what is invisible, and to pinpoint the visual regimes coded into the different display and media systems.

With Walter Benjamin we can maybe venture into this maze of significations. Dreams and nightmares alike creep out of closets and from underground holes, but they can very well also appear on the big screen, without any camouflage.

Benjamin interestingly points out that, if art can no longer compete in the modern dreamscape, advertising might still be able to have an impact.

In the nineteenth century, when the tempo of technological transformations threatened to outstrip the capacity of art to adapt itself to them, advertising became the means of reestablishing a link between technology's forces and social desires: 'The advertisement is the cunning with which the dream imposed itself on industry.'³

This leaves us with the question – both urgent and difficult – which images the designers of urban screens and screen content want us city dwellers to imagine; which of our memories they want to respond to, or embed; which dreams they want us to dream – and which of these dreams they want to help us transform into a history which we can take into our hands.

3. Buck-Morss, *The Dialectics of Seeing*, 1989, p. 144; Benjamin, *The Arcades Project*, 1999, p. 171.

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PART 2
SITES

SUSTAINING PUBLIC SPACE AN INTERVIEW WITH KATE BRENNAN

KATE BRENNAN, SCOTT MCQUIRE AND MEREDITH MARTIN

Kate Brennan is the CEO of Fed Square PL, a public plaza and cultural precinct in central Melbourne designed by Lab architecture studio, which is home to the Australian Centre for the Moving Image (ACMI), the Ian Potter Centre: NGV Australia, and the Fed Square big screen, as well as shops, cafes, bars and restaurants. Fed Square PL operations under a Constitution and a Civic and Cultural Charter that was jointly developed and agreed by the State Government of Victoria and Melbourne City Council at the outset of the project.

The interview was conducted at Federation Square, Melbourne, March 10th, 2009.

Scott McQuire (SM): Kate, I'd like you to begin by talking a little bit about your own biography and the kinds of experiences and expertise that you bring to this particular role.

Kate Brennan (KB): My background is firmly rooted in community of one kind or another. I started my professional career as a teacher in areas of significant social disadvantage, so I got to experience first hand the application of learning and entertainment-type experiences in seriously disadvantaged environments.

I went from working in an education environment to working in the social justice sector, both in overseas aid and working with people with disabilities. I was able to both experience and apply again, the same sorts of things: the impact of experiences of the humanities for different individuals and groups who have not previously had access. I was able to see the benefit of exposure to performing arts for kids on remand and people in prison, for people with intellectual and social disabilities and for people who are alienated in one way or another.

In the development education environment, where I worked for a long time, we used



Fig. 1: Australia Day celebrations at Fed Square. Photograph courtesy of John Gollings.

community radio and theatre in education as a model of discourse and for increasing people's awareness of appropriate forms of intervention in the 'third world'. My experiences, whilst technically teaching and management based, have been very firmly rooted in that sort of environment.

At one point I went to work for Melbourne City Council in their Cultural Development area after having a lot of exposure to community cultural development practice here in Victoria and nationally where I was exposed to a wide range of grant making and grant giving, so I felt well versed in the broadest cross-section of what was going on in the country. When I went to work there, the interesting thing that was added for me was the dimension of city-making in the context of community building and it was the first time I'd really had an opportunity to see where the points of intersection between one form of thinking and another were, and also the points of conflict and discord. Not just in terms of the practice of city-making or the practice of community cultural development but the perspectives from which individuals came to those particular areas.

After I'd had the opportunity to work for the Melbourne City Council for an extended period of time (and that period included working on the project team for Federation Square), I went to run the Adelaide Festival Centre in South Australia for seven years. Again, this was a big cultural business which was at the heart of the identity of that city; it's sense of itself as a cultural leader was very strong, the building itself was the first performing arts centre to have been built in Australia prior to the Sydney Opera House opening. So there was a strong sense of what those *buildings* were about, but less of a sense of the contributing dynamic that, not just traditional performance but broader community cultural activity, had in the life of the city.

The challenges of the Adelaide Festival Centre were many and varied but one of them was to re-establish, through a number of different strategies, its pre-eminence as a focal point for the community. Up to a point I think that we achieved a great deal of that, includ-



Fig. 2: World Cup at Fed Square. Photograph courtesy of David Simmons.

ing working with communities who had simply not been embraced. This included the local indigenous community, for example. The Centre was very good at putting on Bangarra in a theatre [a renowned indigenous Australian dance company] but not so good at welcoming members of the indigenous community as members of its audience. So from my perspective the strategies of redevelopment of the site were an important part of achieving that inclusiveness.

As a result of a number of those roles and of a number of visits I've made to live environments around the world, I've had a lot of opportunity in Victoria, in South Australia, across Australia and internationally, to get a sense of what does make a dynamic place. I certainly think that the application of the broadest possible definition of culture is one of the most enriching factors of all, in making a great place. So I think I bring some of that to Federation Square.

SM: When you took up your role at Fed Square what were the main challenges that you saw? What were the main challenges that you felt that Federation Square needed to address in order to work in terms of the vision you had for it?

Meredith Martin (MM): When was that?

KB: That was in 2005 and the site had been opened in 2002. In essence though, it was still a construction project throughout 2003 because some aspects of the site – parts of the construction and fit out – hadn't been completed. So, into 2004 was the first period that the team who were part of the Federation Square Management Company, as it was then called, had to really reflect on applying its Civic and Cultural Charter to the practice of Federation Square on a daily basis. It's true to say that that team of people had done the gargantuan and seemingly impossible task of getting Fed Square built, getting it busy and creating that first flush of public engagement. And they did some very clever things, which we continue to emulate and develop. But, when I came here, yes it was true that



Fig. 3: Crowd at World Cup. Photograph courtesy of David Simmons.

we were just post-birth, if you like. And as I said to the team when I started: the baby has been born and it's now contingent on all of us to make decisions about what kind of child we want it to be, what kind of teenager we want it to be, what kind of adult we want it to be and, to the extent that you can parent all of that, what kind of inputs did we need to make into the development of Federation Square?

And so we did some fairly prosaic sorts of things: we started thinking about the organisation, because up until that point it had been a very busy group of people doing a really hard thing and the team were called 'the team'; they weren't Fed Square Pty Ltd, an organisation with value systems, structures and processes that needed to be developed, amended, modified, and evolved over time. So focussing on the organisation was very important. And perhaps more importantly, we focussed on the application of our vision; we needed to revisit things that had been said about Federation Square in the early days and determine whether or not we considered those to be relevant, well expressed and how would they be applied going forward.

To a certain extent, all those things that the project partners had wanted for Fed Square, we deemed as continuing to be relevant. We then tried to express those in a new corporate plan. We restated a new vision. We had a look at what were the half dozen things that were really important to us and out of that evolved a corporate plan. It was the first time that the stakeholders, the board and the staff really had an opportunity to project into the future a little bit and ask some questions about where we wanted to go.

All of this was done, I have to say, in the context of continuing to run really fast, because that's the way the business was set up: it's a small team of people with a lot of things to do. And maybe in hindsight there may have been some streams of things that could have been identified then that maybe we could have developed more articulate policy frameworks around in those early days. But I think we were still very much in the journey of discovering Federation Square and what it meant to the community; discovering what



Fig. 4: Fed Square big screen in ambient mode. Photograph courtesy of Meredith Martin.

its strengths and weaknesses were. As we've arrived at 2009 and while the objectives themselves are relevant, we're looking at our corporate plan as a slightly artificial overlay on the dynamic that is now Fed Square.

This week we've just registered our 50 millionth visit, which is a pretty phenomenal engagement from the members of the public with the overall space. I think it has taken us four or five years, say since 2004, to get to a point where we've seen the dynamic turn over a number of times, to be able to say: well, this is really important and that is really important. In the process of developing our corporate plan over the next few years, we are identifying some overarching themes rather than being locked into our existing corporate objectives, and we are working through some of those themes at the moment.

SM: Would you be able to talk about some of those frameworks now?

KB: Sure. We've been doing a lot of work around place-making and the international theory and practice of place-making. We've been really gratified in the last twelve or eighteen months to be acknowledged by peers who are working extensively in this area, as an organisation, which is at the leadership end of this kind of management process and philosophy. And that's great but it also points out to us that we've got a lot to learn and a lot to engage with. The good thing about that place-making agenda (which I always had in the back of my head coming into Fed Square and indeed, had in my mind when we were writing the design brief for Fed Square at MCC) is perfectly consistent with the inaugurating Civic and Cultural Charter that sits behind the design brief and exists within the Company's constitution. These civic and cultural purposes articulated for Fed Square and the place-making agenda have very similar sorts of themes and there is no lack of discussion and engagement around all of that. What we don't do on a day-to-day basis is measure Fed Square by the criteria of a successful place. Yes, we say x number of people come to Fed Square, so it must be good but we don't have a very sophisticated place evaluation model in practice here yet. So, trying to strengthen the sense of place and the sense of purpose, as part of our management framework and operational model is really important.

The other area that is really important to us is the overall theme of sustainability, not just environmental sustainability but financial and business sustainability. We don't want to single out corporate governance and risk oriented sustainability from the other sustainability agendas, and we want to reflect multiple bottom lines in the way that we put all of that together. There is a very strong feeling from within the staff group driven by environmental sustainability agendas out there that this aspect of sustainability is really important. And related to that *and* to the place-making agenda is the idea of health, safety and well-being. On the one hand this could simply be an occupational health and safety agenda or a work and life balance agenda, and there are certainly elements of that within how we go about managing this really busy place. But one of the interesting things that is emerging from the staff is the further exploration of the contribution of a place like Federation Square makes to a healthy community and an economically viable community.

The last major area that we are talking about at the moment is the extent to which innovation permeates everything that we do and that we need to be an organisation that is a deeply creative. Not necessarily one that has lots of neon lights and LEDs flickering around the place all the time but a creative organisation where we are problem solving on every front in different and interesting ways, whether it's prosaic things like the way we pay our

bills through to the way we might engage with artists. Trying to work out how we evolve as a 'creatively thinking' organisation and encourage creative people to work with us within resource constraints is really important.

That doesn't mean that our interest in our international positioning, broad community ownership, great customer experience and this leading edge idea currently driving the corporate plan, are going to be come less relevant in all of that, it's just that we might come up with a different evaluation framework. As I said we've got a default measure at the moment: it's fabulous, the first thing I say to you is we've just registered our 50 millionth visit. Did they have their eyes closed or their eyes open might be another value added question that you would ask? So what we're trying to do is really put some things in place that are deeper measures of the meaningfulness of Fed Square.

SM: Were they crying or smiling? ...

KB: That's right. And to all intents and purposes those numbers are a very good measure, as are the half dozen other KPI's that we report on a regular basis. There's nothing wrong with them but I guess because we are looking at long-term sustainability we want to meaningful to the community of Victoria in fifty or a hundred years time. The half a billion dollars spent on creating Fed Square as well as our charter prescribes that we should.

MM: To some extent though that level of meaningfulness is indicated by how visitation is structured around very significant moments like the apology to the stolen generations for example. So I guess you need an evaluative framework that can tap into the reasons why people are here, what it is that draws them here, as well as experiential dimensions.

KB: Absolutely. And I also think that we need to help the community understand the intrinsic value of Fed Square to get that sustained engagement over time. For business and also philosophical reasons we've embarked on an education program across the site. We didn't have to do that because some of the businesses on the site run great individual programs but we wanted to have a much deeper engagement with students' learning experience because we thought that we could enrich it and because we knew that a richer learning experience would foster greater loyalty further down the track.

At Fed Square there is always the mix of business pragmatism and the broader objectives and interpretation of the charter, simply because we are a commercial company and we're charged with running the site commercially in perpetuity but for community benefit outcomes, which makes it really important to get that mix happening.

The fact that people come to Fed Square for the important moments I think is testament to a number of different things. One is that Fed Square is the wish fulfilment of Melburnians. Everybody hated the Gas and Fuel Towers but even more than they hated the Gas and Fuel Towers (and that was fuelled at various times by the media and politicians – and in fact they *were* a poor response to this part of the city), Melburnians kept saying that they wanted a city square.¹ Why didn't we have a city square? Why didn't we have this thing that the city square represents? There seemed to be the sense that there was some

1. The Gas and Fuel Corporation Towers were previously located on the site of Federation Square. Constructed in 1967, this structure had a public reputation as one of the ugliest landmarks in Melbourne. They were demolished in 1997.

kind of shortcoming in ourselves that the idea of the city square seemed to represent. Historically, I'm told, there was a plan that Melbourne would have more squares and more public spaces but they were never realised as it rapidly evolved during the Gold Rush era (1851-1860s) and some of that open public space was closed in for development.

So there has been this historical yearning for a city square. When we then add to the mix the fact that Fed Square occupied a 'green field' site that is at the centre of the axis between recreation, retail, business, public transport, it is clear there aren't many city squares that are built two hundred years after the city was established with those credentials. Then we add the progressive development of the Yarra River corridor development and a wonderful urban amenity in the CBD, and you've got a recipe that really says: you'd have to stuff it up to get it wrong! I think that people implicitly wanted what Fed Square has become for them.

MM: They were predisposed to appreciate it because of this sense of the lack of a centre?

KB: I think so. So when the first big protest rally happened in Melbourne in 2004, the first in many, many years, it seemed logical for people to come here. Interestingly, I was just reading something today, in an article written, I think, by a PhD student who was discussing whether Fed Square is this great public realm or not because to conduct a rally they actually had to apply to come here. The writer perceived a discord between what should be an open public space and Fed Square as a managed space. But I think that the fact that it has been an *empathetically* managed space has been part of the key to its success.

SM: Kate, I'd like to ask you about the role the multimedia component plays in the Square. How has the media infrastructure reconfigured the objectives and themes of Fed Square?

KB: It seemed to me in 2005 that although Fed Square was 'wired within an inch of its life', that we weren't really doing anything with that capability. Fed Square was built at a time when every telecommunications provider in the country would have had you believe that you were going to be ordering your lunch of the front of your fridge in twelve months time. I mean there was a world that said: it's all going to be like this and you know, we'd all sort of jump to. And Fed Square was conceptualised, if you like, in terms of media framework like that. Unfortunately in the course of development some of that framework was not completed. It was a waste of time to try and differentiate those things that were retained and those things that weren't completed. But it was really clear that we weren't doing anything with it so it seemed to me that the most obvious thing that we could do with it was to tell more stories of the community that we were part of.

We spent a lot of time establishing what the multimedia platform was, what capability we did have and how many people we really needed to do all these things. There was a conflict between different parts of the organisation: some people wanted one thing to happen and others wanted another. We didn't even have fundamental operating systems and clear lines of accountability for how our media was going to work. So we went through a bit of a tortuous process trying to work out what we had and what we could do with it before we could even talk about how much bigger or better we wanted it to be.

I think it's true to say that there was a lot of stuff around the edges in those early days, there were preliminary advertising policies, there was this and there was that. But I think

in the end the way the program has evolved has been pragmatic. The majority of Fed Square's success is about its engagement with a broad cross-section of the community and the big screen in particular is an integral part of that. So we were really pushed into a situation in which we had to think about what was the most efficacious engagement with the broadest possible community: how we could make the screen work better for events, how could we use it creatively, and for information. It was important to me that this wasn't cluttered up by having advertisements on the screen for X or Y. I would say to the team, I don't know who told you that \$25,000 earned from advertising was more important than everything else, but we can make that \$25,000 somewhere else and not compromise what we're trying to do in terms of the screen programme.

We were, in a sense, unsure about what we were trying to do. But the things that were working for Fed Square around community, not so much about cultural product, but certainly around community, were the things that we started to focus on. Also, because we took the notion of telling stories as a really important component, we thought we had better tell the story of what was going on here on site as well. This meant increasing our capacity to reflect interactivity in the square, up on the screen, to tell people what was going to be on, bringing ACMI out and up on to the screen, bringing the NGV out and up on to the screen. All those things were part of working this out. We consolidated our core corporate objects: international positioning, leading edge, community ownership and customer service, and the multimedia program just had to be in service of those things. At the same time we really started thinking about best practice, about what other people were doing with screens. Where was the community here in Victoria that would engage with the screen environment, and the sound environment to a lesser extent, in a different and interesting way? How could that contribute to us getting a better profile nationally and internationally? We were being a bit pragmatic in the sense of if you want to get people talking about you, get the arts community to talk about you first. The fact that we were prepared to take a few risks in that environment was important and I encouraged the staff to do that.

More recently, we've developed a bit more of a program framework, which still is in draft form, and the multimedia program fits within that draft framework. Up to this point, whenever anybody has asked us how we make any program decisions, we've always gone back to the Civic and Cultural Charter. The primary use of any of our assets has been to express Melbourne's identity, its cultural and community strengths, its multicultural diversity, its sporting prowess, and its assets. I think that's enabled, if you like, the 'not for profit' approach that people are looking for. We started with that and we've been able to sustain it. As an aside, we've done quite a lot of work in recent times on how we can generate more revenues from our assets, including the built form assets and the screen, etc. The reality is that they are worth a great deal to the community at large, but they're not worth a great deal in terms of advertising revenues. The challenge for us is not to be forced into a position to trade off those considerable community benefits for very marginal returns.

We are always in a challenging position to generate funds for the projects we want to do. Naming rights for the screen is not a viable product at the moment, particularly with the global financial crisis, but I would like to think that there could be products like that, that are of significant value to the right kind of organisation. If and when we get into that situation, we will have to think very carefully to ensure that it doesn't compromise all those other things that Fed Square is about.

SM: One of the first Fed Square events that I remember, even before you took over as CEO, was the 'Dancing in the Rain' event for the Melbourne Festival (2003). I think Robyn Archer was involved in that? That really opened people's eyes to the possibilities of participating in public space in relation to media content that was manifest through the screen and the audiovisual environment. Is this participatory aspect something that you want to develop further?

KB: Well, I think that people would want to participate even if we didn't allow them to. I think it goes back to what community is about and what it is that people want to share with each other. There was a quote in the press recently from one of the people who came into the Square on the mourning day for the bushfires.² Even though the Service was up the road at Rod Laver Arena and our site was full of the Sustainable Living Festival, we showed it up on the screen because a lot of people wanted us to. A relatively small number of people came to Fed Square expressly to watch that up on the screen. But when asked, the person being interviewed said: 'I wanted to be where everybody else was'. I think that drive is really strong in human beings. We work with many multicultural communities and many very strong communities could run their major festival or event out in a lovely park somewhere else but they choose to be here, because they feel that Fed Square brings them closer to the broader community. When we run the 'Light in Winter' project, the Indian community and the Tuvaluan community, who don't have very much to do with each other ordinarily are working cheek by jowl.³ They say to us that this is really great for them because it brings them into contact with these other communities. So I think that there is a desire on the part of individuals and communities at large to be part of something bigger.

It's like the old refrain that cinemas were going to close down with video: people have a different kind of need that gets fulfilled through group activity. I think that is going on all the time and, as I said at the Urban Screens conference, if people are seeking different levels of engagement surely it is contingent on us as the owners and managers of their asset, something that belongs to them, to assist in affording them the richest possible experience.

However, sometimes that rich – thoughtful and investigative – experience is not possible to achieve because people are not looking for it at the time. People coming to see the Australian Open aren't particularly interested in a discourse about why they are there with a group of people. However, people who are here watching a Merce Cunningham dance production and who are asked to comment via mobile phone to a phone number in New York about dance *will* engage. To be honest, richer engagement is a whole lot of fun. We learn lots of things about our community and we learn lots of things about each other, and we learn things that we can do that make that community better.

We're looking for appropriate times, appropriate resources, appropriate methodologies and appropriate partnerships where those various levels of engagement can happen. And we need to be quite sophisticated about doing that. One of the things that I'd dearly like to be able to do is some kind of longitudinal study that investigates the impact that regular

2. Referring to several large-scale bushfires that ignited across Victoria in February 2009. 173 people died as a result of the fires.

3. 'Light in Winter' is Federation Square's annual winter festival, <http://www.federationsquare.com.au/index.cfm?pageID=373>

engagement in richer levels of participation with media actually has on people's ability to contribute to and affect their community. I think that is a very worthwhile and useful thing to be doing with this public asset.

The challenge becomes what kind of annual budget investment is required for this and how do you go about making the decisions that enable that, when you've got a small number of staff and relatively small financial resources? And to be honest, a limited technical capacity which, unless that capacity is constantly invested in, is always going to be limited? I think the reality is we are doing what we can on an incremental basis to improve the range and the quality of that participatory engagement of multimedia activity.

SM: One of the big issues that came up in discussions at the Urban Screens conference, was how do you actually assess the material that you want to put on in public? While you need to address diverse communities, and want to make rich and compelling content available to people, you're in a very public space, so you're very exposed.

KB: Yes, we've had cause to reflect on our existing processes for managing content, whether they're working, and whether we should improve them. Right from the basic level of legislative compliance, through to the kind of resources that we can allocate, to determine whether that's the best possible content and scenario that we can imagine. Let's assume that we've complied with everything that we have to comply with, I think that one of the best things that we can do is work with artists and communities themselves to understand what views they are interested in and what stories they have to tell, and try and find little mechanisms within the resources of the organisation where we can deal with all of that.

I wouldn't want anybody to think that I'd be prepared to put socially or politically challenging content on the screen on a daily basis, because I just don't think you can sustain that over time, particularly given we do not represent only one segment of community. I think the process for us is to have people recognise that stimulating, challenging and contemporary content is part of the deal at Federation Square, and become sensitised to accepting that challenge in this kind of environment. That means that we just have to go a lot more slowly with the really challenging content, and make sure that it's contextual, over a period of time. Maybe I'm not brave enough but I don't really think Fed Square is the place to stage the revolution of public content, because I don't think it would last very long. We already get quite a lot of complaints from people, who for one reason or another think that quite the mildest content on the screen, the mildest expression of social intent, is inappropriate or offensive in one way or another. We've had to try and deal with those views, without discounting them. We treat it as feedback about how far you can stretch the boundaries in the management of this public place.

SM: What are the lessons you think you've learnt about the process of developing the audience? Do you see signs that the audience is changing?

KB: Eight million people come to Fed Square a year, and I would have to say, in the same way as when people are down the street shopping, or they're at a football match, or they're at the beach, the majority of them would *not* be that interested in a complicated experience. That's not to belittle audiences, it's just not what they're coming *for*. I think the signs that audiences in general are becoming more sophisticated may be less to do

with us, and more to do with changing habits, changing forms of interaction. People are very comfortable to sit in a public space and be quite connected to whatever: engaging with the SMS messaging or SMS TV stuff on a regular basis.⁴ I would like to explore what would happen when you talk back to them, via these media, just to see how far they have evolved.

We're not getting people telling us that they *don't* want interactivity in that public domain. We're not getting people telling us that they don't want us to put out the deck chairs and show a small film festival. We're not getting people telling us that they don't want to, for whatever reason, on a forty degree day, sit in the atrium with three hundred other people and watch the tennis on the screen. We're not getting people telling us they don't want these things. In fact, it's the reverse: people are *cross* with us when we don't do the stuff that they think we should do. Our reception has to deal with a lot of phone calls if we're not showing, for instance, the Melbourne Victory versus Adelaide United Australian A-League soccer match on the screen, or whatever, so. ...

MM: So there's a real expectation that anything big will be on here?

KB: Yes, and not just big. I mean in the scheme of things, whilst the A-League soccer's important, it's not big big big. We certainly don't show comparable Australian rules footy games on a regular basis. But people have these views that Fed Square should, or shouldn't be, doing things. You know, there was a bit of an outcry recently because we couldn't show something related to the Victorian bushfires, because we happened to have another booking. Is the audience becoming more sophisticated and interested in participation? It's a bit chicken-and-egg really.

SM: It reflects how people are relating to museums, to cultural institutions, generally, and also to urban media.

KB: Looking at how we manage the screening program, there are some parts of it that are deeply beguiling, for those of us who are interested in culture and democracy and the implementation of culturally democratic processes. Going back to your earlier question, the reality is that if those culturally democratic processes are going to take root, it's a bit hard in this sort of climate to go like a bull at a gate. We do have to look for our opportunities and implement those where we can, and find synergies where we can.

We did a Skype session to the screen the other day for the Our City Cares bushfires day, and there was social analyst Hugh McKay in Sydney, me here, Archbishop Frier, and the Mayor of Whittlesea and that event, which was on a split screen, created a sense of participation and unity in a form of expression that we've not been able to do very many times before. And that one went very well, so we now see our way clear to do more of that kind of conversation, more of that engagement, and finding ways of generating connection between members of the public. Now that we've got that under our belt a few times we will probably try and find ways of, you know, bringing regional Victoria in to participate in the life of Fed Square a bit more, and have Fed Square go out to the regions a bit more. It's

4. Through a partnership with Optus, Federation Square allows at certain times for personalised SMS text messages to be displayed on the East Shard, and for animated SMS messages on the big screen, <http://www.federationsquare.com.au/index.cfm?pageID=249>

something we've been talking about for a while, but we're now seeing that it's possible to do, that we can manage the technology, we can see the dimensions that are possible. We can see how other content, not just talking-head content, might be fitted in to those sorts of broadcasts. There won't be many of those projects because it currently takes a lot of time and money to organise all of that, but they are great demonstrations

I think that just shows the way we evolve things. The reality is that we'll be showing an awful lot of soccer matches and concerts, and square to screen activity, and that will continue to be part of what we do. But one day we'll be able to talk back to those people who are texting the screen, and we'll have a different level of engagement with them.

I think the important thing is that unless we *are* interested in those processes at that end of the spectrum, then we won't think of them as potentially viable because they're quite complicated. So I do think it's really important for us to have that, as well as the more simple public engagement components, within our broader programming philosophy. When people say to me 'what's the business of Fed Square?', I really think it's about community building, and you can't have that happening unless you're prepared to engage with people and to have some sort of feedback with them. We're not perfect at that by any means but we do try to do it.

SM: Have you been approached by other people who are interested in developing screens?

KB: We're always being approached by colleagues around the country and internationally about what we're doing, and I think that's increasing because people are seeing that not only is the physical space interesting, but I think people are seeing that kind of management philosophy as being particularly interesting. We have not been approached by Adelaide or by Sydney. There's a really interesting project happening potentially in Tasmania, and there's a lot of stuff going on in Perth at the moment.

One thing I am noticing increasingly is that Fed Square is becoming a reference point. I get the media clippings every day, and every few days, somebody will say, 'why can't we have a Federation Square?' Or, if somebody's going to put a screen up in Shepparton, they'll say 'like Federation Square'. This is because people understand what it means when someone uses that reference, and this happened in a relatively short time. I was at a presentation around the redevelopment of the ANZ campus up in the new Docklands precinct, and Fed Square wasn't a particularly key part of the conversation, but it was the embedded reference point for the presenter. For no reason other than it would help her staff understand, the presenter said she was using Fed Square as the base plate: she would say to people, 'it's twice as big as Fed Square', 'it's half the size of Fed Square', and so on. So Fed Square is getting really embedded here as a reference point.

What concerns me though, is because it's now embedded, it sounds easy. People don't remember that there was a very significant process of collaboration between the city and the state government, around the philosophical basis of the site. It was a difficult and challenging project. It is a very demanding and challenging environment to manage, and to manage it holistically. There are forty different businesses on this site. Every single one of them has a slightly different view about how I should do my job. Every single one of them has a slightly different view about what should be on the screen out there and in the atrium, how much time they should have of it, and so on. And I know putting up a screen in Adelaide's not necessarily going to have that sort of dimension, but there does need to

be some sort of fairly clear guidance framework and set of intentions that the stakeholders share before they embark on switching the screen on, or laying down the cobbles. And that's a story that we're really happy to tell, and to the extent that we've got any of it right, I guess we're happy to share some of what we've learnt and our philosophical framework.

PUBLIC SPACE BROADCASTING

AN INTERVIEW WITH MIKE GIBBONS

MIKE GIBBONS AND SCOTT MCQUIRE

Mike Gibbons is Head of Live Sites and UK Coordination for the London Organising Committee of the Olympic and Paralympic Games. Prior to joining LOCOG, he was the Project Director, BBC Live Events where he set up a pilot project to establish what became a network of nine Big Screens in the Public Space Broadcasting Project. This led to his being part of the first Urban Screens Conference in Amsterdam 2005 and being Chair of Manchester Urban Screens Conference 2007. In his role with LOCOG, Mike and his team are co-operating with the BBC and relevant city councils to install large LED screens in urban centres across the United Kingdom as part of the programme to bring the Olympic Games in 2012 to as many people as possible. These screens will then be a legacy of the 2012 Games.

The interview was conducted at Urban Screens Conference 2008: Mobile Publics, Melbourne, October 4th, 2008.

Scott McQuire (SM): I last talked to you a couple of years ago when you were nearing the end of the pilot phase of the Big Screens project. So perhaps you could talk about how that project was evaluated and where it might go, before we talk about what's happening with London 2012.

Mike Gibbons (MG): The first nine screens proved to be quite interesting, because the pilot, which was in Manchester, worked so well, that there was a real demand to move on. So you had three, four, five big cities in the north and midlands – the core of the English part of the United Kingdom – set up, pretty much straight away. The survey work that was done at that point was unequivocally good. It was all ninety per cent's in terms of approval ratings, desire to participate, social benefits, civic usefulness. The next phase was a complete contrast because then you got people who, responding to all sorts of reasoning, decided they wanted to join the party. So you got quite small boroughs, and medium-sized cities, saying, 'we want to put a screen in, we actually want to do this as well'. And in some cases they did it, and then thought, 'what do I do with it?' In other cases they started the process and then said 'we realize we need a partner'. Therefore, the BBC was asked in to several projects, from quite different starting points.

But I think, over the period of time, all of those places became indivisible from the rest, so although they were associates, they became part of the pilot. And finally, in the last eighteen months, a couple more medium size towns came on board who had equally decided that there was a civic benefit for it and had found the funding. But at the end of the day, what you had was nine projects, each of them individually devised for their own particular set of circumstances, but utterly dependant for the core funding on a set of external circumstances, which weren't going to be universally applicable across the board or across the UK. Therefore, whatever you looked at in terms of future rollout, if this was being done on the basis of civic good, or universality, or the opportunity to engage or share in a project, you were going to have to spend many,

many years before you could start to contemplate a network that gave everybody access to it wherever they lived. So you needed another way of delivering that infrastructure.

The London 2012 Olympic Games clearly gave some potential opportunity as a way to deliver the whole project. We didn't know whether there would be the interest from an Olympic perspective. But the thing we did know was that, however you were going to contemplate a rollout, you had to be in a position whereby you weren't creating individual projects every time. You needed a template, a matrix, that you could in effect take off the shelf and say 'what are your circumstances?' So 'you're plan A', and 'you are plan B', and 'your's may be plan C'. Actually, by and large, there's only two sort of models that you require. But there needed to be the robust technology, there needed to be the suppliers who could do it, you needed the system to drive it. In many ways, where we ended up, as we go into this current phase, was concentrating very heavily on the technology, rather than the content. Because, ultimately, the five years of experimental project work was all about 'how do you make a system work?'

It would be very easy to have got seduced by that, and to say, 'well actually, we worked out the solution'. We did a lot of work on that, engaged in a lot of technology discussions, a lot of conversations with manufacturers and people who put together the content management systems that drive your screen. You could easily say 'yes we've sorted that all out, hooray, we've done it!' When actually, of course, all you've done is create the platform, and that is almost invisible until you do something with it. It's when you do something with it that it ultimately makes sense. It doesn't matter how good your technology is, ultimately the content's the thing that really matters.

SM: So London 2012 is the vehicle for the next five years of rollout?

MG: Yes. And the reason for that is, of course, that on the 31st of December 2012, or whenever it happens, the London 2012 Olympic machine disappears. You can't build the



Fig. 1: BBC Big Screen, Norwich, UK. Photograph courtesy of Mike Gibbons.

Olympics into this on a long-term basis. Remember that, from the very beginning of the project, it depended on the city, and the BBC, the combination of the national and the local. In both cases, the edges are blurred, but they have their own special areas: one looking after content, the other looking after the public space, both of them with an interest in the content, both of them working in the local community. That model will apply in 2013 as much as it did in 2003. We're very conscious in whatever we do that bringing LOCOG into this as a partner is only about facilitating that process.

You still have the position where you've got the BBC providing the mainstay of the content, and managing the content, alongside the city, borough, town, whose events team are in charge of that public space, and have their own content they want to bring to it. Both of them have a responsibility to reflect their own area and to generate content that goes in there. Of course there is also national content that is non-broadcast, which isn't the BBC's. National commissions, for instance, in film and video, which have grown over the years, have always been a part of the project and will continue to be.

So from London 2012's perspective, you look at the project and you say, 'Well, why are we doing it? What's the rationale for it in the first place?' Second, 'What do you bring to it?' Well, to answer the second question first, the one thing that the project needs is money, because the capital investment is the significant barrier. It was always known to be the case, and the reason it took five years to build nine screens was not really the technology, it was more about who's got the money. Because each of them is still a capital investment of something up to half a million pounds, in terms of the screen, the background technology, the effort, and the project management to get it in the ground, or screwed on the wall. So you've got to find that money.

SM: How are the running costs shared, roughly?

MG: The BBC's fixed cost is a person [to program the screen], the city's fixed cost is its



Fig. 2: BBC Big Screen, Plymouth, UK. Photograph courtesy of Mike Gibbons.

events team and event management, and initially the city had to pay the capital cost of the screen as well. Now LOCOG takes those capital costs of the screen away, leaves the city with only the events bill, which is where they should spend their money actually, on activations in their public space. Those costs haven't changed. But, from a BBC perspective, they only have to find – 'only' in inverted commas – one person per screen. The city has to find its own events money, while from LOCOG's perspective, it has to pay for the screen. The only additional costs then, on an ongoing basis after the capital payment, is a service and maintenance contract, which is a few thousand pounds per year, deliberately minimised to keep it down.

When London 2012 disappears on the 31st of December 2012, the legal agreement transfers the screen to the city for a peppercorn rent. You pay a pound or whatever it is, you get a screen, we've given you half a million pounds worth of kit. It's got another five or more years life, maybe eight, nine years of life, because no-one knows. In fact, they've got at least ten years of life now, and most of them will have new screens that go in during 2009 and 2010. So the BBC and the cities can take on the project and run it in the same way as it's been running since 2003. London 2012 doesn't need to be there. We've set it up in a way that we go in as a capital provider, and then we use it for our own purposes alongside the BBC and the city until 2012, and then, when we go, it's still a standing project that will work.

SM: What to your mind has been a successful model of partnerships around the screen? Or, conversely, what hasn't worked?

MG: I think it depends on the people that are there, that want to do it. Three of those original nine screens have a fundamental relationship with universities. Those universities, either through their digital departments, their media departments, their outreach department and community department in one of them, all see the screen as being vital to the way in which they work, for student benefit but also for community benefit as well. Where those institutions have found a real rationale for the partnership, the academic model has worked very well



Fig. 3: BBC Big Screen, Portsmouth, UK. Photograph courtesy of Mike Gibbons.

indeed. But I wouldn't say that you can just drop that into any institution, just like you can't drop it into any city or any town.

Ultimately, LOCOG's job is to facilitate the whole of this network by capital investment. So you do require the partners that want to play ball. So if the BBC said that they didn't want to have, for instance, the staff investment in the system, well you'd have to say then it's significantly diminished, because ultimately, having a person on the ground at that screen whose job it is to manage that screen, to work with the community, to activate the screen, and bring extra local content into the mix – it's crucial. If you didn't have a city that said, 'I want to have an events program, I'm prepared to invest in that events program', you have a similar problem. And there are some terms and conditions in the LOCOG offer, about supporting the sponsors who have actually paid for the screen, and giving access for LOCOG events. And especially giving LOCOG access during the Olympic period, such as during the Beijing Olympics just gone, for Vancouver in 2010, and of course in London in 2012. So, there are terms and conditions for the cities to meet, but most of them find that fine.

I think that if you break it down into the various categories, the cities almost always – and we still work on the basis of them coming to us, although we do try to infill the gaps in the network now – they're almost always enthusiastic about it. Most of them have got a manageable events budget that they can use. The university partners have been more selective, but nevertheless everyone that's actually signed up has really got benefit from it. And then the third level of partnership, which is the arts institutions that are actually involved, have been perhaps the most diverse of all the partnerships.

So you now have the interesting mix of partnership models. We started in Manchester with a professional art centre in Corner House, and perhaps the highest level of curation at any time in the project. Although that level of curation has stopped now because the funding, which was half Arts Council, half Corner House, has ended, the level of professional



Fig. 4: BBC Big Screen, Wolverhampton, UK. Photograph courtesy of Scott McQuire.

investment from Corner House, in terms of using the system, is still there. In Liverpool, the same has happened with FACT. Although that's not been a formal institutional relationship, it has been a practical one. All the examples, curiously, we saw here this weekend [at Urban Screens Melbourne] are from Liverpool. Then, if you then spin on and say 'well, show us some other relationships', Birmingham was always a federal – is that the right word for it? – model, because there wasn't a central core of expertise, unlike either Corner House or FACT. Instead all about thirty institutions got round the table together – to form a federation, or almost a co-operative...

SM: So the screen platform has actually become an instigator for a reorganisation of the art scene?

MG: Yes, and it's a classic way of saying, 'well here's a platform, what do you want to do with it?' and taking it from there. Birmingham actually said 'well okay let's all sit down together and work this through'. Now, there's some other models coming through. At the new Quad in Derby, they're building that program around the screen. That'll be interesting, because they're building, if you like, a program as well as a relationship from the very beginning. I think those relationships will go on and will grow in all of the places where you have new screens coming up. I suppose the challenge is, if your head is all about how do I make sure the technology is going to deliver, then you don't necessarily concentrate as much as you ought to on saying how do I make sure that I keep that level of diversity and input coming in from all of those different sources.

SM: Who should be evaluating that?

MG: Well, I got to the point where in 2007 there were nine screens operating. London 2012 is building its cultural program, and it has seen what you can do with these screens, in terms of public performance, public art, city centres. During the bid phase for the Games, the team that was building that proposition came and looked at them, and they were really enthused. So they wrote the screens into the basic fabric of the culture and UK engagement part of the bid. What they didn't know at the time was that the Head of Culture, Ceremonies and Education was going to be the person who was, at that point, in charge of building the BBC's big screens, which was Bill Morris. So, when Bill got that job, he arrived to find a brief that talked about big screens in city centres – which of course he had been instrumental in creating. And so, while LOCOG concentrates on a whole range of cultural opportunities, the screens have become one of the really big ones.

SM: Do you think that particular orientation of the public program was significant, in terms of the success of the bid?

MG: I won't say that having the big screens was the significant part of the bid, but what the big screens represent is one of two areas where LOCOG distinguished its bid from others. I think everyone accepts the focus on young people was one of the determining factors on the day. The bid team for London 2012 made a huge effort to talk to the rest of the world, and to give them something that nobody else was going to offer them. But there were a number of promises that were made along the way, one of which was about UK engagement, and trying to make the games relevant to you if you live in the north of Scotland or in Northern Ireland, as much as in London. This is a huge tall order, because as everybody knows, if you've had

a Games in your neck of the woods, it's actually quite a tough call, however hard you try.

For London 2012 to say 'our key targets include engaging with everybody, focusing on young people, but making sure we engage with the whole UK', then you have to have some ways of doing that. And so there is a big Nations and Regions team, there is a big Culture team. I run a team of creative programmers, one in each region, whose job it is to actually build the Cultural Olympiad. We've started the Cultural Olympiad education programs now, four years out, as soon as we knew we were the host nation. No one else has ever done that. We're running a load of major cultural projects - twelve of those, and a UK-wide festival – again, no-one's ever done that.

To do this nationally, you need innovative ways to engage with people, and that's where the screens come in. Because, of course, the live sites, as they are now, are a mechanism, for getting engagement in those local areas. It's doing that in two ways. First of all, from a London 2012 perspective we've got minutes every hour. We share the time between the BBC output, London 2012 output, local output, on a managed basis. You don't just automatically say, 'this is my minute, I'll do with it what I wish', but you actually program it. Nevertheless, every hour we're talking about London 2012 content on those screens, and it's open for the community and for the artists to use it as well. The aim is for the whole of that network to contribute to the whole program over the four-year period, right up to the games. The cultural Olympiad program is being built round it. We'll be bringing film and video and music and dance and drama and Shakespeare and programs in public spaces, individual artists projects, many of which have got an application that will work in public spaces on screens in city centres.

From London 2012's perspective, what you're building is an engagement tool for the four years. And, of course, when Games time comes along, you will use it as a way of saying 'come and be part of the Olympics'. If you're not going to come to them, if you can't come to them, or, of course, if you don't want to come to them, then you can go and join in on the day and actually see what's going on. It's our job not just to make sure that you've got the Olympic programming that's going on there, but also that you're building a program of activation there, which at games time is going to be more than just people watching the screen for the sport, but it becomes a real focus of public attention at that time.

SM: Can you say a little bit more about the type of interactive content that you're planning?

MG: Oh, the Holy Grail of Interactivity! And it is, because every time you talk about it, and this applies to just about everybody who you're involved with, it's the big interest. First, let me back track a bit. When LOCOG entered the picture, we began to plan to develop the new screens. So we go off round the country, and we talk to sponsors, via London 2012 and funders, and we sit down and we design the package that is going to get us through 2008. Because we need to say 'what's our target'? You know, this is September 2007, so we're eleven months away from the handover from China to the UK. We've got to decide, are we going to have live sites in operation at that moment we are a host city? Do we have to make it universal across the whole UK? What level of service will we provide, what's the maximum, what's the minimum? Anyway, we settled on eight new screens, operating on the 8th of August 2008 – the Chinese had chosen 8/8/08 which is a lucky number, and it turned out to be eight screens. And by that point there was about seven months to go. By the time everything was actually sorted out, we had only a five-month time frame to build eight screens. Bear in

mind it had taken us five years to build nine, and we were going to do another eight in five months! This was a massive technological challenge. Even though we've sorted out the core providers, and we've got the core technology for the core management systems, you also know that every time you've switched a screen on in the past five years, it's never simple. It's never like turning a television on and there it is. Every one of them, you need to go through a complex test regime, and you're on this incredibly compact timescale. It's like that, there is no slack in it whatsoever, and in fact we only started installing the last of the eight screens with seven days to go. And we switched that one on, along with all the others, on the morning of the 8th of August. And they all worked, which is unbelievable! The team did an extraordinary job to do it. But you can see why, actually, that content question was almost secondary at that point, and the big challenge throughout the whole of this was to keep this issue at the forefront.

During this process, when we got all the cities around the table, they're all sitting around there, and we said to them 'what is it you want?' and 'what is it about content?' And the one thing that turned them on, and the one thing that the sponsors get, and the one thing that everybody – every city – you know everybody gets really, is interactivity. And that's why you say it's the Holy Grail. It is actually an incredibly expensive and difficult thing to do on a regular basis. One of the bits we could only discover in sorting out the project in the last year was, what level of technology is available? What level of technology is affordable? How much can you do now, and how much can you do later? And what we chose to do, and could afford to do, was to get in a level of interactivity where it's possible to interact with your screen; and it is possible for screens to interact with each other.

SM: Do you have special pipes?

MG: Yeah, we put in some special connectivity in order to do that, which is, you know, that's not cheap.

SM: Between all the cities?

MG: Well – and you're right to ask the question – what we chose to do was to say that in order to turn this into a network we need to think again, reluctantly in some cases, about the way in which you manage the project. Because you're going to have to sacrifice something here, for the greater good. The greater good being the fact that you can be constant, you can be consistent, you can manage your targets, you can be accountable, you can report to the people who are funding you. I don't think anybody, until it actually happens, can realise quite how important all of those elements are, that you're able to demonstrate to everybody who possibly wants to know what you're doing. But you do sacrifice something there. Sometimes that's not a bad thing, in that maybe you've let projects deliberately choose their own way forward and sometimes they choose ways that actually you don't want them to go. But others will definitely find that they've lost some freedom or flexibility.

What we did was we put a network operation centre in the middle. So there's a team of people sitting in one place whose job it is to make sure that the overall framework of the scheduling happens on all the screens in the same way, without removing local flexibility. But that central point can download – via high-speed Internet connections – all of the controls, all of the triggers, all of the content. Basically what it does is sends a load of signals to all the screens, the computers and the screens, to say 'at this point you do this. You select that piece of material, you select that window, you make that change', and it's

up to the local screen managers to add in the material to make their screen into the local product. So the national controls tell the screen what to do, they send out national material to all of them, and then the local person that the BBC employs at each screen adds in the local mix to that. They have override capability, they are allowed to use it, but they don't have the freedom to do it whenever they feel like it, without it being registered. So you've got a track of what you're doing.

SM: It's a television model then, more or less.

MG: It's a television model until you get to the local person, and then it isn't. Because ultimately, when you get to the person in the locality, they have a partnership that they manage with the city, and they can make their own decisions – which need to be signed off now – but they can make their own decisions that say, 'it is important that in this week, at this time, we do the following'. So if you're in Liverpool, and it's the Biennial festival, you're not going to want to lose the flexibility to do interactive live projects during lunchtime and the afternoon when you've got a concentration of people available to you. So they will probably say 'we want to take chunks of each hour, rather than small segments of the hour, where we want to run local content during that particular time'. They've still got that capability and that flexibility to do that, it's just a more organised system.

I don't think that's ultimately restricting the opportunity, because the system's been set up with the BBC to allow that editorial flexibility. And I think you have to remember that the one thing the BBC cherishes is editorial independence, so instinctively it doesn't want to take away a producer's freedom to make decisions about what's best for their program, their screen, their output. All we're doing with the centralisation of the content management is to make sure there's a way of minimising unproductive labour. Because most screen managers would spend a lot of their week programming the screen, managing the content systems, tapping stuff into computers to tell the screen what to do. Now, if there's nine of them doing that, well eight of them could be doing something else while one of them did it for all of them. If there's seventeen as there are now, twenty-one by the end of the year, and if it's forty-odd in a year's time, I mean there's a huge amount of labor saving going on just by centralising that task.

PUTTING ART INTO URBAN SPACE AN INTERVIEW WITH JAN SCHUIJREN

JAN SCHUIJREN AND SCOTT MCQUIRE

Jan Schuijren is the conceptual developer and curator of CASZUIDAS - Contemporary Art Screen Zuidas, a 40m urban screen located on Zuidplein in Zuidas, Amsterdam. Founded in 2007, CASZ presents moving images in public space 18 hours a day, 365 days a year. Jan is currently developing the concept for a platform for art interventions over the course of the ten-year urban development of the former Philips terrain Strijp-S in Eindhoven.

The interview was conducted at Urban Screens Conference 2008: Mobile Publics, Melbourne, 5th October, 2008.

Scott McQuire (SM): I would like to talk to you about the process of starting up the CASZ screen. I'm particularly interested in the history leading up to it, where the inspiration came from, the kinds of negotiations and different partners that were brought in, including the Virtual Museum and the Foundation for Art and Public Space, and finally why the location of the screen changed.

Jan Schuijren (JS): I've been involved since 2005 when I was asked as an independent curator to develop the concept for the screen program. At the point where I came in, the Virtueel Museum Zuidas, the district, and the Foundation for Art and Public Space had already been working on this for two or three years. The Virtueel Museum Zuidas, is commissioned as a project bureau by the City Council of Amsterdam and its aim is to intervene



Fig. 1: CASZuidas, Pascual Sisto, *Salamander* (2006).

with artistic programming during the whole development period of Zuidas, a new district connecting Schiphol airport with the city centre of Amsterdam.

In 2002, they came up with the idea of developing something like an urban screen there, in collaboration with the Foundation for Art and Public Space. And they quickly came to the idea that the urban screen should be the art project itself, meaning that the screen's content would be solely, a hundred percent, dedicated to visual arts. They worked for four years to get permits, etc., to integrate that screen into the new facade of the new 'gateway to Amsterdam', as it's called. The railway station in Zuidas that exists now, in a relatively modest form, will in a few years – I would guess sometime between 2012 and 2015 – become *the* gateway for people outside of Amsterdam entering the city.

So the original idea was to integrate the screen into the new facade of this station. But in the summer of 2006 – only twelve months before we actually premiered in October 2007 – the railway company rejected that part of the project, on which all parties had been working for years.

SM: Can I ask you why they rejected it, what was the reason they gave?

JS: We honestly do not know. The only thing we know, to be brief, was that it was something political, and had to do with financial responsibility: how the long term implementation of the screen would be managed, what company would be responsible for the facade structure, and so on. They found it to be too unsure a situation, especially in relation to how the content would be developed over the years. We could give them a clear image of what we would want to present in the first year, but of course, one should be open to how it would *develop* content-wise. So we would not give any guarantee of how the screen would be used in the second or third or fourth year, other than it would still be a hundred percent dedicated to visual arts. And that, for them, was too risky.

In my personal opinion, they then too quickly decided to say – okay, well it cannot be integrated into the facade, so let's just put it on a standalone pillar four meters in front of the facade. On the one hand, it seems logical, but it's a very different thing to have a standalone screen on a pillar in front of a facade that is marking, together with the two huge towers of the world trade centre, the border of a square on which we want to work and *with* which we want to work.

SM: Was there any thought given to locating a screen in the existing centre of Amsterdam, in the more historic district?

JS: That's an interesting question because in fact, there is a huge screen, twice as big, on one of the two historical market squares in Amsterdam. The Rembrandt square is an eclectic combination of bars, clubs, even strip joints, but also grand cafes and really huge discotheques. It's a very touristy place where I, as an Amsterdam citizen, hardly ever go. But it's a very small square at the same time. There are beautiful old trees there, as well as a group of statues depicting Rembrandt's *Nachtwacht*, and given the small size of the square, you cannot allow yourself to look *up* because you will bump into something, or fall over something.

Because of a number of failures on city management level, a commercial company obtained the rights to place an eighty square meter screen on the top floor (the fifth or sixth floor) of a building on the Rembrandt square. Even from the furthest possible distance, you have to really bend your neck back completely to see the screen. I don't know why

this company wanted it there so badly. In fact, they now are having trouble getting enough advertising on it to exploit it commercially.

SM: And what is the public response to that screen?

JS: Where the Zuidas sees over eighty percent of people making use of that square at least four days a week, providing a very regular audience, on Rembrandt square, more than eighty per cent of the people are tourists, or at least people who will not make use of that square more than once a year, or once every few months. So most people will just be confronted with this screen as a one-time only event.

And to be honest – I think I can speak for the Virtueel Museum Zuidas and the Foundation for Art and Public Space, and definitely for myself – we would never initiate a screen on such a square because it has no use. A screen with artistic content has no place on such a square. There's no real reception of whatever you bring there because it's just not something that can become a natural part of that space – and we're speaking about a square where *everything* happens, more or less.

SM: I'd like to ask more about the operation of the screen that you're programming. In your conference presentation you talked about the need to develop forms of familiarity for people, through repetition of programming, and a particular kind of temporal structure. You also talked about the desire to reflect local space and local events in some way. So perhaps you could talk at more length about programming for an audience that is not simply transient, but more tidal – it returns daily – and therefore about trying to structure the programming around that place, and around the specific cycles and rhythms of that community as a way of interesting them and adding a dimension to the kind of public culture that exists in that space.

JS: Well, that last point is the most difficult! Difficult because we have to ask what exactly we are adding *to*. There's not so much there yet because it's really at the beginning stages of development, and this is one of the problems we're facing. It's also difficult because of the absence of 'third party advertising', as we call it. There are no billboards whatsoever, or advertising in any form, and I have to admit that, even for myself, it's something that we are not really used to. And it's very different from the situation in São Paulo,¹ where advertising has been removed to reveal other things that had been hidden for such a long time. In São Paulo, the removal of advertising still adds, on various levels, to the city feel, to the history of it and to all the developments that have passed. But here, the absence of advertising means that people are staring primarily at new architecture, some of which is very beautiful, very inspiring and very alive, but also at some that is simply very dull, engendering a very sterile and somber image.

The fact that we have this 'regular' audience, so to speak, means that we have to work *for* them. Let me put it another way. For me, there are many reasons not to work, at least *yet*, with interactive material or interactive content. Why? Because I think that people who *have to* use that square every day in order to go home, or to go to work, or to cross it to go to the university, would not want to be asked to interact five days a week. I don't think that

1. In 2007, the world's fourth-largest metropolis and Brazil's most important city, São Paulo, became the first city outside of the communist world to put into effect a radical, near-complete ban on outdoor advertising.

will work. If eighty percent of your possible audience is returning more than four days a week, you have to be really careful what you *ask* from them. And, of course, you also have to carefully decide what you *offer* to them, and *how* you offer it to them. After the first year of trying to be very anticipatory in relation to the different moods of the day, with certain dedicated programs for morning, afternoon, and evening, we are now moving towards a more *repetitive* structure, but also a much more *simplified* structure. In all honesty, one reason to start thinking in this direction was to create more time to develop projects for the screen on the long term – all of my time was being taken up by a relatively complex programming structure!

SM: So recognising the habits of your audience also serves a practical purpose?

JS: Yes. When I started thinking that way, being there and researching and talking to people there, I also realised that this could offer a solution, because the complex programming is not recognised as such. So I had to acknowledge that, and change the way of working, which we did for the first time this week. My expectations are in fact that the negative critique will increase, which is okay, because I also think that over time, the positive reactions will increase and will be more distinct in terms of what people think the programming contributes to their everyday life.

SM: A general problem for many cities is a sense of placelessness, and this is particularly acute for new developments. Many cities have large spatial extensions that are built in a fairly accelerated timeframe, so the architecture and the fabric of the city are quite homogeneous, and don't have the textures of different periods and different histories. And it occurs to me that one of the things that you're talking about is how this structure becomes a landmark. It is of course a landmark in one obvious sense, but it's not a landmark in an emotional sense.

JS: No.

SM: Is that one way of describing the stage you're moving in now, that you *want* it to occupy that sense of an emotional landmark, within people's trajectories in that space?

JS: I think that's the only thing you can strive for, because as a structure, it will never be able to become a landmark as it's an uninteresting structure in itself. It may become an identifying point, but not in a spatial way. Because what we're trying to do – what you try to do with art in general I think – is not so much about the actual experience you have in the moment you are confronted with an artwork, but more about what the artwork leaves behind and what it evokes. Sometimes you only acknowledge that you've seen a great work three months after the fact, because you're then confronted in a situation where you have to think of a piece, or elements of a piece of work, and all of a sudden it falls into place. And that's what we hope to create and establish there. That's also why this repetition is important and why it's so beautiful in itself to have the opportunity to have a regular audience. This audience that comes every week, every day of the week, time and time again, allows us to actually to build something over time. Maybe the people in the video that I showed [at Urban Screens 2008] who are now saying 'well, I don't know exactly what I'm seeing here', or 'what should I do with this? Should I take a *long* look at this? Is that *expected* of me?' will, in six months from now, have a very different reaction because they will have seen *one* work that finally falls

into place for them. And they will then also have a different reaction to the whole screen and everything as a whole. That is the kind of landmark that we're aiming for.

SM: Another thing you said yesterday that interested me was that you would have loved to secure the rights to show some soccer matches.

JS: Yes.

SM: You also mentioned that you are working towards the possibility of being able to screen some advertisements. You positioned both as strategies of *bridging*. On the one hand you want to reach out to a community that has a desire to watch soccer matches, but also to a community that is familiar with the language of advertising. Both of these are strategies that aim to bring the audience, who might otherwise feel uncomfortable in relation to this screen or just see nothing in it for them, to the screen and then, once they're at the table, give them that dish to eat, but another one as well.

JS: Yes, that's the whole idea, and I think that is a legitimate way of working, of thinking. It's also how everybody, and how I myself, *learn* about things. Then you can decide more openly whether it's for you or not. The thing now is that, at least in our culture in the Netherlands, there is a huge part of the population that is denying any kind of artistic expression, because they immediately say 'oh, it's art, so it's not for me'.

With the soccer matches I believe that if we start doing that, we should also air the next important soccer match of the Dutch team, in an international tournament at least. I'm not interested in using it in a purely strategic way and then once we have reached our goal say 'okay but now you're not getting that any more'. But I will also never go as far as, for example, the FACT initiative in Liverpool or what is being done here at Federation Square, where programming is partly catered to the community. CASZ is not meant to be, and will never be, a community screen – it has been conceived as an arts stage. And that's a clear difference in our intention.

But for example, in Miriam [Struppek]'s presentation, I was really touched by one initiative she spoke about in which artists came up with the idea to have the people on a square in Berlin write their desires and wishes for the square, or for parts of the city, or for themselves, *on* that location; to have people write their thoughts with a marker on a piece of cardboard, film them in front of this area, and then put that up on a public screen as an advertorial, as advertisement. I think that is a very beautiful, simple and useful way of dealing very directly with the community and enabling a community to have input even in the content, but directed from an artistic concept. That to me is important.

For example, in the case of interactive SMS applications for urban screens, sometimes they can be interesting and there are interesting examples, but the majority of the examples I have seen are either simplified wallpaper applications or I have to read what the person next to me thinks of his girlfriend standing next to him – and I'm not sure if I'm interested in that. Yes, I have to laugh about it, yes it's funny, yes it's entertaining for one minute, but then everybody goes on his or her way again. To me that's not enough when you act in public space, because it becomes a gadget or a technological issue, which of course everybody is interested in for a little while, but then they move on, looking for the next sensation. So that's not something that leaves something behind, that evokes something inside of you, or that you can do something with in on the long term. So it has no place on an arts stage like CASZ.

SM: A problem I have with of the notion of community building is that it tends to treat the community as a kind of pre-formed thing, and presumes that we have these *separate* communities that become targets. I think we actually need to think of community as very *open*, and particularly in the present, we need to question the use of the family as a symbol of what we want public relationships to be. I think that's quite problematic, because it presumes that our relationships are all going to be based on *intimacy*, and I don't think that that is a real possibility in public because you're mixing amongst people you see only very casually, and most of them are strangers. You need to develop protocols of behaviour, forms of sociability, that are quite distinct, which are not based on the relationship you have with your brothers or sisters or wives or children or husbands. I think the tendency to conflate community with this ideal of a big happy family is very problematic. And this is where I'd like to ask you to comment on your new strategy of programming. You were saying, 'I think it will succeed more, but it will also fail more'.

JS: Yes.

SM: So it will mean more *friction*, more complaints. Is that the position you see for yourself, to function as a kind of *unstable* point ...

JS: Yes, because reaction is good! The listening units that I mentioned in my presentation are an important factor in that, because first of all you will have access to better sound quality with the works – we now offer sound through a toll free phone line with the limited quality that comes with that. With the listening units you can produce FM sound or better. But more importantly, it will also allow a guaranteed reception of the work including the sound. Since there will be three listening units, there will be three locations around which the actual act of looking at the screen and looking at the works will be centred. And then the difference in reactions, and the friction that can come out of that, will happen exactly there, *between* people who probably do not know each other. And it will create a discussion, a conversation, or maybe even a relationship, in any form. And that, I think, is contributing to community building, in another way than if you ask the community to input into what the urban screen is presenting. That has never been our entrance point, so that's not the way we are going, at least, not for the upcoming year.

SM: Well maybe we'll have to continue this conversation in a year's time and see where you've got to with that process (laughter). Thanks Jan.

URBAN SCREENS IN TURIN AND MILAN DESIGN, PUBLIC ART AND URBAN REGENERATION

SIMONE ARCAGNI

Renzo Piano – The Beginning

While devising his project for the Beaubourg in Paris, opened in 1977, Italian architect Renzo Piano imagined placing a giant screen on its main facade in order to provide an interface between the cultural centre and the city. Originally intended as a display screen for communication purposes and the advertising of events such as exhibitions, seminars and screenings taking place in the Beaubourg itself, Piano clearly had in mind a great cultural centre capable not only of exhibiting culture but also of conveying and projecting it outwards through its architecture.

Piano's plan for the screen – which was not carried out due to its excessive cost – suggests an architecture that extends out onto the city via its media system, functioning as a site of communication and interaction and thereby contributing to the creation of a new concept of immersive public space. Although the project for the Beaubourg was not realised, in 2000 Piano was finally able to materialise his idea of media architecture with the KPN Tower in Rotterdam.

Light Architecture

The transformative power of media architecture is in some respects consistent with a modern tradition of a close relationship between art and industry, aesthetics and technology, evident in an Italian context in the design of Ferrari, Fiat and Luxottica. However, here we have the addition of a new relationship between art and the public sphere: creativity and public spaces. In this context, Gianni Ranaulo's work is particularly germane, not only at the level of design, but also in terms of its theoretical sophistication, evident in his book *Light Architecture* (also the name of Ranaulo's Dubai-based firm).¹ Through his vision of a 'light architecture', which, like contemporary communication technologies, is fast, lightweight, and ubiquitous, Ranaulo re-imagines and reinvents architecture and urban spaces, while reflecting on its qualities and motivations. Ranaulo pays special attention to the spectacle of the new public space. Architecture is seen as an aesthetic language that informs the city – a language that is able to integrate places and reinvent their functions.

Another instance of the close relationship between art and industry is provided by Space Cannon, an Italian firm specialising in light projects, from the illumination of spaces and architectures to the realisation of veritable light architectures. Space Cannon installed the light towers in the 9/11 memorial in New York, where two light beams rise up in the sky creating luminous ghosts of the two skyscrapers brought down by the terrorist attack. Space Cannon have produced numerous international projects, including the lighting project

1. See the Light Architecture website: www.lightarchitecture.com

for the opening and closing ceremony of the XX Winter Olympic Games (Turin, February 2006). This project leads us to our first case study, the city of Turin.

Turin: Rethinking the City

The ambition of an architecture that can fulfil aesthetic and social functions is well represented by the city of Turin in its process of industrial restructuring. Turin is rethinking its public spaces as part of a larger project of urban development. In this sense, the city is of particular interest as a case study both on a national and international level. A working class and industrial city and the home of FIAT, one of the most important car factory sites worldwide, Turin has been forced to tackle the crisis of the automotive market and consequent job migration. Faced with the threat of economic collapse, the city has invested heavily in culture as well as information and communication technology, in an attempt to avoid the same fate as Detroit, another 'one company town'. Turin is establishing its reputation by playing host to international meetings, exhibitions and festivals, staking its future on creative industries such as cinema and contemporary art.

In Turin, architecture and urban planning are instrumental to the rethinking of urban functionality and aesthetics, and play a central role in cultural restructuring. This creative renaissance is indebted to a strong industrial tradition that is kept alive in the regeneration of key industrial sites and spaces. This urban regeneration process is led by celebrated design agencies, such as Pininfarina, advertising agencies such as Armando Testa, and artists such as Michelangelo Pistoletto, Ugo Nespolo and Mario Merz, who have all been responsive to public art links with industry and commerce.²

It is not by chance that Turin was chosen in 2008 as World Design Capital; its strategy of urban rethinking has involved the 'Politecnico di Torino' (Turin's faculties of engineering and architecture) and is aptly symbolised by the town council's purchase of Lingotto, the huge former Fiat car plant, which has been turned into a venue for festivals, meetings and conferences (in addition to a shopping centre, a multiplex movie theatre, an art gallery, and a hotel).

Another emblematic instance was the opening of the extensive Museo del Cinema housed within the architectural symbol of Turin: the so-called 'Mole Antonelliana'. Its inner space has been redesigned to effectively accommodate the large museum collection, while Mario Merz's light installation, which soon became a new symbol of the town, is displayed on the outer dome-shaped roof. In this way, contemporary art turns to the public while seeking a dialogue with industry and private sponsors. Turin's public art is closely linked to the whole gamut of public works carrying out the town's regeneration plan, financed not just by the local council but also by private sponsors, bank foundations, industry and commerce.

As Lorenza Perelli has observed, the art-based rethinking of Turin's urban planning has

2. On the different approaches and dynamics of urban regeneration through public art see Malcolm Miles, *Art, Space and the City. Public Art and Urban Futures*, London and New York: Routledge, 1997.

been made possible by the collaboration of a large number of local cultural actors such as artists, art galleries and contemporary art museums on publicly funded projects.³ Examples of this can be found in projects such as 'Artecittà, 11 artisti per il passante ferroviario di Torino' (11 artists for Turin's underground railway tunnel) and 'Luci d'Artista' (Christmas light installations by artists), which commenced in 1998 and is still on display. The latter is both a key example of the new relationship between art and private and public sponsors in the redesign of the city, and a reinvigoration of the Italian Christmas light tradition in a contemporary vein. In both projects, art is brought out of the museums and onto the streets, and disparate traditions of public art, video art and land art are merged.⁴ The high point of the city's disposition towards art, information, architecture and public space took place during the 2006 Winter Olympic Games, hosted by Turin. Multidirectional and interactive urban screens and information points were positioned throughout Turin, and in accordance with the ethos of the city's urban project a fully integrated information and communication system was created to enhance Turin's architectural features. A huge screen in the centre of the city at Piazza Castello was the hub of the event, broadcasting the opening, closing and award ceremonies as well as local information. Another huge screen was placed in the nearby Piazza San Carlo, relaying the live events to all those who could not fit in the Piazza Castello.

During the 2006 Games, the Milanese architects Migliore & Servetto installed one of their 'Temporary Architecture' projects – transitory site-specific structures created for festivals, exhibitions and events that change and redesign an architectural or urban space for the duration of a specific happening. The effect of their Turin installation 'Look of the City' was achieved primarily through lights, screens and lightweight structures, realised through over 250 fixed and dynamic installations. Again, Turin chose light and temporary architecture in order to emphasize change, celebration and the uniqueness of a moment. Herein lay the roots of a radical turn towards an integration between architecture, urban design and media technology that was to be further developed in Milan.

Milan Towards 2015

Milan is the financial and industrial capital of Italy, as well as the richest city in the country, with an important tradition in advertising, fashion and television (whereas Rome is the movie capital).

A large urban screen has been recently placed in the city centre (Piazza Duomo) as though to emphasise the strategic importance of squares and historical town centres as *agorá* in urban design. Restoration works are being carried out on historic Palazzo dell'Arengario, and by hiding the scaffolding in front of the facade, the urban screen fulfils an aesthetic function while realizing at the same time the idea of a temporary media architecture.

3. Lorenza Perelli, *Public Art. Arte, Interazione e Progetto Urbano*, Milano: Franco Angeli, 2006, 28-31.

4. For further information on these projects see, Carla Testore, Paolo Verri (eds.), *Luci d'artista a Torino. 14 Artisti Illuminano la Città*, Milano: Electa, 1998, and *Luci d'artista a Torino. Millevocentocentocinquante: Sedici Artisti Illuminano la Città*, Torino: Umberto Allemandi and C., 1999.

The screen's functions are public, social, commercial and aesthetic. Following a specific agreement between Urban Screen S.p.A. and Milan Municipality, 25% of the screen is assigned to institutional communication. By using this space the town's local council can provide the citizens news and information, thereby adapting a traditional task to new media. The square is once again used as a gathering point by visitors and citizens, a place devoted to trade and sociability. Here the screen becomes an instrument for socialisation. Screenings of the 2006 World Cup and the 2008 European football championships were particular catalysts for this new collective, open-air viewing culture. In comparison to the pervasive advertising of mediascapes such as Times Square, the commercial function of the Milan screen is secondary to its public remit and social function. Indeed, while one of the peculiar features of this Milan screen is that the manufacturer and installer Urban Screen S.p.A. also manages content and programming, commercial interests are integrated with public ones. Urban Screen S.p.A. immediately grasped the aesthetic significance of its screen and therefore set up Streaming Museum, a video art event linking together urban screens from different parts of the world and enhancing the transnational potential of the screen. Here videos and movies chosen by different museums could be shown. The company also organises art events such as live media performances.

The case studies of Turin and Milan indicate a significant shift in approaches to the rethinking the city and public space in the era of late capitalism, whereby traditional urban spaces like the piazza gain renewed social importance. Moreover, as Milan anticipates Expo 2015, a fully integrated system of urban screens is in development, with enhanced media integration presaged by the partnership between Screen S.p.A. and Cisco System Italia (the Italian branch of the San José giant). The Milan screen promises to be increasingly interactive and multi-directional platform, with a new focus on mobile devices such as mobile phones, PDAs and netbooks.

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LARGE SCREENS AND THE MAKING OF CIVIC SPACES

AN INTERVIEW WITH SOH YEONG ROH

SOH YEONG ROH AND NIKOS PAPASTERGIADIS

This interview occurred on the occasion of the launch of Tomorrow City Plaza, Songdo, Korea August 7th 2009. As part of this event there was also the Incheon-Melbourne Public Screen Event. This was a live telematic event and transnational digital art performance with active participation from people in the plaza in Songdo and Federation Square in Melbourne. We believe this to be a world first event. It was also a unique use of a Large Screen in Korea, because while there are literally hundreds of screens in this urban environment, they are almost exclusively used for commercial purposes. Soh Yeong Roh is director of the Nabi Art centre in Seoul and as part of this brief she also oversees the projection of artistic and cultural projects on the Large Screen of the Como building.

Nikos Papastergiadis (NP): Can we begin this interview by getting some background on the relationship between Nabi and Tomorrow City Plaza, and in particular, can you inform us if your experience with Nabi was influential in the building of a plaza with a large screen?

Soh Yeong Roh (SYR): Yes. We have been running a public art gallery, COMO, using a large screen for the past 6 years or so. (This is in Seoul and also linked in Daejeon.) We've had numerous opportunities to experiment with different kinds of interactive and artistic contents. But we also thought it was vital to have a public plaza, or a public space, where people can freely gather, air out their opinions, their wishes, desires, and interact with each other, thus making spontaneous yet meaningful communities. You see, large urban screens are okay, but the way that they are used tends to be too ephemeral. We are hoping to have an 'anchored' public place at Tomorrow City, Incheon, that can function as a new public space where the physical (and the local) can interact with the virtual (and the global). It was our great luck to be linked up with Melbourne, Australia, the University of Melbourne, and Federation Square, to carry out this mission in transnational collaboration.

NP: How much involvement did NABI have in the design of the Tomorrow City Plaza?

SYR: Originally we were more ambitious. However, due to financial difficulties, our role was reduced to running the large screen for the first six months including the opening telematic performances. Our original aim was to show what an interactive city can be or should be. We envisioned the city as a living organism that expresses in real time its emotional as well as the physical states. We were dreaming of a new collectivity based on diversity. This is possible with today's media. We don't have to 'average out' opinions or emotions.

NP: Can you tell us a little about the significance of your experience in working with Large Screens and your knowledge of how they were being deployed elsewhere in the world upon the early stages of the design of Tomorrow City?

SYR: Nabi works in collaboration with a world-wide public screen association called *Streaming Museum* whose aim is to share and distribute artistic/cultural contents across borders. One

of the 20 some members is in the Antarctic! Public large screens that show art are emerging globally. In the near future I expect to see more of them popping up across the continents, also discourses surrounding them will emerge soon.

NP: Who would you like to see embrace this public space?

SYR: Young people, of course. But also people from diverse nationalities. You see, Songdo city aims to be open up to the world. Tomorrow City is the centre of Songdo, where people with diverse backgrounds can co-exist peacefully, right? Tomorrow City can hold cinema nights of the Philippines, Vietnam, and China, for instance, for the migrant laborers. They can also link up with their home countries and show some live actions/events in the public space. Why not?

NP: You mentioned earlier that you have now defined your role as a content-provider, can you expand in your vision of how to program work for that site?

SYR: Right now the large screen works as a window to the world airing cultural and artistic contents from around the world and also to the world through Streaming Museum. But as the city itself develops and its inhabitants become more diverse, we want to involve the inhabitants in the art-making events. After all, it is their space, their screen, not Nabi's nor the government's.

NP: What are your general thoughts about the relationship between large screens and public space. How do you program work for people in an open space where they gather to socialize, rather than a gallery which is not only an enclosed space but also a destination that people go explicitly for the purpose of seeing art? Do you think that the challenge of the large screen is that it enables artists to enter the fabric of the city from different dimensions, and what sort of responsibilities does this also entail?

SYR: Large screens add new dimension to public spaces. With interactive technologies the possibilities are wide open for new ways of experiencing time, space and community. More and more we are witnessing art being integrated into the daily fabric of everyday lives. If we worried about commercialization of art in the past century, we see art now expanding into every realm of contemporary life. Artists, curators, and art administrators can no longer exist in enclosed spaces. We must be more sensitive to the issues of our times, be more informed, and more concerned. We must be able to make more meaningful connections to every realm of the society. In the end large screens cannot help making art more political, one way or the other. The key issue would be how to sustain 'artistic independence', if such a thing really exists.

NP: Can you describe the scale and technical capacities of the Large Screen?

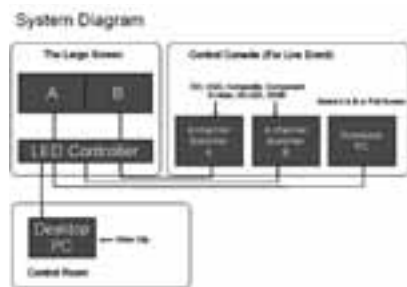


Fig. 1: System diagram of the large screen.

SYR: The Large Screen is a rectangle in shape, 10.24m in width and 3.84m in height. The Plaza is an oval like in shape and 3024.8 square meters (about 77m in length and 46m in width). Therefore, the size of screen is about 1/77 of the plaza.

The wide screen can be played in both a single screen mode and dual screen mode. It can take not only video files but also all other files that can be played on computer. The resolution is 1024 x 384 pixels. Also, the screen is

connected to the Internet and mobile networks for live web streaming and interactive telematic events.

NP: It sounds like you wanted to strike a balance between clarity of vision that activates people engagement, and also a scale that was not too overwhelming so they people did feel dominated.

SYR: Rightly so.

NP: What steps are you taking to develop content that is appropriate for this site?

SYR: First we come up with ideas – some line-up of artworks that we think might be appropriate for the occasion. For that our curatorial team discusses with various artists until they together come up the suitable ideas. Then we discuss them with the city council that is in charge of administering the large screen and the public space. Usually they say OK unless they see some nudity or obscene languages. They seem to apply similar standard as that of public TV stations, though they haven't come up with certain set of rules and regulations.

NP: what do you think of the public effects of the artwork?

SYR: It is impossible to generalise. What may be possible is to categorise artworks and to do user study, or user analysis. Like, games, cinema, telematic and so forth. Depending on the degree of engagement on the user's end, the effect of the artwork will be different, while catering to different kinds of audience groups.

NP: During the telematic event I was struck by the enthusiasm of audience, and their willingness to participate by sending messages to the screens via their mobile phones. What was your perception of the event?

SYR: In terms of audience reception? (laughs) Well, I think they came with an expectation of a spectacle. It puzzles me how the audience got the idea. Maybe because it was open-air? Or maybe people tend to think something technological is always grand? Anyway, they were ready to be carried away by a spectacle, but it took us a while to get to that spectacle. In the meantime, we asked them to do this and that, trying to engage them in new and unfamiliar interactive works. Frankly, I think we bored quite a number of people there (laughs). The younger audience was probably more amused, I think, but older people were perplexed because they haven't experienced that kind of setting before. I learned how hard it is to mobilise general audience. They are very much used to passivity.

NP: I imagine that one of the challenges that you face is to find artists who are very attuned to the complex feedback that exists between an artwork and the audience. It is true that many artists are entirely preoccupied with the formal and substantive content of their work. Once they have made 'their' work they consider it to be complete. However, they are now many artists who have adopted a different approach. For them, the work exists and develops through the feedback that it produces with the public. The work takes form not just in the mind or the studio of the artist but in the interactions and through the participation of the public. Research is, therefore, not only important in the development phase, but also a crucial component in the feedback process. I think this trajectory in contemporary visual practice is very pertinent for the kinds of projects that could be developed for large screens. As part of this strategy of giving more emphasis to the experience and input of the public, you will be pleased to note, that even in this opening event we had a small team of researchers doing surveys. I think they interviewed up to 200 people. The aim of this survey was test the perceptions and impressions of the public.

SYR: I can't wait to see the result! I can't agree with you more on the importance of research on the receiving end. Without proper research, it is as if walking along a bumpy road with eyes blindfolded. You can bump into all sorts of obstacles, fall down, and even get hurt. What we are doing together, not just curating, showing and enacting artworks, but researching the result, is the right thing to do. This kind of research must be continued on a long-term basis, so that data can be accumulated.

NP: Now this leads me to my final set of questions which is about the impact. With commercial uses of large screens the assumption is that the audience is transient. Hence, the messages are very short and intense. They are designed to capture the glances of people who are in traffic. However, large screens as we know them are not just about mobile audiences. They can also be used in places where people gather to socialise. In these places there is in a sense a captive audience. With the installation of large screen in Federation Square in Melbourne we witnessed a total transformation of the public space. It provided a new kind of focal point that was never there in the city. It also presented a new kind of curatorial challenge: how to program for people who were at some point in the day just passing by, and at others, for people who have come to a specific event? So there's a significant distinction between the mobility, what's designed around mobility, and people who are more engaged and attracted to specific events. At Federation Square, it appears that they're having to sort of work with a different level of expectation of how the screen can be utilised in that kind of public environment, one that is totally different to the experience of being in a cinema or watching television at home. This is new kind of experience *and* it will require the generating of new kinds of artistic content, so this is not going to be an easy period for some people, because in a sense no one is already familiar with it. So how will you develop strategies to hold people's attention in this kind of environment?

SYR: By trial and error! We learned in hard way how difficult it is to please general public with art and cultural events. The only event that could hold the attention of the general audience substantially would be a football game. Our strategy is to hold people's attention? Divide and rule! (laugh) We must segment audience with groups and provide them with differential artistic/cultural content. But of course we can't always do that. Large screens are mostly for the non-descript, general public. So there should be a clever mix of entertainment and art. We would start by introducing 'soft' art for the general audience. Then little by little we hope to introduce 'hard' ones.

NP: From your experience of the projects shown at Como what seemed to work best?

SYR: Something that speaks to people's hearts. You see, Koreans are living in a very competitive society. Their life is already hard. They don't really want to see artworks that are too critical, subversive, or overly intellectual. They are hungry for artistic/cultural stimulus that speaks to their emotions and elevates them to a higher level. In this sense, poetry fares well in Korea. In general, texts are clearer than images, and easier to understand.

NP: So it is not necessarily something that's like the latest technological wizardry, but something that's more simple and direct in its communicative reach. Given that Tomorrow City Plaza is primarily a transit and shopping centre is your aim in some ways to have artwork that has an ambient quality, that is, artworks that can be picked up at any point? Have you seen any places where this has been successful?

SYR: Yeah, in fact I know one such billboard. This is not a media screen, rather a large

painted board attached to a building at the Seoul city centre. It says a new phrase each month – simple texts, like, 'autumn, poetry in every heart', or 'mother, the greatest name on earth'. Because of its poetic yet succinct statement and the static image in the midst of busy traffic, it stays in the public's mind longer than you think. I notice people talking about the phrases in their conversations...

NP: Hence it enters into the public domain.

SYR: Isn't it something? These simple texts work as headlines in the collective consciousness of the people. They are quite powerful. They may be more powerful than those brilliant advertising images flowing around the city. I am interested in understanding the differences in their impacts. Mind you, the text phrases in the billboard are not just texts. They are also perceived as images because of their typography. The texts generally have nothing to do with politics, economy, or social issues. They are about us, ordinary individuals, speaking directly to our hearts according to the season. And yet, somehow, they transcend individual boundaries. A true public art, I would say.

NP: One other thing that I'm interested in is gaining a better understanding of the point at which people recognise that there's been some impact. There is a tendency to assume that a genuine impact only occurs immediately and spontaneously. But this ignores the fact that there can be a delayed response that is very different to the first impression. For instance, sometimes people say 'I like it' or 'I don't like it' and particularly might say 'I don't like having an experience of the large screen', but then three months later, you see the same person actively using it. Similarly with mobile phones, at first people hated them – well some people liked them, I personally hated them – but then you get on with them. So it'll be interesting to see at what point people adjust or even become enamored to this new technology, or if it's a specific work. One of the big challenges will be to consider how works that first appear on large screens may then adopt a new life through the multiple layers of consciousness and long-term memories. Is this a challenge that seems pressing to you?

SYR: Well-said, Nikos. I agree with you in that a blink does not determine everything. Emotion is still a mystery to us. If we know what long-term effects a specific work has through layers of consciousness, we will have solved the mystery of humans. Emotion is a complex interplay of the mental, the physical, and the social. It may be the last black box in the study of humans, but it is also the most important element in understanding humans. Art is at the forefront of studying and understanding humans because it almost always stirs emotions, new and strange. Yet in art, we have plenty of raw materials, but don't have the methodologies necessary to make sense of the raw data. Other than something called insights, or instincts, we don't have means to explain certain phenomena or affects. So it's like, we feel it but can't really explain it... you see? Still, this does not mean that we are exempt from censoring ourselves.

NP: What do you mean by censor ourselves?

SYR: We should censor our motives, be reflective and reflexive as much as possible.

NP: Do you mean to be critical or conscious of the implications of what we do, and develop a level of responsibility?

SYR: Yeah. If art cannot be contained in gallery or museum spaces and tries to make connections with the wider arenas of society, then art practitioners need to be more aware of the implications of their actions. This is the civility that art in the twentieth century was encouraged

to ignore. Art in the twenty-first century is no longer in an adolescent stage protected by loving patrons of the past age. Art now has to prove its values out in the open field.

NP: Can you tell me a little bit more about how you think good art has a strong civic role as well?

SYR: Perhaps this is good time that we define the term 'civic'. It is a loaded term, you know.

NP: I mean the culture of the city, the way in which the values of the city are built, how people behave and feel a sense of responsibility about their place, and how, through that feeling for that place can clarify both a personal and social identity. How does this particular function of having art on a large screen in turn contribute to that civic culture?

SYR: I think a good public art should be able to question our notion of the 'civic', reflecting on it, asking if there are any holes, rather than conforming to it. The term 'civic' can be refined and redefined by good public art. In the end, it is a process of cultural negotiation.

NP: Obviously, there are clear guidelines on these matters that have been developed in relation to the cinema. But how do you adjust for public taste when by definition it can be so broad. In the cinema, there is at least the choice of going or not going in. This boundary does not exist in a public square. How will you respond if an individual feels humiliated and wants to complain, but the majority of people do not? Do you have to change it because of that one person? Or do you have to say, well, that's your problem my friend?! (laughs)

SYR: Well, the large screen as well as the plaza belongs to the city government, and they have a council that determines the appropriateness of the content. At least we don't have to face angry public directly, but we can get fired by the city council.

Most of the time they don't interfere with the artistic contents, unless we show nudity or obscenity. It is usually about the time allocation of art vs. popular entertainment, which we negotiate with the city government all the time. We try to inch in more art, whereas they try to appeal to the general public through popular music videos or ball games. Our real challenge is how to keep the identity of the large screen at Tomorrow City plaza as an art screen through the times. Showing consistently good public art works will be the key.

NP: What sort of parameters and values do you think are necessary for that kind of civic responsibility?

SYR: Understanding, fairness, willingness to communicate, compassion; plus critical capacity, independent thinking/actions, purity of motives. Am I asking too much? But I think highly of artists and art practitioners.

NP: Yes, it is even more difficult when you consider the context in which these screens now operate. Public spaces are rarely inhabited with a homogenous audience. People from many different classes and regions, people from all over the world are increasingly the users of public spaces. In all big cities you can hear a multitude of languages in public spaces. In our live link up between Melbourne and Songdo there was the specific challenge of finding work that would work with and not just across cultural differences. I think this is going to be the big challenge for anyone involved in coordinating public art events.

SYR: Of course. But referring back to the simple billboard texts, there are ways to reach the universality without sacrificing individuality. Indeed, this is what distinguishes good art from not so good art.

SPECTACULAR MEGA-PUBLIC SPACE ART AND THE SOCIAL IN TIMES SQUARE ¹

JULIA NEVÁREZ

In recent years, Times Square has been transformed through a disciplining of space whereby maintenance and safety paved the way to a form of governance led by the privatised effort of the Times Square Alliance. The success of constant efforts have engendered a mega-public space devoted to maximise consumption through marketing and advertisement strategies in screens that have proliferated into multiple surfaces. This chapter seeks to place the changes of Times Square into a historical perspective whereby the branding of the city (and of Times Square in particular), the success of privatisation, and new marketing strategies integrate all kinds of content including changing social and art content into the representation of Times Square as exciting, creative and cutting edge. It is my contention that the development of this mega-public space functions as a space that accommodates large sectors of the public and that turns the public itself into an audience: 1) as spectators of Times Square screens, and 2) as content of global events transmitted to the rest of the world. The possibility to embrace the transformation of Times Square as a dialogical space for an active critically engaged public, however, is clouded by the overwhelming proliferation of marketing schemes to seize the public and address them as ultimate consumers (actual and potential). The art and social displays contribute to the experience of Times Square as an exciting space and to late capitalism's ability to integrate critical commentary into the circulation of commodities. As mega-public space, Times Square rewrites the new and packages future expectations into a consumer logic while it expands its reach globally. Times Square epitomizes the concentration of ways of seeing through screens in the frenzy of global capitalist crisis.

I. Mega-public Space

The layers of information, messages, strategies, and functions of Times Square generate a mega-public space in that the scale of advertising contents, marketing strategies and number of people reached exceeds the expectations of any other public space in a large metropolis. The actual physical space has recently been modified in an experiment to test the provision of a larger pedestrian space; a few streets have been closed to car traffic. In this space, temporary portable chairs have been provided for passersby as well as a set of steps permanently located where people can sit and observe Times Square. As such, Times Square is consid-

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1. This chapter elaborates on themes addressed in Julia Nevárez, 'Art and Social Displays in the Branding of the City: Token Screens or Opportunities for Difference?', *First Monday, Special Issue #4: Urban Screens: Discovering the Potential of Outdoor Screens in Urban Society* 11.2 (2006), <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/viewArticle/1551>. The themes in this article helped compare the current transformation of Times Square within the context of what was initiated approximately five years ago. Observations in Times Square as well as visual documentation, archival research and analysis of the Times Square Alliance and Creative Time websites are part of the information analysed.

ered to be an 'ever changing theater set, with both fixed and temporary elements'.² This effort is lead by the desire to transform Times Square into a 'world-class public space'.³ After successful maintenance and safety efforts in the past, it is understandable how Times Square can now develop policy-based on research to intervene in attracting larger audiences. The Design Trust for Public Space report in the Times Square Alliance website identified 'pedlock' as a major problem in the area and cites one of the most recognised American urban writers and scholars, Lewis Mumford from *The City in History*, 1961:

The great function of the city is to encourage the greatest possible number of meetings, encounters and challenges between all persons, classes and groups, providing a stage upon which the drama of social life may be enacted with the actors taking turns as spectators and spectators as actors.⁴

The vagueness of such statement leaves ample room for the implementation of controls otherwise left unchecked and assumed as proper functioning of the space to accommodate large audiences. The function of this public space is to choreograph chaos and observed it from the sitting areas made available. According to the information on the Times Square Alliance website, the goal is to:

Provide spaces and opportunities for public art, small scales performance and creativity... that reinforce Times Square creativity, energy and edge and its appeal to New Yorkers.⁵

Included in this scheme is the display of chairs designed by specific artists and marketed in support of that location.

II. Global Audience – Global Public

A massive number of people venture on a daily basis through the 'Crossroads of the World'. Over half a million every day, more than 30 million tourists per year and a worldwide audience for the New Year's event of one billion people generates the ideal scenario for marketing to a global audience and generating a global public. Including the events that take place there, the public who visits the district also become part of the event watched by those who are distant. This combination between in-the-place with the distant makes Times Square the perfect set for a captive audience to be seduced by the numerous, constantly improved and increasing marketing strategies across proliferating screens.

2. Design Trust for Public Space, *Times Square: The Next 100 Years – Problems & Possibilities, Re-imagining the Pedestrian Environment in Times Square*, 2005, p. 13, http://www.timessquarenyc.org/facts/documents/Problems_and_Possibilities_sm.pdf
3. Times Square Alliance, 'About Us – Public Space Projects', http://www.timessquarenyc.org/about_us/public_space.html
4. Lewis Mumford, *The City in History: Its Origins, Its Transformations, and Its Prospects*, San Diego: Harcourt, 1961.
5. Design Trust for Public Space, *Times Square*, p. 18.

The creation of seating space turns the audience into spectators and as actual and potential consumers. The seating audience are also performers and are part of the screens content for the 'world's most dynamic stage'.⁶ Regarding the new mega-public space of Times Square and the expansion of pedestrian area and sitting space, the media group City USA distributed postcards asking: 'are you happy with the new Broadway?' The answers to this question could be provided on their website and charges may apply if answered through text messages. This media group is comprised of four other companies: billboards, wallscapes, kiosks, and Times Square spectaculars vendors, progressive non-traditional marketing services, mobile marketing vendors who specialise in ways to target audiences on their mobile devices, warped sidewalk bridges and scaffolding company. The proliferation of surfaces and marketing strategies attest to the character of Times Square and the combination of multiple factors that warrant the mega-public space of Times Square to be one consumed by a more advanced level of privatisation. Once the safety of pedestrians is attained and their destination safely controlled to observe and accept their role as performers, the spectacle of consumption reaches a new level.

– Branding Seeing and Being Seen

Debord made us aware of the spectacle of capitalism's consumer logic and most recently Virilio among others, problematised the proliferation of screens from TV to public space assemblages as having socialised us into passive spectators, distant and disconnected.⁷ The standardisation of vision, the normativity of how, and what we see is for Virilio, one of the conditions of contemporary mediated society. This normativity is most evident in how places become marketed through branding as they represent the unique character of a place.⁸ The branding of urban experience or the urban experience as a marketing tool has also become part of a larger frame where locales such as Times Square continue to seduce consumers into purchasing new products – cultural and otherwise – and serve as a laboratory where marketing strategies are tested. In the website of the organisation that manages Times Square – The Times Square Alliance – the following is offered as Times Square's purpose:

An outdoor laboratory for new ways to communicate and advertise in a vast metropolis. If the creation of a mass market has been one of defining features of America in the twentieth century, it owes much to Times Square and its brash and seductive signs, also known as 'spectaculars'.⁹

6. Times Square Alliance, 'Facts – Economic Development', <http://www.timessquarenyc.org/facts/newduffy.html>
7. Guy Debord, *The Society of the Spectacle*, Detroit: Black & Red, 1970; Henry Giroux, *Beyond the Spectacle of Global Terrorism: Global Uncertainty and the Challenge of New Media*, Boulder: Paradigm Publishers, 2006; Timothy Luke, *Screens of Power: Ideology, Domination, and Resistance in Informational Society*, Chicago: University of Illinois Press, 1989; Paul Virilio, *Open Sky*, trans. by Julie Rose, New York: Verso, 1997.
8. Michael Karavatsis, 'From City Marketing to City Branding: Towards a Theoretical Framework for Developing City Brands', *Place Branding* 1.1 (2004): 59-73.
9. Times Square Alliance, 'About Us – Events', http://www.timessquarenyc.org/about_us/advertisingtimesquare.html

Times Square is represented through different mediums – websites and other informative literature – as:

‘the world’s most commercial and frenetic space’,
 ‘the world’s most famous media capital’,
 ‘exemplifying neighbourhood’s creativity and energy’,
 ‘instant international icon’,
 ‘the best of New York: creativity, energy and distinctiveness’,
 ‘[a] commercial carnival’,
 ‘[a] chaotic and globalised performance of light, noise and crowds’,
 ‘bringing the cutting edge of contemporary art to the neighbourhood’,
 and ‘[as a place to] allow for the exhibition of creativity as a way to express Times Square unique qualities’.¹⁰

All the previous representations are the contents for the branding of Times Square and constitute the attractive messages for marketing strategies.

The most concentrated mass market in NYC, Times Square employs 20,000 people, has 500,000 passerby per day, and 10 million viewers to programs such as *Good Morning America*, a sign in Times Square gets ‘1.5 million impressions per day and the New Year’s Eve Ball Drop hosts 1 billion people – including visitors and global audience’.¹¹ Times Square is the playground for tourists and the affluent global professional class who constitute the service sector of the global city.¹² Times Square – along with other public spaces such as Central Park, Bryant Park and Grand Central Station, to name a few – is part of a broader frame of public space transformations. In a series of transformations through simultaneous forms of governance Times Square has flourished into a mega-public space and a fertile ground for new marketing strategies.

III. Governmentality through Privatisation: From Discipline to Security

The Great White Way and the place where all roads meet are representations of Times Square that refer to both: the preeminent place where billboards first appeared and its importance as a public gathering place. Many events have received coverage through the screens of Times Square including contemporary events such as Obama’s Presidential triumph, screened and celebrated there. Art content and social issues have also been a component in the content of Times Square’s screens. The emphasis on preparing Times Square mediated mega-public space for large audiences however, has been achieved by a concerted effort to discipline publics. The implementation of surveillance can be understood as a form of securing the governance of publics according to the presumed needs of the area.

10. Times Square Alliance, <http://www.timessquarenyc.org/>

11. Times Square Alliance, <http://www.timessquarenyc.org/>

12. Saskia Sassen, *The Global City: New York, London, Tokyo*, Princeton, NJ: Princeton University Press, 1991.

The layered experience that Times Square offers – branded through its representations – responds to the simultaneously acquired discipline and implementation of sophisticated surveillance strategies. The environment that generates this dynamic interplay of layered experiences and the disciplining of audiences’ behaviours developed historically. It was once considered a dangerous place ridden with vice, drugs and sex, later a family entertainment district led by the Walt Disney Company initiatives of the early nineties, and currently efforts to ease pedestrian flow by blocking car traffic, and the proliferation of screens and marketing schemes, has today established Times Square as a mega-public space. Likewise, audiences in Times Square have been socialised into the needs of capitalist transformations, especially those present that epitomise the consumer logic prevalent there. For Scott and Rutkoff, art and entertainment in Times Square has generated an ambiance of festive, safe amusement.¹³ In current depictions, Times Square has preserved its festive and safe amusement character with art and creativity at centre stage buttressed by the surveillance, control and maintenance led by the privatised effort of the Times Square Alliance.

The Times Square Alliance is the organisation responsible for managing and directing the use of this iconic space. From the Great White Way display of lights, to the years of neglect, and the family entertainment district most recently developed by Disney, Times Square has followed a similar path in what now constitutes a generalised, improved, and more sophisticated privatisation trend in urban public space. Privatisation can be understood along the lines of efforts to discipline and secure that form of governmentality, in developing policy and interventions based on a detailed demographic account of visitors, residents, and the spatial characteristics of the area.

Biopower is a form of governance that places a strong emphasis on accounting for groups of individuals as population, and is especially useful in the densely populated environments of the metropolis.¹⁴ The concept is related to processes of gathering information, generating databases and analysing its contents to develop policy to direct the efficient control of individuals in the population.¹⁵ According to Foucault, this model helped to literally count large numbers of people as population along specific demographic indicators such as sex, ethnicity, age, and so forth. Administering the necessary discipline to control population is accomplished through the enforcement of laws and a socialisation of individuals into conforming to the rationality of the state and its economy. This rationality is based on a long trajectory of changing political organisations from the pastoral-based mode of sovereignty to the current era of globalisation that begets a different set of assemblages to govern and manage populations. Surveillance and measures that produce awareness, reflection, and acknowledgement of conducts and behaviour respond to the ethics and morality of the time as they are inscribed in the corresponding disciplined bodies. Currently neoliberal

13. William Scott and Peter Rutkoff, *New York Modern: The Arts and the City*, Baltimore: Johns Hopkins University Press, 1999.

14. Graham Burchell, Colin Gordon, and Peter Miller (eds.) *The Foucault Effect: Studies in Governmentality*, Chicago: University of Chicago Press, 1991.

15. Michel Foucault, *The Birth of Biopolitics: Lectures at the Collège de France 1978-1979*, ed. Michel Senellart, trans. Graham Burchell, Basingstoke: Palgrave Macmillan, 2008.

ideologies based on individual responsibility and the preeminence of the market have led to the necessary conditions to secure measures of control through a mediating milieu. According to Foucault:

What is the milieu? It is what is needed to account for action at a distance of one body on another. It is therefore the medium of an action and the element in which it circulates. It is therefore the problem of circulation and causality that is at stake in this notion of milieu...The apparatuses of security work, fabricate, organise, and plan a milieu even before the notion was formed and isolated. The milieu, then, will be that in which circulation is carried out. The milieu is a set of natural givens – rivers, marshes, hills – and a set of artificial givens – an agglomeration of individuals, of houses, etcetera. The milieu is a certain number of combined, overall effects bearing on all who live in it... Finally the milieu appears as a field of intervention in which, instead of affecting individuals as a set of legal subjects capable of voluntary actions – which would be the case of sovereignty – and instead of affecting them as a multiplicity of organisms, of bodies capable of performances, and of required performances – as in discipline – one tries to affect, precisely, a population.¹⁶

In American neo-liberalism, the forms of efficient governance developed by it require the least state intervention to the already and constantly disciplined population. The forms of that discipline that seek to secure the specific ways the state functions are evident in The Times Square Alliance as the emergence of a new kind of governmentality through privatised efforts. One could argue that efforts such as the Times Square Alliance are becoming new forms of private/public relations of governance where maintenance and surveillance are some of the forms used to discipline the population. Moreover, the Times Square Alliance models Times Square as a milieu for the circulation of individuals in the now pedestrian mall according to research-based policies that inform such design for marketing purposes. Art and social contents also become part of the circulation of goods and commodities, ideas and cultural forms that in this neo-liberal landscape conform to the milieu by which audiences are addressed. The development of these strategies of intervention can be traced in the transformation of the Times Square Alliance's goals.

– 2003: *Discipline, Control, Surveillance*

The Times Square Alliance emerged in 1992 as an organisation formed by the vested interests of businesses in the neighboring area to Times Square, dovetailing with policies implemented by the then Mayor Giuliani who sought to establish public order in New York City's public space. This attempt provided an image of safety for tourists and a global professional class at a time in which New York City became one of the centres that coordinated finance, advertisement, and other services globally. The upper tier service sector professionals moved to work and to live in the city and the city responded by making sure that high standards of safety, maintenance and aesthetics were obtained. The policies of the Giuliani's administra-

16. Michel Foucault, *Security, Territory, Population: Lectures at the Collège de France 1977-1978*, ed. Michel Senellart, trans. Graham Burchell, Basingstoke: Palgrave Macmillan, 2007, pp. 20-21.

tion strengthened police patrolling, implemented strict public space rules to pedestrians, street vendors and bicycle riders. The process of disciplining the population through surveillance and maintenance generated a space where law was severely enforced and where homelessness and poverty turned into the elements to be displaced as the city became hygienised from such visual pollution. This was an effort partially in reaction to the fiscal crisis of the 70s that left public space neglected and to the 80s and 90s governmental retrenchment towards public services in the city. The Times Square Alliance mostly functioned to lead efforts to maintain public space where there was a crass lack of public funds for that purpose. According to The Times Square Alliance website, the alliance works to 'improve and promote Times Square - cultivating the creativity, energy and edge that have made the area an icon of entertainment, culture and urban life for over a century'.¹⁷

Referred to by Reichl as cleanliness, security, and visual coherence, the efforts implemented through the Times Square Alliance mainly focused on sanitation and public safety.¹⁸ Cleanliness and surveillance became the two strongest components in this first phase of privatisation. The Times Square Alliance Public Safety Officers (PSOs) were unarmed but fully trained, who patrolled the district on foot and who were linked by radio to the NYPD. During this period the Midtown Community Court was created to prosecute the most common criminal acts characteristic of the area at that time: turnstile jumpers, graffiti artists, illegal peddlers, prostitutes, and some small time drug dealers. It is at this point that the incipient process of collecting population demographics began to take shape. The Street to Home Initiative was a bi-annual survey to account for the number of homeless people in the area.

– 2009: *Securing Governmentality*

Currently the Times Square Alliance has become institutionalised and moved its efforts to a more nuanced level of management once the solution to 'problems' such as homelessness and poor people have been successfully dealt with, generally speaking. It is a robust and stable organisation that has successfully implemented maintenance and surveillance to the area and has grown exponentially to become the platform for marketing strategies, monitoring the growth of the district and implementing public space programs. The Alliance provides direction to the development of the district based on policy drawn from information collected about the area and its users. As a form of institutionalisation, the logo of the Times Square Alliance functions as a marking of the organisation's territory and can be identified in all spaces and objects in Times Square, including maintenance workers and security guards uniforms, public events advertisements, trashcans, banners, and garbage bags.

Moreover, the initial attempt at obtaining information about the population that visits Times Square through counts and market research has now evolved to include other aspects. The Street Watch that was originally implemented to report safety and quality of life conditions in the Times Square neighbourhood, continues to account for criminal activity in

17. Times Square Alliance, 'About Us – Jobs', http://www.timessquarenyc.org/about_us/jobs

18. Alexander Reichl, *Reconstructing Times Square: Politics and Culture in Urban Development*, Kansas: University Press of Kansas, 1999.

the area and has grown into a more sophisticated mechanism to implement surveillance policy, including suspected terrorism. From being called Safety Officers in the late 90s to the early 2000s, they are now called Public Safety Officers and Sanitation Associates. Their presence as well as that of the police and surveillance cameras signals a comprehensive surveillance approach to the area.

Times Square Alliance is 'striving for a pristine district'.¹⁹ The Alliance works to profile the district's economic output and potential growth, track transit and pedestrian counts, tourism data (the great number of people who visit and work in the area are the anchors of marketing strategies) as well as retail openings and closings, residential units, and the marketing of billboards. The Alliance conducts monthly floor retail surveys to track vacancies as well as monitor residential and commercial development in the district. They conduct Winter and Summer pedestrian counts in 20 different locations and since 2003 produces Quarterly Indicator Reports that include demographic information characteristic of the area to monitor changes. Moreover, as a pseudo-governing body, the Alliance 'advocates on behalf of its constituents with respect to a host of public policy, planning and quality-of-life issues'. The Alliance is a 'i501(c)3 not-for-profit organisation, accepts tax-deductible contributions, and is governed by a large, voluntary Board of Directors' which exemplifies a major trend in the provision of public services.²⁰

In addition, the Times Square Information Centre physically located there is managed by the Alliance to provide relevant information to tourists and visitors about events in Times Square. This information is also provided in the website. The Times Square Alliance website contains events, programs, information about the Times Square information Centre, Public Space Projects, Security and Sanitation, Quarterly Indicator Reports, Board of Directors, Staff, Future of Times Square and it is as busy and overwhelming as the physical screens in the actual area. The website has become another screen that through the Internet replicates the overload of information also experienced on the ground in Times Square.

As part of the many faces of privatisation, the website functions as a source of information but also as a consumption space where tickets for events and goods can be purchased. Moreover, the 'Crossroads' card offered in the website is a 'free incentive program designed to encourage employees and residents of the Times Square area to get more out of the neighbourhood'.²¹ The card seeks to encourage local customers to frequent local businesses because of the 'value and exclusivity of the offers'.²² Those who work and live in the area are encouraged through this marketing scheme to also consume art and entertainment in the area. A different Times Square from that of the masses that visit it on

19. Times Square Alliance, 'About Us – Events', http://www.timessquarenyc.org/about_us/advertisingtimessquare.html

20. Times Square Alliance, 'About Us', http://www.timessquarenyc.org/about_us

21. Times Square Alliance, 'About Us – Crossroads: Times Square Card', http://www.timessquarenyc.org/about_us/crossroads.html

22. Times Square Alliance, 'About Us – Crossroads: Times Square Card', http://www.timessquarenyc.org/about_us/crossroads.html

a daily basis is offered as a privileged experience for Times Square Employee Resident, Times Square Human Resources Professional, and Times Square Neighbourhood Partner with the card program. For the business card holder, the Times Square Alliance offers a marketing platform with:

[A] potential reach to over 250,000 residents and employees in the 1.9 mile radius that encompasses the Times Square Alliance District with free targeting marketing, positive public relations, opportunity to showcase business to cardholders through exclusive events, and encourages businesses to contact through Human Resources and offer the card as part of the company's benefits.²³

The message to attract residents in the area to become members of the Crossroads Card is: 'you probably know you are a cut above the rest and now you have a card to prove it'.²⁴ The emphasis on the exclusivity of living in the Times Square neighbourhood is heightened. Access to the Crossroads Card is encouraged to offer employees Calendar of Times Square Events, Times Square Alliance Events, Event Space in Times Square and Happy Hour Spots in the area.

The privatisation of Times Square has taken many shapes including the management of crowds and time-based use where events are scheduled for specific groups of people. For instance, a yoga practice was scheduled to celebrate the Summer Solstice where yoga mats, bags and t-shirts with the Times Square Alliance logo were given to participants. They also advertised in the website the different yoga schools located in New York City. Announced and managed through the website, events – and all kind of information regarding Times Square – replicates the overwhelming feeling provoked by the physical screens in the area. As the advertising mecca considered to have the largest concentration of media headquarters in the world, screens in Times Square have proliferated dramatically, dovetailing with multiple technologies.

IV. Of Other Screens

The billboards in Times Square are: spectacular, spinning spectacular, vinyl, led display, vinyl with blinking border and neon. Times Square is one of the only places in New York City where zoning regulations are designed to protect the screens on the buildings in the area. In 2009, screens have proliferated in Times Square including the largest spectacular covering 17,000 square foot digital screen, the nation largest most advanced digital super sign in Walgreens.

Screens are increasingly used to introduce a product in both the screens in Times Square and in the Internet through specific websites. Interactive outdoor advertising is the use of these complementary technologies, the screen in Times Square and the screen of the computer in the Internet website. An example of this marketing strategy is the street event generator where passersby could customise a Nike tennis shoe through the use of their

23. Times Square Alliance, <http://www.timessquarenyc.org/>

24. Times Square Alliance, 'About Us – Crossroads: Times Square Card', http://www.timessquarenyc.org/about_us/crossroads.html

cell phone, which was then displayed on the Thomson Reuters screen.²⁵ Another example was the Japanese Kinemo greeting card company, which for Mother's Day displayed customised cards, took a photo of the display in Times Square, and sold it back to the consumer for \$69. The digital sign content went back to the website and generated a new revenue stream, connecting the brand to a big sign in Times Square. This is an example of a marketing strategy that enables the connection directly to the consumer out in the square or in the web all over the world. This brand-based experience is a recent marketing strategy that is presented as unusual and exciting within the context of the uniqueness of Times Square where so many pedestrians have cell phones. The marketing company considers that this strategy offers the opportunity to grab the pedestrian's attention and the possibility to engage in some sort of interaction. CNN offers audio through the cell phone with a charge. Nevertheless, these are not the only instances in which pedestrians are addressed by screens. The proliferation of screens and their multiplier effect can be traced to other surfaces in the milieu of Times Square: trash receptacles (recepta-signs), street poll banners, buses, cell phones, cameras, phone booths, scaffolding and the Times Square Alliance website. The screens are also becoming the new playground for digital artists who deal with the challenges of generating formats for different kinds of screens that require different translations of content into digital technology, the size and shape of the screen. The Times Square Alliance also sponsors public art in the district.

V. Art and Social Content

Another most recent initiative Art Times Square, seeks to incorporate diverse elements of art into Times Square's streetscape, thereby expressing the area's 'uniqueness and enriching the pedestrian experience with different kinds of public art'.²⁶ After the district has become safer through the surveillance and maintenance efforts of the 2000s, more windows of opportunity have emerged for art content in the district.

The 59th Minute curated by Creative Time originally presented video art in the NBC Astrovision screen owned by Panasonic during 2000 to 2007 at the last minute of the hour. Since 2008 Creative Time curates video art now presented at the MTV 44 1/2 screen, a collaboration that began in 2008. The video art is presented according to MTV's availability, in a flexible length of programming block usually for a month.²⁷ The MTV 44 1/2 screen works along two static boards on each side and the MTV store across the street, combining on screen advertising and in-store merchandising seeking to generate an impression in the marketplace. Products can be introduced into the market through the combination of the digital screen, the static screens and the store across the street. Under the challenging and edgy message: 'expose yourself in Times Square', MTV seeks to attract business to 'launch a product or create brand awareness' through the marketing triangulation of screens, store

25. 3 Minute AdAge, May 27, 2008, <http://adage.com/brightcove/single.php?bcpid=1370868150&bcid=1569953846>

26. Times Square Alliance, <http://www.timessquarenyc.org/>

27. Interview with Creative Time Staff Member (May 25, 2009), <http://www.creativetime.org/index.php>

and worldwide reach through the TV.²⁸ According to *The New York Times*, Times Square is the place for large product introductions and the MTV screen package maximizes this potential. The marketing scheme also offers interactive text to screen messaging as well as bump shots on worldwide broadcasts.

Within the visual saturation of images, designed advertisement for consumption of goods and ideas, art has also become part of the packaging of Times Square's experience. The representation of Times Square – similar to other areas of the city – is manufactured with the intention of attracting tourists and the professional class to the city. Understanding the connection between the representation of the city through branding (as a marketing strategy to develop areas in the city such as Times Square) and privatisation (a consequence to government retrenchment that acts as a mechanism to allocate private funds to manage and maintain public space) is a strategic dyad that has developed into a trend followed by many cities nowadays with degrees of variation. The global homogenisation of landscapes through contemporary urban development initiatives such as branding is also a dominant trend. The standardisation of urban development, maintenance, surveillance and aesthetics are part of this formula for 'successful' public spaces.²⁹ Once this is accomplished, a full-blown comprehensive marketing scheme that arranges cultural goods is set in place and colours the experience of the city, most poignantly in the case of Times Square.

Art, regrettably also functions – like political commentary and social issues – as part of the consumption logic that constantly reinvents itself to engage and attract audiences and constituencies who might have alternative and even progressive perspectives. Among the contents portrayed in the mediascape of Times Square, there is a recurrent address to the temporal theme. HP Windows has a static board that reads 'the future is now' and CNN digital message reads 'welcome to the future'. In both instances, present time is accelerated to an immediate future. Appropriately stated by Lyotard, the present time is confounded by the future:

What comes 'after' the 'now' will have to come 'before it'. In as much as a monad is thus saturating its memory is stocking the future, the present loses its privilege of being an ungraspable point from which, however, time should always distillate itself between the 'not yet' of the future and the 'no longer' of the past.³⁰

It is in this overload of information that memory becomes a constant forgetting and a neutraliser of content. The overload of information that characterises urban living reaches its peak in the mediascape of Times Square, and processing this information requires content to be somehow defuse and forgotten.

28. MTV 44½, <http://www.mtv445.com/>

29. Julia Nevárez, 'Central Park: The Aesthetics of Order and the Appearance of Looseness', in K. Franck and Q. Stevens (eds.) *Loose Space: Possibility and Diversity in Urban Life*, New York: Routledge, 2007, pp. 154-170.

30. Jean-François Lyotard, *The Inhuman: Reflections on Time*, trans. Geoffrey Bennington and Rachel Bowlby, Cambridge: Polity Press, 1991.

Some of the social issues that protrude the marketing laden screens' content are artist's sponsored organisations like 'Be Great America' for Boys and Girls Scouts displaying Denzel Washington. Another static board portrays a photo of Albert Einstein for The Foundation for a Better Life, that promotes values such as honesty, confidence, caring, optimism, hard work, helping others founded by a Christian Evangelical leader, even though it does not denominate itself as a religious organisation. Another social issue in Times Square is the use of a telephone booth as a screen to advertise H&M supporting the fight on AIDS with purchases at the store. From a more environmentally aware perspective, the Coca-Cola sign, an iconic staple in the Times Square mediascape announces that the display is powered by wind energy. Other content displayed on the screens are: open happiness, make something. A bank advertisement shows a list of running messages of what could easily be considered urban New York City-specific allusions. The advertisement shows the following running text: vilified, gentrified, open to possibilities, proud, adventurous, elusive, a richer place, obligation, misfortune, temptation, soldier, style, survivor, find out what you can do, commit to change, open to the world, luxury, confidence, vanity, make the world a richer place. Many of these contents carry a positive connotation and conform to the layered space of Times Square as a mega-public space.

VI. Conclusions – The Mirage of Dialogical Space in Mega Times Square

As argued elsewhere, the provision of physical places where dialogue and critical engagement can take place, and where historical awareness and a critical examination of the contents of screens can be discussed, should be considered a necessary transformation for public space.³¹ The provision of a safe and well-maintained physical space for pedestrians in Times Square has been attained. However, the possibilities for a critical dialogical space in which to engage seems muted by the excessive control and the scale of measured use. Events are scheduled and highly contrived. While dovetailing with the richness of public life, pedestrians are made to fit within marketing strategies. The disciplining of audiences and the way these controls are secured as forms of governance attest to the success of privatisation and to the dexterity of capitalism to integrate and produce within its circulation of commodities any content that can attract more consumers. This is evident in the most recent social and art content in the Times Square screens. Critical engagement, however, is not particularly encouraged when a rather passive role of spectator, observer and consumer dominates the behaviour in this mega-public space. A more active participation than that of a mere spectator is limited to text messages that are also staged for consumption purposes or free events that promote specific goods sponsored by the district.

There are at least two possible takes on Times Square. One could be the cynical view of a full-proof marketing package for profit including the experience of the place as well as art and social content. Another is a more organic view where all the spaces within this marketing frame are not controlled through privatisation all the time. Nor should the dynamic way in which interventions in public space, outside disciplining practices or interventions based mostly on demographic information gathered from the population, need to happen

only in the mega-public space of Times Square, but also in other smaller and larger public spaces around the world. Constantly traveling between these two takes, with different levels of intensity and emphasis from individuals to populations, one could consider yet another improvement in the development of the Times Square district. Transforming the forest of screens, the grand canyon of spectacles that is Times Square, by presenting art content across all the screen and documenting this transformation on the ground and virtually through the Internet, might be considered an enticing project as the next development of Times Square.

31. Nevárez, 'Art and Social Displays in the Branding of the City'.

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PART 3
PUBLICS AND PARTICIPATION:
 INTERACTIVITY, SOCIABILITY AND STRATEGIES IN
 LOCATIVE MEDIA

PUBLIC ART IN NOMADIC CONTEXTS

GISELLE BEIGUELMAN

This chapter discusses some urban interventions I did using commercial electronic billboards in São Paulo between 2002 and 2004. All the projects happened in networked environments, dealing with collective forms of appropriation of the advertisement system as public space. They allow us to discuss public art in a nomadic context where the interface becomes the message.

My point of departure is that network culture's action space is an informational space, mediated by communication networks which have systematically imploded not only the notions of distance and locality,¹ but also the limits between the places of art, advertising and information, on the one hand, and the relationships between place and non-place, on the other.

It is true that some of those transformations go back almost half a century, and they are not tributary of the everyday's digitalisation. The land art of the 60s, and particularly Robert Smithson's gigantic earthworks,² for example, have reconfigured public art, because they broke the prevailing relationships between works and places of memory, introducing the concept and the practice of tensioning between site and non-site, or place and non-place.³

Thus, the meaning of a monument as an agent of the past in the present is emptied, starting from a fraying of the Newtonian tradition in which time is defined in relation to space. Conceived as works with dimensions often incompatible with the human scale, dealing with perishable materials and diagrammatic forms, they configured a new architecture without qualitative value.⁴

An architecture which can only be read momentarily and contextually, as the contemporary urban landscapes and their series of slums and skyscrapers, bridges and dejections, or supermarkets and gadget stores, with their infinite shelves of everything and a little more. Ethereal, amorphous and de-objectified, that kind of work dealt with entropic situations in which it seemed impossible to ask 'from which period is that?', making one interrogate 'where was that time?'⁵

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1. Manuel Castells, *La Galaxia Internet (Reflexiones sobre Internet, empresa y sociedad)*, Barcelona: Debolsillo, 2001.
 2. For Robert Smithson's earthworks, art projects, biography, bibliography, references and essays, visit <http://www.robertsmithson.com>
 3. Nelson Brissac, *Art/City – Urban Interventions [Arte/Cidade – Intervenções Urbanas]*, bilingual edition, São Paulo: Senac, 2002.
 4. Robert Smithson, *Entropy and the New Monuments* (1966), http://www.robertsmithson.com/essays/entropy_and.htm
 5. Smithson, *Entropy and the New Monuments*. http://www.robertsmithson.com/essays/entropy_and.htm

However, if it's true that some subjects related to the paradigmatic break of the networked cultures today were somehow prefigured in other contexts, one cannot ignore that cyberspace's ubiquity has maximised those tensions, forcing us now to re-elaborate space in the ambit of referential non-tridimensionality and beyond geographic circuits, in malleable territories which articulate themselves in the punctual cartography of global cities, from and among the networks' dynamics.⁶

It is what we call 'cybrid' configurations, situations resulting from the on- and off-line networks' interconnected experience, that occur in the traffic mediated by control systems, electronic panels, cell phones, PDAs and intelligent agents, such as those which I dealt with in some projects since 2001, including *Wop Art*, *Leste o Leste?* [*Did You Read the East?*] *egoscópio* [*egoscope*], *Poétrica* [*Poetrica*] and *esc for escape*.⁷

In spite of their differences, all these projects are related to reading and creation contexts marked by nomadism and by shared strategies of appropriation of advertising devices. They deal with situations in which inscriptions volatilise, and interfaces multiply and fragmentise the reception in electronic surfaces connected to telecommunication networks.

They investigate the possibilities of a hybrid culture, crossed by printed and digital, phonetic and non-phonetic substrata, in which informative, programming and aesthetic codes are entangled, producing a new semantics of organisation of signs and significance procedures, within which the relationships among words and symbols are re-articulated, and the limits of language, communication and art are redefined.

To discuss the new forms of creation mediated by increasingly remote, fast and wireless networks, with which *Wop Art*, *Did You Read the East?*, *egoscope*, *Poetrica* and *esc for escape* dialogue with, it was imperative to take into account the unprecedented reading contexts that emerge in the interaction with mobile network interfaces, as cell phones, and of distributed reading, as electronic panels.

So it is important to highlight some meanders of their creative processes, because more than guiding the development of those series of nomadic poems, they could be indicated as their presuppositions or conditions for existence. I recall, therefore, some verifications that were formatted before, during and after their creation:

- The popularisation of portable wireless communication devices with the option of connection with the Internet, and the proliferation of telecommunication spaces in urban areas, as electronic panels, point to the incorporation of the nomadic life pat-

6. Saskia Sassen, 'Towards a Sociology of Information Technology', *Current Sociology* 50.3 (2002): 380-382; available online from <http://www.columbia.edu/~sjs2/PDFs/webpage.infotech.pdf>

7. See the following websites, *Wop Art* (Wap op art), <http://www.desvirtual.com/wopart>, *Leste o Leste?* [*Did You Read the East?*], <http://www.desvirtual.com/projects/did-you-read-the-east-leste-o-leste/>, *egoscope*, <http://www.desvirtual.com/egoscopio>, *Poetrica*, <http://www.poetrica.net>, *esc for escape*, <http://www.desvirtual.com/projects/esc-for-escape/>

tern into the large city's way of life.⁸

- Instruments especially developed for adaptation to traffic and displacement situations, PDAs, cell phones and electronic panels, are adaptation tools to an urban universe of continuous acceleration and entropy, which alters and adapts itself to new forms of perception, visualisation and reading.
- Art conceived for those nomadic interfaces demands a reflection on reception in environments of constant flow and in displacement situations that involve interaction with different equipment related to multiple and non-correlate tasks (such as speaking on the phone and driving, checking e-mails and eating, or watching films privately and being in a line).
- To create for those conditions of saturation and entropy implies rethinking the nature of artistic fruition and communication's conventions and formats in the range of a culture of ubiquity, in which contemplation will vanish.

Creation directed to that emergent liquid reading context, which happens from and in the flow of connection systems, forces us to ask: *How to think an art form that may be read 'in between', among varied and simultaneous, but not synchronous, acts and interfaces?*

Wop Art was the inaugural gesture of that reflection, and it presented to the reader an imponderable situation: optic art (op art) accessible via mobile Internet in WAP (wireless application protocol) cell phones. It can be said that the situation was imponderable, not because of the medium's rudimentary nature at that time, the middle of 2001, but for the incompatibility between what was given to read and its reading context.



Fig. 1: User browsing *Wop Art* wap site.

The Op Art of the late 1950s and 60s is a key reference for a reflection on virtual experiences, since the image one sees, resulting from the optic effect, doesn't exist, but is realised as a potential of the original structure. It is a form of virtualisation that depends on the reader's degree of concentration and introspection, but images conceived for mobile devices no longer relate to contemplation. They are made to be seen in traffic, in a state of dispersion, according to a logic of acceleration that makes introspection unviable.

It was not the case, therefore, of trying to adapt Op Art to cell phones to create an optic series that could work as a Tamagotchi directed to a learned public, fetishising the device and contradicting the object, but rather, proposing an ironic situation in which the friction between content and reception conditions sounded as an instigation: to face the novelty of another status of art fruition in entropic environments.

8. William J. Mitchell, *Me++: The Cyborg Self and the Networked City*, Cambridge, MA: MIT Press, 2003.

Art not to be seen as art – mixed with communication devices and presented for reading interrupted by several other inputs – was a mode of relationship that was intensely explored in my next two projects, *Leste o Leste? [Did You Read the East?]*, accomplished during the project *artecidadezonaleste* in São Paulo in April 2002, and taken to the limit in *egoscópio [Egoscope]* in August of the same year.

Did You Read the East? and *egoscope* involved public streaming processes, commercial urban telecommunication devices and Internet functionalities. Based on a combination of networked systems and electronic billboards, they allowed web users to send online content to the panels. Submitted materials were inserted every three minutes between the advertising clips commonly displayed on these billboards. A webcam focused on the outdoor screen relayed images back to online viewers. Despite these similarities, however, the conceptual and technological backgrounds of the two projects were very different.

In *Did You Read the East?*, it was possible for any Internet user to select and send to an electronic billboard, from 11:30 am to 8:30 pm, using only browser resources, e-graffiti created by myself.



Fig. 2: *Did You Read the East?* on-line interface.



Fig. 3: Electronic billboard displaying user submission for the *Did You Read the East?* intervention. (Photography: Helga Stein)

This large billboard (360 ft) was located on the Radial Leste freeway, which connects downtown São Paulo to one of the city's most complex urban areas.² Images were inserted every three minutes, between the advertising clips commonly displayed on this kind of communication device. A webcam focused on the outdoor screen relayed images back to online viewers.

Conceived in the context of a wide urban-intervention project in the city of São Paulo, *Arte/Cidade* dialogued with one of the evidences of the silent civil war that unfolds there on a daily basis: the visual guerrilla warfare of graffiti.⁹ A series of six videopoems, composed with stylised fonts, "invaded" the programming of a regular electronic panel, among several other advertisements, with themes such as violence and social hypocrisy, but also speaking of love and lyricism, mismatching form and content with the support it occupied.

The relationship of online and urban spaces, connected to the Internet, and the deep connection of its discussions with the specific location of the

panel used for urban teleintervention, gave the project the outline of an 'e-site-specific work'. In *egoscope*, however, spaces were related in a cybrid form: they connected several networks in an anti-biography of a being (the very 'egoscope').

The teleintervention happened in August 2002, and it allowed anyone connected to the Internet to send, by means of the *egoscope* website, other sites to two electronic panels placed in a busy avenue in São Paulo (av. Faria Lima), used to display the advertising of several companies. At the *egoscope* website, the public was invited to participate in an anti-biography, mapping a being of unidentified name, age, or gender, a disembodied post-subject who is not recognised in any space besides that of telecommunication.

It was a character who lived in the boundaries between art, advertising and information, promoting a permanent state of *disorientation* and *hybridisation* of those terms.¹⁰ In a sentence, the public related, during the teleintervention, to an inhabitant of the global city who was made by processes of passivity and interaction, *entropy* and *acceleration*.

During the two weeks of teleintervention, situations were created in which the public was invited to post sites departing from some questions: How is the egoscope? What is his/her sex? Age? What does he/she like? To which restaurants does he/she go? Does he/she have a car? Which car? Where does he/she live? How is his/her house? What does he/she make after work? In fact, does the egoscope work? Which places does he/she frequent? Does he/she have vice(s), some perversion? What does he/she read and listen to? Which are his/her favorite sites?¹¹



Fig. 4: *egoscópio* online interface.



Fig. 5: *egoscópio* project, electronic billboard displaying user submission. (Photography: Helga Stein)



Fig. 6: *egoscópio* project, electronic billboard displaying user submission and webcam feedback.

10. For a complete sample of how *egoscope* was shown to the public, producing a permanent confusion between the limits of art and advertising that permeates digital culture, visit <http://www.desvirtual.com/egoscopio/english/documentacao.htm>

11. To know the interface used by the public during the teleintervention, visit <http://www.desvirtual.com/egoscopio/english/teleintervention.htm>

It was not mandatory to answer those questions, however. *egoscope* participants were free to submit any site to the panel and most of the participants in fact didn't follow the pre-established scenarios. This was important in order to multiply *egoscope*'s nuances as a mutant personality with multiple identities, accentuating the *egoscope*'s character as the alter ego of the twenty-first century's urban culture, a disembodied being made of fragments of advertising, of consumption, and of the reprocessing of what he/she absorbs and digests.

As soon as they were posted, the sites were automatically transformed into video files and images appeared on the panels [Fig. 6], dispersed in the daily grid of advertising, as if they were plain ads, ready to model another fragment of other thousands of *egoscopes* who are in the streets.¹²

The URLs appeared as advertisements, dispersed among other ads, on two electronic panels of 215 ft each, located at avenue Faria Lima, in front of Shopping Centre Iguatemi, where 120,000 people transit every day. Drivers and pedestrians certainly understood some of those URLs as mere advertisements. Nevertheless, the street audience was subjected to the same processes of interaction and passivity as our protagonist.

All material captured by the server that manages the e-panels could be checked online by images shot with webcams located below the e-panels. Simultaneously, images were re-sent to the remote public by means of webcams that captured the panel's display and transmitted its results to the Internet, allowing a curious and particular experience in cybrid spaces.

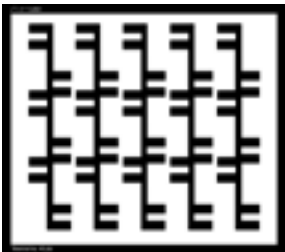


Fig. 7: $z2 \times 3 = \text{ballet}$, Giselle Beiguelman, 2003.

The websites appeared following the submission orders and according to the panel schedule (one insertion of 10 inches every 3 feet). Some of them were published twice or more, depending on the users' choices and on the on-line traffic. Some were not displayed at all because of the short time I was entitled to use the panel (ninety daily insertions).

Because of the project's technological structure and its conditions of transmission in the electronic panels, following the order of ads scheduled to be broadcast, its reception was

intercepted by processes of passivity and interaction, entropy and acceleration, outlined by its delays. Those delays stressed the confusion of limits between art, advertising and information, since it was very difficult to differentiate, on the panel's webcams, what was an *egoscope* insertion from materials of the other panel users (commercial companies' ads and public services).

In that sense, we can say that the delay in the context of this multi-user teleintervention between submission and publication reinforced the hybridity of these terms (art, advertising and information), which are typical of all digital media that use online systems. Combining

12. A scheme of the implanted technology is available at <http://www.desvirtual.com/egoscopio/english/tec.htm>

cyberspaces and urban spaces, *egoscope* was revealed through a process of combustion and planetary assembly, centralised in the Web and which happened in a disperse way in the programming grids of two electronic panels, with 215 square feet each, located in Faria Lima Avenue, in the city of São Paulo, facing Iguatemi Shopping Centre.

Paradoxically, the Web, the most fragmentary of mediums, is the only place where, by means of the inputs received and recorded in its database – where the more than 3,000 sites posted along the 14 days of teleintervention are aligned – it is possible to get a unified vision of *egoscope*.¹³

However, the references and registrations that now give us an idea of what was *egoscope* should never compose an imaginary figure, as if it were the image of a body made through 'cut and paste'. As it was said before, *egoscope* is a post-subject and, thus, it is non-ontological, it has many faces and identities, it is multiple, fragmented and distributed.

In other words, *egoscope* is a character mediated by the media, a disjunctive personality of all the other bodies. A sign, syntagm and paradox of the public art generated by and for telecommunication circuits, a project whose object was to interrogate cybrid space, guided by the interconnection of on- and off-line networks, starting from some symptoms:

- Exercises of multiple identities
- Multi-authorial operations
- Hybrid languages
- Nomadism and de-territorialisation
- Discontinuous integration of mediums
- Open Public Streaming

In spite of their differences (site-specific and net-specific works), both occurred through the connection of spaces (the electronic billboards' locations, and the visitors' locations), of media (Internet, webcams and panels), and of telecommunication systems (intranet and the Web).

However, everything that was viewed was always a result of an interaction (between the creator and the businesses which produced the interfaces, between the audience and the creator, and all these and the online and off-line traffic). The audience was called upon to operate commercial goods, to be curators or editors of the content generated by the artist. The audience had to construe meaning, working with advertising and communication devices in the realm of a fluid reading context.

This was a bet on new aesthetic, cultural and behavioural perspectives unveiled by the digital media, based on the assumption that art created for remote communication devices is rendered through an integration of aesthetic, technological, cultural and advertising repertoires associated with a new appreciation of artwork, and disconnected from its function as object. This was the central issue in *Poetrica*.¹⁴

13. The complete list of sites sent by the public is available at <http://www.desvirtual.com/egoscopio/english/lista.htm>

14. *Poetrica*, <http://www.poetrica.net>

Poetrica was accomplished in two stages. In the beginning, it was a series of visual poems made of non-phonetic letters with non-alphabetic fonts (system fonts and ding bats). This process results in poems where the textual meaning does not emerge from the visual construction. It's the opposite: a non-phonetic text writes an image and a different meaning.

Every poem has in its title the equation that was typed before the sequences of operations (additions, superpositions, divisions, etc.). In addition, each poem has a colophon, placed at the bottom, specifying the name of the font, size of the font, and whether or not it has a vector effect.

An example makes it clearer. The title is: 'z2 x 3= ballet' and indicates the algebraic operation and the meaning that emerges from it. The colophon is the font used (Tele-marine) and its size (43 pts).



Fig. 8: *Poetrica* in São Paulo at Faria Lima avenue. (Photography: Helga Stein)

Conceived for PDAs, the Web, and for unusual dimensions of paper and printing methods (like plotters and old spin printers), *Poetrica*, in the first stage, also explored different contexts of reading and perception, beside new paradigms of digital visual poetry.

In the second stage, *Poetrica* became an urban intervention, or more precisely a 'teleintervention'. The intervention, which began in São Paulo and ended in Berlin, accomplished between October 2003 and April 2004, was an investigation of reading and creation in

entropic and continuous traffic situations. It involved the visual poems composed by me with non-phonetic fonts in the first stage, and an urban teleintervention mediated by public creations with that same typographic repertoire.



Fig. 9: *Poetrica* 'ad+oetries' at Kurfürstendamm electronic billboard. (Photography: Helga Stein)

In the stage accomplished in São Paulo, images were produced anywhere, via SMS (text message via cell phone), fixed and mobile Internet, and made available in electronic panels located in the urban blotch of Galeria Vermelho, in the avenues Paulista, Consolação and Rebouças.

Those images were also retransmitted online by webcams, and replicated in different devices (cell phones, Palms, computers) and, in some cases, in plotters and other digital printing systems. Re-dimensioned and saved as something new, those images, however, were always composed of the same information, but lacking connection with a specific support, thus resulting in independent visual meanings of their textuality and dissociated from their site of production and diffusion.

In Berlin, *Poetrica* was presented at the digital poetry exhibition P0es1s¹⁵ indoors, at Kulturforum, and in public space. In the museum space, *Poetrica* consisted of a set of large dimensions prints, a DVD projection¹⁶ and a project website. In public space, *Poetrica* was displayed at Kurfürstendamm electronic billboard and in the movies, in trailer format, announcing the P0es1s through the series 'ad_oetries' (ads + poetry)¹⁷ conceived specially for this venue by invitation of Friedrich Block, P0es1s curator.

In that sense, *Poetrica* stressed the logic of cloning, which permeates digital creation. In spite of being identical in format and informational content, messages produced in the scope of *Poetrica* are not identical with regard to fruition and legibility, evidencing the most fascinating aspect of the clone logic: its ability of being identical while being different.

esc for escape (2004), my last project conceived for electronic billboards, continued this investigation about reading and reception processes in entropic and continuous traffic situations, but exploring not only more media resources but also public art as collective and distributed creative processes oriented to a common target. Commissioned by the 2nd Art and Technology Biennial of São Paulo (art.ficial emotion 2.0), hosted by Itaú Cultural, the project is a cross media work on error messages.

In short, it is a documentary on life beyond the screen with outputs in DVD, electronic billboards and indoors exhibition, mediated by Internet, SMS and MMS. The audience was invited to submit error messages (text and images) by mobile phones and the Web. Their submissions appeared on a commercial electronic billboard at Paulista Avenue (São Paulo) and simultaneously in the exhibition space at Itaú Cultural, and some of them were incorporated into the documentary.

At the exhibition room at Itaú Cultural, it was possible to browse the error messages archives, follow the updates that appeared in the electronic billboards, and watch the documentary on error messages. As in the former experiences I had with interventions in commercial electronic billboards, I think the most interesting challenge of the project was to make people



Fig. 10: Error message submitted to the electronic billboard that fed the cross-media documentary *esc for escape*. (Photography: Giselle Beiguelman)

15. P0es1s - Digitale Poesie ran from 13 February to 4 April 2004, organised by the literaturWERKstatt berlin in cooperation with the Brückner-Kühner Foundation (Kassel) in the special exhibition hall at the Kulturforum Potsdamer Platz, Berlin. See <http://www.p0es1s.net>

16. Some samples of the DVD and the large dimension prints are available for download at <http://www.poetrica.net/english/download.htm>. For further images and critical context of the work, visit <http://www.mediaartnet.org/works/poetrica>

17. ad_oetries, http://www.poetrica.net/english/ad_oetries.htm

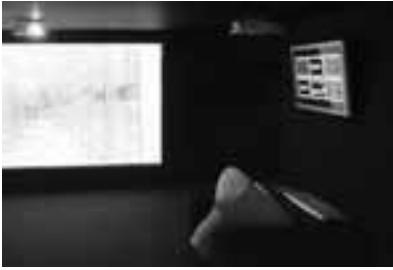


Fig. 11: Partial view of *esc for escape* in the exhibition space, showing the Web interface for archive browsing, LCD display fed by public space electronic billboard messages and the documentary on error messages. (Photography: Helga Stein)

“second-hand originals”, as Peter Lunenfeld states, peculiar to that nomadic public art that, for being clonable and disconnected from the support, dematerialises the medium to make the interface become a message.¹⁸

face the strange situation of hacking the advertisement structure as part of their public space and sharing it with other participants.

All that was created on the Web or by cell phone, however, was seen and read in a completely different way, according to their reception context (electronic billboard, DVD documentary, website or exhibition room), and that is not a result of the screen dimension, or of the kind of surface to which images and texts momentarily adhere. It is the result of a ‘mutable aesthetics that accommodates contemporary phenomena like

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STALKSHOW

KAREN LANCEL AND HERMEN MAAT



Fig. 1: *StalkShow*, Amsterdam-Sloterdijk train station, 2004.

'What is rejected and refused in the symbolic order reappears in reality. Specters, ghosts and phantoms haunt the world'.¹

StalkShow is a screen-based, wearable performance and installation, which deals with the threat of insecurity and isolation in public spaces. It is exhibited in spaces where people are in transit, such as train stations, underground stations, museums, theatres, plazas and shopping malls. *StalkShow* is designed to be a meeting place, accommodating the vulnerable process of balancing fear and desire for the 'other'. In a visual and poetic way, *StalkShow* explores the emotional and social tensions between visibility and invisibility, privacy and trust. A performer carries a backpack, containing a laptop with a touch screen, a wearable billboard, to which a webcam is attached. Individual audience members are invited to touch the screen and navigate through an archive of statements on the subject of 'safety'. As participants touch the screen the webcam records their faces, which then appear instantaneously on the screen as portraits.

The statements used in *StalkShow* derive from agora-phobia-digitalis.org, a web-based

1. Thomas Y. Levin, Ursula Frohne and Peter Weibel (eds.) *CTRL [SPACE]: Rhetorics of Surveillance from Bentham to Big Brother*, Cambridge, MA: MIT Press 2002.

project where we invite socially isolated people, such as prisoners, nuns and asylum seekers to contribute their reflections on their personal strategies for negotiating sociability.² By navigating through these statements, the participant triggers a montage of social strategies and renders them visible on the urban screen. In their visual format, the statements resemble advertising jingles. However, by amplifying and rendering these expressions of insecurity interactive, we endeavour to make it possible for these reflections and reactions to be re-experienced and reinterpreted in the public realm.

Portraits of participants appear via webcam and wireless connection as backgrounds to the statements on large-format screens in the same public space, so participants can see themselves 'watching' through a text-window. Other participant's statements are linked to each personally rendered image, and hence an interpretive space is created, which accommodates the threat of difference.

From Agora Phobia (Digitalis) to *StalkShow*

In *Agora Phobia (digitalis)* the audience is invited for an intimate dialogue. *StalkShow* makes an opposite move: it exposes these intimate dialogues to the outside urban space, and projects them on urban screens. In *Agora Phobia (digitalis)* people are invited as 'specialists' on 'a safe and unsafe space'. All participants are the authors of the dialogue texts. Their saved dialogues show a way of 'communicating in circles': they show a personal, 'logic' form of communicating, on the subject of 'rejecting communication'. For *StalkShow*, we transformed this circular form of communication into circular texts. We call these texts 'mind-loops'. As a reference for this format we used R.D. Laing's *Knots*, which contains circular texts like: 'Jill is afraid that Jack is afraid. But Jack is afraid that Jill is afraid that Jack is afraid. So Jill is afraid...'.³ These texts result in evermore complex, self-confirming *hallucinatory* structures. Every line in the texts seems logical and begins with 'because', 'so', 'but' and 'that's why'. We selected parts of the circular communication of *Agora Phobia (digitalis)* and formatted them as they are in *Knots*. In this way, we created series of statements that together form a script. At the end of each script the audience is invited to a next script, with the question: 'but do you want to feel safe again?'

A Critical Play Zone

StalkShow is performed in public spaces where urban screens communicate news items and are used for crowd control and advertising. It aims to re-activate the role of urban screens in social space and hence, audience interaction is vital. As Renee van de Vall has argued in relation to interactive art, 'what affects you is presented in the reflexive experience of your own actions ... By performing the act, you discover something about yourself, the world around you and your relation to and presence in that world'.⁴ Through interaction with the installation, notions such as control and manipulation become objects for reflection, and the participant re-personalises public space.

2. <http://www.agora-phobia-digitalis.org>

3. R. D. Laing, *Knots*, London: Penguin, 1970.

4. Renee van de Vall, 'Interactivity: Between Interpretation and Bodily Performance', Lecture at Netherlands Media Art Institute, December 15, 2006; <http://www.montevideo.nl/en/nieuws/detail.php?id=127&archieff=>

The urban screen in *StalkShow* is a critical play zone designed to rethink the dynamics of over-regulated behaviour, mental projection, and the desire to eliminate violence. *StalkShow* is inspired by Michel Foucault's texts on panopticism and power structures. Foucault described enclosing and excluding disciplinary systems such as family, school, factory and prison.⁵ However, in the contemporary panopticon of ubiquitous digital networks, notions of 'inside' and 'outside' in relations of power are shifting, as are the notions of 'insider' and 'outsider'. In our longing for safety and attempts to control the self and the potential 'other' we increasingly demand total transparency in our public spaces. However, this very fear is self-perpetuating – we are constantly expecting a potentially present, threatening, but (still) invisible 'other'. In this context, Paul Virilio writes about the speed by which 'others' appear in virtual space, as visible or invisible information, creating the paradoxical expectation of the unexpected. This potentially present stalker or terrorist can be everywhere – in physical and virtual space. Virilio describes this social experience of fear and desire we create together as 'panic, as a social event'.⁶

StalkShow attempts to intervene in this space by posing the questions: Where is the invisible 'other'? Where is the stalker? Can we use urban screens to project and meet the stalker – as social platforms for dialogue? To understand the projection of the 'invisible other' in our society, we turned to Julia Kristeva's famous essay, 'Powers of Horror'.⁷ Kristeva describes the potentially present, invisible 'other' as a mental projection that is continuously reconstructed as a phobic object by means of hallucinatory projections.

The urban screen in *StalkShow* is designed to be a home of these Kristevan hallucinatory projections. In *StalkShow*, the 'other' is absent, replaced by projections on the urban screen. Here the 'invisible others' in society – prisoners, homeless people, people living illegally in the city – inhabit the screen with their stories, haunting public space like stalkers. However, by interacting with *StalkShow*, participants can both identify and play with these stalkers. Participants in *StalkShow* play with all the roles of Kristeva's phobic system. All participants, including the projected 'other' on the urban screen, are invited to play the role of object, voyeur and stalker. Together, these roles render visible the phobic dynamic of the contemporary panopticon.

Conceptual and Technical Development

The technical development of *StalkShow* commenced in 2003, and has involved intensive screen and user testing in close collaboration with V2_Lab for Unstable Media in Rotterdam and Foundation DasArts in Amsterdam.⁸ At this time, of course, we did not have ubiquitous wireless technology and there were very few truly interactive urban screens in public space. Indeed, until 2005 we brought our own local wireless networks to each performance, and

5. Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan, Harmondsworth: Penguin, 1977.

6. Paul Virilio, *Art As Far As the Eye Can See*, trans. Julie Rose, London: Berg Press, 2007.

7. Julia Kristeva, *Powers of Horror: An Essay on Abjection*, trans. Leon S. Roudiez, New York: Columbia University Press, 1982.

8. V2_Lab for Unstable Media Rotterdam, www.v2.nl; Foundation DasArts <http://www.dasarts.nl>

projected on the walls in such a way that the projection seemed to be integrated in the architecture of the (commercially oriented) public spaces. At the same time, we 'duplicated' this projection onto the wearable, interactive billboard screen. In this way, we made the projected screen on the wall accessible and interactive for the audience.

Fortunately, cities and technology developed within the frame of *StalkShow's* conceptual development, and in 2006 in Moscow for the first time *StalkShow* used a semi-live, interactive urban screen. Festival Outvideo invited *StalkShow* to perform at Sverskaya square, a busy shopping boulevard in Moscow near the Red Square. The Outvideo organisation had made an arrangement with the commercial urban screen company for a one-minute timeslot every seven minutes, across a two-day period. The portraits, and the statements (in Cyrillic) formed a compelling juxtaposition to the repetitive advertisements in which they were embedded.

Interactivity

In order to invite active participation with *StalkShow* we created a mobile, wearable billboard with a touch screen interface. The mobile nature of the project is extremely important, in that it emphasises the ubiquitous character of the 'stalkers' in the project. The experience of fear and desire for stalkers also inspired the development of a touchscreen in the billboard. 'Touching' creates a specific physical awareness of presence, in juxtaposition to the absence of the character of the stalker. Through touching the touch screen, the participant (indirectly) touches the urban screen, and hence, 'touches' the stalker.

Our desire for a tactile and mobile interface resulted in a wearable billboard with touchscreen. The body of the host of the wearable billboard plays an important role in this touch-interface. When touching the screen the participant starts a tactile relation with the back of the stranger carrying the billboard, initiating an intimacy with the vulnerable body of a stranger. This generates alertness, attraction or repulsion. In this way, the intimacy of the body plays a compelling role in the use of the interface. When touching the screen, participants often



Fig. 2: *StalkShow* wearable billboard Seoul, Korea.

ask: 'Am I not hurting him?' This sensitivity to the well-being of the host becomes part of the interface-experience.



Fig. 3: Diagram for *StalkShow* Interactive

To make this body-touch-interface as accessible as possible, at each different site a local is asked to carry the billboard. However, touching, and touching technology, mean different things in different locales and contexts. For example, in Seoul, technology and media is ubiquitous and usually commercially related. So, while the spectacle of two Europeans carrying the billboard through the streets may have distinguished the project from the commercial mediascape, Korean participants seemed much more comfortable interacting with the touchscreen when it was carried by a local.

The interaction in *StalkShow* comes about as soon as a spectator sees someone else participating. The spectator sees the image on the screen, reads the text, sees the performance and comes closer. Some people contemplatively read all texts. Some play collectively with the billboard, watch, read, choose, exchange. Others participate superficially and leave. Some do not touch at all, but stay to talk with the host and watch endlessly to see what's happening. All these reactions together form the audience of *StalkShow*.

As a spatial scenario for the audience gazing at each other, *StalkShow* uses a triangle model. The gaze of the participant of the billboard, the projected gaze on the urban screen and the gaze of the surrounding audience intersect and haunt each other. This triangle confronts the public space as a 'triangle gaze', generating a playful and confronting, voyeuristic relation. Who is the Stalker? One could argue that the participant of the billboard is stalking a stranger. Or that the participant on the public screen is the stalker. Or that the surrounding audience is the stalker-voyeur. Or, that the carrier of the billboard is stalking the surrounding audience.

StalkShow Around the World

In 2007, *StalkShow* was developed further in Seoul due to the relatively advanced wireless technology in South Korea. In an inspiring collaboration at Art Centre NABI with Director Soh Yeong Roh and curator Dooeun Choi, we were



Fig. 4 and 5: SK building with *StalkShow* portraits, Art Centre NABI, Seoul Korea 2007.

able to activate the facade of the high-rise building of SK Telecommunication, designed by OMA architects. Its facade incorporates a series of urban screens, so it was possible to animate the skin and interior of the building with live projections.

The cultural specificity of each public space where *StalkShow* takes place determines the reception of the project and the particular codes of the audience participation and interaction. Over the years, we have presented the project in a number of different locales that have generated very different responses. In Helsinki, for example, *StalkShow* met two audiences. On the one hand, the international audience that had come for ISEA04 were concerned with the socio-technological and media-theoretical context. On the other hand, local Helsinki inhabitants reacted in very emotional ways to the installation, and conversations were often related to the social-psychological tensions around notions of alienation and desire anchored in the texts and the *StalkShow* personas.

In 2005, *StalkShow* was shown in Beijing on video in a museum context because of a prohibition on the display of critical art in public space. Consequently, most of the conversations generated by the screening concerned censorship and what it is about the content of *StalkShows*' texts that might mean that they were not permitted to be shown in public. These conversations in turn led to reflections concerning conceptions of individuality in China, on insiders and outsiders, and the ways in which social structures are changing in China due to the rapid transformation of Chinese cities. It is instructive to reflect, however, that as recently as 2003 when *StalkShow* was to be screened at Schiphol Airport in Amsterdam, negotiations faltered in the context of the events of 9-11. Management's attitude was that, '*StalkShow* deals with being unsafe. Schiphol Airport is not unsafe'. Other art works, such as Jenny Holzer's text-based projections, were also cancelled.



Fig. 6: Images from the *StalkShow* database containing audiences portraits with texts scripts.

StalkShow was received very differently in Hong Kong, where it was treated more like a kind of social game, with large numbers of people playing collectively. Closely pressed to one another, audiences followed the participant in front of the touch screen. They even added another media layer, making pictures of each other with their mobile phones, while using *StalkShow* and while appearing as a portrait on the urban screen. Hong Kong Arts Centre director-curator Conny Lam told us that in Hong Kong there is no such thing as a public space because urban space is so pervasively privatised. Subsequently, Hong Kong Island inhabitants do not experience danger in the same way as in Europe, where public space is relatively more democratised. Hence, *StalkShow* became in this context a catalyst for reflection. Added to this, Hong Kong inhabitants share a rather small space,

making people more concerned with protecting a small physical space to themselves, than exploring the space around them. Here Lam invited *StalkShow* as a social experiment for personal physical space – in relation to public exposure on the urban screen of *StalkShow*.

StalkShow's most recent presentation was at Urban Screens 08 at Federation Square in Melbourne Australia, on a screen of 65 square meters, which displays largely non-commercial cultural content. Because Federation Square occupies a central and dynamic position in Melbourne it offers the potential for artists to deepen the social meaning of urban space and explore the possibilities of the new networked socio-spatial dimensions of public space.

Edited by Meredith Martin.



Fig. 7: *StalkShow* at Urban Screens 08, at Federation Square Melbourne.

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INTERACTIVE MEDIA ARTWORKS FOR PUBLIC SPACE

THE POTENTIAL OF ART TO INFLUENCE CONSCIOUSNESS AND BEHAVIOUR IN RELATION TO PUBLIC SPACES

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Introduction

The Urban Screens project was initiated in Amsterdam in 2005 with the conference 'Discovering the Potential of Outdoor Screens for Urban Society'. One of its aims, further explored by the following two Urban Screens events held in Manchester and Melbourne in 2007 and 2008 respectively, was to explore the opportunities of employing the growing infrastructure of large digital displays in public space, currently used mainly as a tool to influence consumer behaviour through advertising, and expand them by displaying cultural and artistic content with the purpose of revitalising public space, and generating public engagement and interaction. This essay examines the potential of contemporary interactive media art projects employing urban screens in generating meaningful individual engagement and agency that informs a change in consciousness and behaviour in relation to public spaces.

While the Urban Screens project functions as an institutional endorsement of artistic interventions in public space, a substantial history of the use of billboards for artistic purposes already exists, ranging from works such as Joseph Kosuth's *Seventh Investigation* (1970), Jenny Holzer's text based installations on electronic billboards in Times Square (1982) and the numerous more politically motivated urban projections of Krystof Wodiczko since 1980, like *The Homeless Projection* (1986). These interventions, as well as many other contemporary examples from the 1990s and 2000s, can be traced back conceptually to the Situationists' critique of the modern city and their theories about revolutionary urban interventions.

In terms of contemporary frameworks and influences, augmented reality and social media are two major trends that have influenced contemporary digital media and been employed in order to push forward new understandings of public space and public behaviour. Virtual reality did not accomplish its initial promise of replacing 'reality' and rendering the body obsolete. On the contrary, the concept evolved into a kind of hybrid reality, eventually becoming incorporated into artworks which aim for an intense multi-sensorial experience, like the work of Rafael Lozano-Hemmer: *Body Movies*, *Pulse Park* and *Under Scan*. In a similar way, the Internet has not replaced the public sphere, but some of its applications have informed artistic models for reinvigorating urban centres through the application of social media, especially in the case of projects which mark up public space with text through the use of mobile technologies, such as Jason Lewis' *CitySpeak*, Stefhann Caddick's *StoryBoard*, and Johannes Gees' *HelloWorld*.

The first two sections of this essay analyse these dual trends in contemporary interactive artistic projects for urban screens, especially as responses to critiques of public space theorised as early as the first half of the twentieth century. In order to comparatively reflect upon the urban space critique that they incorporate, the type of individual engagement which they activate, and the interventions which they aim to accomplish, I have formally categorised these artworks into two distinct types, namely, installations which use the body as interface and installations which overlay public space with textual information. This essay analyses these two types of artistic strategies with the purpose of assessing their potential to influence human consciousness and behaviour in public space, especially with reference to the Situationist legacy. A critique of participatory media and a more direct comparison with the Situationist theory and their experimental interventions in urban space serves as the concluding section to this essay.

Art Installations Using the Body as Interface

Rafael Lozano-Hemmer's *Relational Architecture* series intertwines the virtual and real in what has been named 'mixed', 'hybrid' or 'augmented' reality. While most early virtual reality experiments aimed at rendering the body obsolete (with one notable exception being the works of Myron Krueger), more recent hybrid or augmented reality aims at involving the human body in a rich multi-sensory and interactive experience. According to Mark Hansen, drawing on the phenomenologist Maurice Merleau-Ponty, mixed reality emphasizes the 'constitutive or ontological role of the body in giving birth to the world'.¹ Merleau-Ponty challenges the mind-body split – particularly the subordination of the body to the mind – and conceives of the body's function as offering a 'primary access to the world' or being 'the vehicle of being in the world'.² For him, the body and the world are mutually generative: it is the perceptual functions of the body that give us access and orientation in the world and ultimately make the world intelligible. The perceptual capacities of the body enable our actions and, therefore, the ability to define ourselves in relation to the world. The importance of embodied motor activity in relation to virtual environments has been recognised as early as the 1980s by Myron Krueger's 'responsive environment ... in which a computer perceives the actions of those who enter and responds intelligently through complex visual and auditory displays'.³ Working with interactivity in the field of art, Krueger wanted to challenge the traditional relationships between the artist, the work of art and the audience. In his view, when the artist starts to operate at a metalevel and the audience becomes an active participant in a technologically enabled environment, the meaning of art emerges through the responses generated by this artistically augmented milieu.

David Rokeby expands further on these theoretical conceptions of the relationship with the self, or between the self and the world, when mediated by interactive technology incorporated in artistic contexts. He defines interactive technology as a medium permitting communication with the self by becoming a mirror of the consequences of inputted actions: 'a technology is

1. Mark Hansen, *Bodies in Code: Interfaces with Digital Media*, London: Routledge, 2006, p. 5.
2. Maurice Merleau-Ponty cited in Hansen, *Bodies in Code*, p. 5.
3. Myron Krueger, 'Responsive Environments' [1977], in Noah Wardrip-Fruin and Nick Monfort (eds.) *The New Media Reader*, Cambridge, MA: MIT Press, 2003, p. 379.

interactive to the degree that it reflects the consequences of our actions or decisions back to us'.⁴ Similarly, he emphasizes the role of the medium's response in shaping the meanings resulting from interaction with an artistic environment: 'to the degree that the technology reflects ourselves back recognizably, it provides us with a self-image, a sense of self. To the degree that the technology transforms our image in the act of reflection, it provides us with a sense of the relation between this self and the experienced world'.⁵ The second option, which describes the 'transforming mirror' model of interaction, is exploited in Lozano-Hemmer's works for public space.⁶ This model of technologically mediated interaction in artistic environments is relevant for explaining how interactive artworks in urban centres, especially works that incorporate the surrounding spatial context, may generate transformations in the way individuals perceive themselves in relation to public space and others.

The transformed reflection accomplished by Lozano-Hemmer's relational architecture opens up possibilities for the participant to explore relations with other people in a different state of consciousness and self-awareness by placing the body in a central role as an interface with technology. Simultaneously, it becomes the vehicle for the 'actualization of public space with "alien" memory', drawing attention to a memory that 'does not belong'.⁷ In the *Relational Architecture* pieces discussed here 'alien memory' consists of the projection of a collective genesis on various surfaces of public space.

The well-known *Relational Architecture* piece *Body Movies*, exhibited for the first time in Rotterdam in 2001, and having another six exhibitions around the world since then, consists of a real-time video display laid over a building facade. With the help of robotically controlled projectors, photos of individuals on the streets of various cities were projected on the building facade. Control cameras perceived the motion of the people passing by the location of the installation and translated it into moving shadows in real time, creating a direct sensorial relationship between the body and the technologically enhanced space. The portraits became visible only when shadows were projected onto them. The piece offered possibilities for both collective interaction and individual performance – individuals were able to interact with one another by sharing the specific physical location, with the projected shadows of the individuals or with the projected portraits, each of which mirrored the individual in a different way. By making use of a camera-based tracking system, the location of the shadows was monitored and when the shadows matched all the portraits in a given scene, the computer moved to a new scene displaying new portraits.

The recognisable representation of the participant on the projection screen explicitly invokes the mirror concept. The movements of the participant are projected on the screen in a visual

4. David Rokeby, *Transforming Mirrors: Subjectivity and Control in Interactive Media*, <http://homepage.mac.com/davidrokeby/mirrors.html>

5. Rokeby, *Transforming Mirrors*.

6. Rokeby, *Transforming Mirrors*.

7. Rafael Lozano Hemmer, 'Relational Architecture: Interview with Rafael Lozano Hemmer', interview by Daniele Mancini, *Unpacked.blog*, November 20, 2006, <http://www.unpacked.it/blog/?paged=2>

mode, not as precise reflection but as large transformed shadows. Rokeby sees the meaningful content of an artistic installation precisely in this transformed reflection – it is the difference between the gesture of the interactor and their distorted reflection. This effect, operated by the *Body Movies* interface, belongs to Rokeby's transforming mirror category and is the first step in Hansen's notion of disembodied embodiment, namely, disembodiment.⁸ Lozano-Hemmer defines the shadow as a 'tele-absence' interface, helping us anticipate that its role is more intricate and that disembodiment is only a precondition for the second step, embodiment. The artist explains the role of the silhouette as follows: 'the shadow was not an avatar, an agent, nor an alias of the participant's body, it was remote absence, the exclusion of the body, effected through the body-double, the cut-out, the not-transmitted, the shadow'.⁹ Released from the body and identity, the shadow opens up the potential for one to take on another identity and to become 'a site of telematic activity' by embodying a portrait.¹⁰ Therefore, the shadow does not signify only disembodiment but it also creates the potential for re-embodiment through the co-creation of a portrait.

The transformative mirror model of interaction through the unencumbered body participation makes it possible to explore relations with other people in a very sensorial and intimate way. It challenges us to think differently of ourselves in relation to the world. From this point of view, the transformation takes place in the bodily representation of the self – which corresponds to the gap created between the participant's actions and the representation of their actions – creating an opening, a space of amplified consciousness of one's body in relation to others. Potentially, this sets the conditions for increasing a participant's awareness of him/herself in association with others in public space in an engaging way, like in a community. What is important for Lozano-Hemmer is 'people meeting and sharing an experience ... coming together ... coming together in the flesh'.¹¹ The artist succeeds in accomplishing this by provoking a situation in which the individual is in a state of becoming, of opening up to others. Hansen sees the opening up created by means of the disembodiment facilitated by an informational environment as creating the possibility for a much deeper, more primary sense of community. By replacing the portraits once they have all been matched by shadows, the artist rejects the individual re-embodiment through identification with a body image. Drawing on Merleau-Ponty's phenomenology of embodiment, Hansen defines the body image as 'a predominantly visual representation of the body'.¹² The artwork aims instead for 'collective individuation' made possible through continuous play and activated by the body schema, the motor capacities of the body:

Lozano-Hemmer's project forcefully demonstrates that embodiment today can only be conceived as collective individuation, as an individuation that requires a certain disembodiment of embodied individuals. The reason for this is simple: Because human embodi-

8. Hansen, *Bodies in Code*, pp. 91-94

9. Rafael Lozano-Hemmer, 'Relational Architecture', posting to nettime mailing list, 30 January, 1998 <http://www.nettime.org/Lists-Archives/nettime-l-9801/msg00056.html>

10. Lozano-Hemmer, 'Relational Architecture'.

11. Mancini, 'Relational Architecture'.

12. Hansen, *Bodies in Code*, p. 37.

ment no longer coincides with the boundaries of the human body, a disembodiment of the body forms the condition of possibility for a collective (re)embodiment through technics.¹³

The public space in *Body Movies* is thereby recuperated from depersonalisation through the deepest form of human communion: a collective genesis, made possible by technological mediation.

This collective genesis is symbolised in another one of Lozano-Hemmer's pieces, *Pulse Park*, installed in Madison Square Park, New York City in 2008. *Pulse Park* was a matrix of light beams that covered the central oval field of Madison Square. The matrix was generated by two sets of sensors, the functioning of which was similar to gym machinery that measured the heart rate of participants and visualised it as light beams. Although the interactive element was quite limited and the reading of the pulse was the participant's only input, lacking the possibility of feedback with the output, the piece created a zone of intimacy within public space by aesthetising primary functions of the body in unison with other bodies. *Pulse Park*, therefore, brought about an almost total disembodiment of the individual, preserving only the primary life support mechanism – the heartbeat. This bodily rhythm was visualised through light beams, generating something of an urban scale biometrics. Unlike the more physically engaging *Body Movies*, *Pulse Park* generates a subtler aesthetic, symbolic and abstract visualisation of collective genesis. It invites higher degrees of contemplation because the participants' input in shaping the experience is limited to an initial reading of their pulse, and their coordination with the other visualised heartbeats further guided by the system.

Lozano-Hemmer's artworks hold the potential to stimulate consciousness in relation to public spaces and shape the way people relate to each other in these contexts with durable effects. When this symbolic collective genesis occurs in the terrain of contemporary art, the rebirth of the individual in communion with the others can be taken as a potential model, or a set of living instructions. As Nicolas Bourriaud explains, 'the role of artworks is no longer to form imaginary and utopian realities, but to actually be ways of living and models of action within the existing real'.¹⁴ This transformed visualisation enables participants to change the ways they see themselves in relation to public urban spaces and creates an artificial zone for reflecting on the individual's role in everyday contexts.

Comparable to *Body Movies*, the project *Under Scan* also draws from the *Relational Architecture* theme. Commissioned by the East Midlands Development Agency in the United Kingdom and installed in several locations between 2005 and 2008 – including Lincoln, Leicester, Northampton, Derby, Nottingham, and in Trafalgar Square, London – the installation created a ludic space for shadows and video-portraits in a public square. A tracking system predicted the potential path of the passersby and projected portraits on their trajectories. When individuals passed by, their shadow cast onto the ground revealed the video-portraits. While *Body Movies* allowed larger possibilities for interaction between the individuals whose

13. Hansen, *Bodies in Code*, p. 95.

14. Nicolas Bourriaud, *Relational Aesthetics*, trans. Simon Pleasance and Fronza Woods, Paris: Presses du réel, 2002, p. 13.

shadows were projected on the wall, *Under Scan* emphasizes interaction with the portraits, which were made to react in a limited way to human movements. As a 'telematic site', the shadow was able to reveal a short video-portrait narrative, which responded empathically only to the pedestrian's actions of appearing and walking away. When a shadow fixated over the hidden portrait spot, the portrait was unveiled in a still position, turned away from the camera. If the shadow persisted, the video-portrait moved to face the participant and established eye contact. As soon as the viewer walked away, the portrait reacted by turning away and eventually disappearing.

What in *Body Movies* was a fixed portrait gains a limited mobility in *Under Scan*. This allows the image to react to the movements of the disembodied shadow. The new element determines a change of focus, from interaction with the other shadows (which was of more interest in *Body Movies*) to interaction with the video-portraits. Accordingly, the limited meaningfulness of the video's response to the movements of the shadow frustrates the mirror metaphor, which is why individuals tend to walk away and search further for a more substantial sense of interaction. Lozano-Hemmer explains the role of this feature in the overall meaning of the artwork: 'I call *Under Scan* an anti-monument, because it's not about having one story reflected, as happens when you build a statue, but the myriad of relationships that emerge in this kind of eccentric environment'.¹⁵ In search of another portrait, the disembodied shadow exposes the individual to instability and fluctuation by creating a space through which they relate to other entities. As 'alien memory', the portraits change the function of the public square, turning it into a ludic space. The piece operates as an urban catalyst for engaging people in the same activity and creating a temporary community. As a result, the installation explicitly invites reflection about the nature of public space – in the moment when the play with portraits is interrupted by a surveillance system that supplements the public space architecture, revealing the artwork.

In terms of the potential for these installations to activate reflection, Lozano-Hemmer states:

People who are participating are in fact reflecting. People are not innocent when they activate interactive works in a public space, and this already constitutes a certain ground for reflection. People are participating in these sort of interactive operations with a lot of knowledge and awareness.¹⁶

However, the quality of reflection or the extent to which the desired reflection is triggered depends on the significance of the agency activated by the artwork. As Kristine Stiles and

15. Quoted in Richard Clayton, 'Rafael Lozano-Hemmer's Interactive Installations, Using Light and Shadows, Are Designed to Engage the Public Intimately', in *Design Week* (UK), November 2005, p. 12, http://www.lozano-hemmer.com/texts/bibliography/articles_underscan/Design-Week_031105.pdf

16. Alex Adriaansens and Joke Brouwer, 'Alien Relationships from Public Space: A Winding Dialog with Rafael Lozano-Hemmer', *TransUrbanism*, Rotterdam: V2_Publishing/NAi Publishers, 2002, pp. 138-158, <http://www.lozano-hemmer.com/texts/downloadable/InterviewAdriaansens-Brouwer.doc>

Edward Shanken define it, agency is meaningful when it 'sets empathy in motion toward responsible interaction and constructive change'.¹⁷

The level of activated empathy and, thereby, the meaningfulness of the activated agency is difficult to assess in Lozano-Hemmer's works because some of them allow for limited physical interaction and feedback, even none in the case of *Pulse Park*. The meaning of the artwork in these cases rests in the artist's conceptual decisions more than in the participant's agency.

Lozano-Hemmer explains that 'the real motivation behind relational architecture is the modification of existing behaviour', and generating unpredicted, chaotic, emergent behaviours by creating 'a situation where the building, the urban context and the participants relate in new, "alien" ways'.¹⁸ By mobilising affectivity beyond the image, through motility, the installations aim to transgress the isolation of the body through technology. Richard Sennett effectively identifies this isolated quality:

Individual bodies moving through urban space gradually became detached from the space in which they moved, and from the people the space contained. As space became devalued through motion, individuals gradually lost a sense of sharing a fate with others ... individuals create something like ghettos in their own bodily experience.¹⁹

The installations simultaneously dematerialise and open up the environment through an actualisation of alien memory, aiming to transform 'the master narratives of a specific building'.²⁰ The short video documenting the installation of one of the relational architecture artworks, *Body Movies*, describes the site of installation as such: 'monumental advertisements and corporate branding *encroach* upon this public space'.²¹ By emphasizing the hypertrophy of commercial discourse in public space, the artist underscores the stakes of inserting a different type of narrative in public space, of constructing new meanings for public edifices through the use of technological tools and public participation, which would potentially lay the grounds for changing the patterns of aggregate behaviour by grasping the relational potential of public space.

Defining the meaningfulness of a piece of art by 'the ability to change (or affirm) the way viewers see, understand, and act upon the world',²² I believe that Lozano-Hemmer's pieces create a temporary artificial zone of experimentation with a sense of engagement, con-

17. Kristine Stiles and Edward Shanken, 'Missing in Action: Agency and Meaning in Interactive Art', in Margot Lovejoy, Christiane Paul and Victoria Vesna (eds.), *Context Providers: Context and Meaning in Digital Art*, Minneapolis: University of Minnesota Press [forthcoming], p. 93.

18. Rhizome, 'Relational Architecture', <http://rhizome.org/artbase/2398/fear/relarc.html>

19. Richard Sennett, *Flesh and Stone: The Body and the City in Western Civilization*, New York: Norton, 1994, pp. 323-366.

20. Rhizome, *Relational Architecture*, <http://rhizome.org/artbase/2398/fear/relarc.html>

21. *Body Movies* video, <http://www.lozano-hemmer.com/video/bodymovies.html>

22. Kristine Stiles and Edward A. Shanken, *Missing in Action: Agency and Meaning in Interactive Art*, p. 86.

nection, agency and empathy; generating a state of *consciousness*, of awareness of the relational potential in public space, in order to overcome the routinisation and passivity which currently defines public behaviour. From this perspective, these types of artistic interventions can be considered through Bourriaud's description of contemporary artistic praxis as relational. While such artworks may seem isolated or fragmentary – not holding a modernist progressive view of reconstructing the world according to an evolutionary project – they actually attempt to create ephemeral zones of experimentation with human identity and behaviour, with the purpose of 'learning to inhabit the world in a better way'.²³ The pieces analysed here are exceptional interventions into everyday life, changing the status of the individual from a 'consumer of time and space', into an active participant in the articulation of socio-temporal modalities.²⁴ Art, therefore, becomes in Bourriaud's view an urban experiment, no longer something to be looked at, but something to be lived.

Media Artworks which Mark up the Public Space with Text

Another type of public art installation which I am concerned with in this essay aims to oppose the privatisation of public space with participatory artistic experiments. As a way of stimulating alternative models of inhabiting and acting in public urban space, this kind of work inscribes digital displays in urban centres with textual information – Jason Lewis' *CitySpeak*, first installed in the United Kingdom in 2006, Stefan Caddick's *StoryBoard*, exhibited as part of the Cardiff Festival of Creative Technology in 2005, and Johannes Gees' *HelloWorld*, which was set up during the UN summit in 2003 in four locations: on a public fountain in Geneva, on the UN headquarters in New York, on a mountainside in Rio de Janeiro and on the Air India building in Mumbai. While the first category of artworks intertwines performance and media art by experimenting with augmented reality and involving the human body in a multisensory engagement, the second category reproduces or utilises social media in public contexts. These installations permit individuals to send short textual input through the mobile phone or the Internet, usually around the length of a SMS (Short Message Service), and are similar to Web 2.0 applications such as Twitter. This is a micro-blogging service that allows textual posts of maximum 140 characters to the Twitter site. In the cases discussed here, however, the textual input is sent to a digital display in public space.

Mobile phones have brought about significant changes to the experience and constitution of public spaces and behaviour. Despite Richard Sennett's description of public behaviour in the twentieth century as depersonalised and distinct from the intimate expression permitted in private, mobile phone technology has notably contributed to a blurring of the very distinction between public and private spheres. For Patrice Flichy, it has changed individuals' relationship to these contexts by allowing users to inhabit public space by 'transport[ing] their private sphere with them'.²⁵ The regular use of mobile technology, moreover, contributes to what Georg Simmel accounts for as the desire to maintain a sense

23. Bourriaud, *Relational Aesthetics*, p. 13.

24. Bourriaud, *Relational Aesthetics*, p. 9.

25. Cited in Michael Bull, 'To Each Their Own Bubble: Mobile Spaces of Sound in the City', in Nick Couldry and Anna McCarthy (eds.) *Mediaspace: Place, Scale and Culture in a Media Age*, London: Routledge, 2004, p. 275.

of privacy in public space while on the move – in this case, by creating something like a 'mobile bubble'.²⁶ Therefore, despite the illusion of proximity and intimacy created for their users, mobile phones actually can be interpreted as contributing to the privatisation of public space through an even more accentuated feeling of alienation in urban spaces; especially since this 'public privacy' and expressions of intimacy are usually experienced by others as noise.²⁷

Integrating mobile technology into artworks is aimed toward the opposite effect, towards breaking the 'mobile bubble' by changing the recipient from an acquaintance to an open group of random individuals. Thus the chance passerby becomes a legitimate witness of sometimes personal or intimate communication. The aesthetised visualisation of private communication at city level on large electronic displays symbolically breaks the 'privacy bubble' that mobile technologies create around their users. The fact that anyone can read a message – even if it is not addressed to them – challenges the perception that one is surrounded by a private bubble when using a mobile technology that others must respect. Sennett considered that while playacting in the form of manners, social rules and rituals were a vital practice for sustaining a public culture and public relations in early modern times, these have now lost their positive connotations in social interaction in late twentieth century. The depersonalisation that accompanied a highly commodified public space transformed the perception of playacting into 'obstructions to intimate expression',²⁸ the latter being considered in terms of authentic personal interaction. In this context, by occasionally making personal and intimate communication public, these installations may have tactical effects. They go beyond playacting and ritualised social interaction and oppose the alienation experienced in public space by exposing the hypertrophy of personal or even intimate communication. *Blinkenlights Love Letters* (2001), for instance, first installed on the Haus des Lehrers in Berlin, is an interactive public art installation which allows individuals to send love messages and videos which would be displayed on an urban screen as long as the telephone connection remains active.²⁹ In other cases, these projects challenge the notion of experiencing public space as non-space when using a mobile phone. *CitySpeak* employs an immobile screen in order to create awareness of the location. By offering the opportunity to emphasize site-specific characteristics and combine text messages with real-time location-based data – such as news headlines and weather conditions – it encourages communication on topics of common interest and creates a sense of community similar perhaps to online forums and discussion sites developed around specific topics.

Of the three projects that mark up the public space with text, *CitySpeak* is the most conceptually and visually sophisticated. The project allows for a personalisation of the visual display of the message according to the input method, while the other two projects display the texts in a uniform way on different platforms, from building facades to shop windows or public fountains by means of laser lights. *CitySpeak* displays the messages in three stages. The

26. Cited in Bull, 'To Each Their Own Bubble', p. 276.

27. Bull, 'To Each Their Own Bubble', p. 278.

28. Richard Sennett, *The Fall of Public Man*, New York: Knopf, 1977, p. 37.

29. Blinkenlights Loveletters, <http://www.blinkenlights.net/blinkenlights/loveletters>

newest messages are displayed in the foreground in large fonts in order to allow the viewer to recognise their input, while in the background older messages are displayed in a continuous movement from right to left and upward. The transition from a foreground to a background message takes place through the filter of a 'pixel eater' situated in the lower-right corner of the screen. The text is dragged into this filter like a whirlpool, where it gets disintegrated into the constituent pixels in a chaotic mass, after which it becomes re-composed and re-displayed in the background in small letters. The pixel eater visualizes the ephemerality of each publicly displayed message as desirable, as opposed to the domination of urban centres exclusively by advertising discourses. If we consider Claude Lefort's definition of public space as guaranteeing democracy when it belongs to no one, *Cityspeak* puts forth precisely this understanding by opposing the privatisation of public context with a communication tool open to general participation.³⁰

While such projects are not the first initiatives to mark up the public space with text, they differ from earlier textual artistic markings of public space through collective modes of expression and interactivity. Although the creators of *Cityspeak* describe the artwork as digital graffiti, the installation is distinguished from graffiti for not necessarily having any subversive or tactical effects. Rather, it competes with traditional uses of public displays by proposing an alternative which is open and participatory. It also differs from previous artistic initiatives such as Jenny Holzer's conceptual artistic projects from the 1980s since her works aimed to change people's beliefs and attitudes through a conceptual mode of address identified with an artistic authorial voice. These interactive installations are unique in that they allow individuals to have shared input in a collaborative elaboration of meaning for the artwork and the collective shaping of public space.

Reappropriating Urban Space through Participatory Media Art?

By repurposing a technology used for private communication into a 'private-to-public' communication tool, by sending text messages to an urban digital screen, the artworks that overlay public space with text make more overtly political statements as well.³¹ Motivated by a quasi-Situationist critique of urban space, they aim to reconfigure public contexts by offering its inhabitants a tool to re-appropriate it. The authors of *Cityspeak* aim to provide 'personal communication devices to be used as public broadcasting tools, with the potential for subverting the narrow use of large-scale urban screens as monotonous bullhorns of commercial desire'.³² Johannes Gees, the author of *HelloWorld*, contextualizes his work in a similar way: 'we speak about public space and that it belongs to everybody, but the use of public space is actually set into regimentation ... You can buy the space for advertising, but that takes money.

30. Cited in Wendy Chun, *Control and Freedom: Power and Paranoia in the age of Fiber Optics*, Cambridge, MA: MIT Press, 2006, p. 71.

31. Maroussia Lévesque, Lucie Bélanger and Jason Lewis, 'P2P: Cityspeak's Reconfiguration of Public Media Space', *Wi: Journal of the Mobile Digital Commons Network* 1.1 (Fall 2006), <http://wi.hexagram.ca/?p=5>

32. Lévesque, Bélanger and Lewis, 'P2P'.

Or you can do graffiti, but that's illegal'.³³ The artworks, therefore, are framed as legitimate alternatives to the privatisation of public space that aim to collectively re-appropriate it through a cascade of personal and intimate expressions in public.

But rather than dismissing the 'spectacle' of commodities and their reification of social relationships, they can also be seen as supplementing a culture of 'spectacle' and entertainment with more participatory models of generating spectacular 'representations'. If we are to consider Guy Debord's critique of the society of the spectacle, or Jean Baudrillard's critique of the media, in a public space which is already overexposed to media and information, what difference is brought about by an installation that uses the same means and platforms as the discourses that it attempts to dispute? Debord would certainly judge them as supplementing a culture of 'spectacle' and entertainment, which is also how the press sometimes perceives them. *Wallpaper** magazine, for instance, describes *Pulse Park* and the entire series of Lozano-Hemmer's relational architecture works as 'dazzlingly inventive public spectacles'.³⁴ The title of *Leicester Mercury's* article announcing the installation *Under Scan* highlights the spectatorship element of the installation: 'light show: pavement portraits will bring street to life'.³⁵ However, re-appropriating the platforms used as a medium for broadcasting corporate messages and turning them into a medium which enables expression for the multiple voices of the city inhabitants might also be considered through Hans Magnus Enzensberger's theory of the media.³⁶ As early as 1970, he envisioned an emancipatory distributed model of the media. In his many-to-many model of communication, it is not sufficient for average individuals to own the means of media production, but these must be used to support alternative network-like modes of organisation of social movements, as well as the creation of different habits of media consumption.

Nevertheless, Baudrillard goes even further in questioning Enzensberger's distributed model of the media, arguing that the reversibility of the positions of producer and consumer do not guarantee reciprocity of exchange. Turning everyone into a producer will not lead to emancipation or empowerment, because the issue at fault is not who transmits information but the 'transmitter-message-receiver' model of communication itself which excludes what Baudrillard nostalgically values as 'genuine' exchange and interaction.³⁷ The sudden transformation of everyone into a producer with the advent of social media throws into question the meaningfulness of such interventions in relation to progressive political change – an is-

33. Johannes Gees, quoted in Kari Lynn Dean, 'Go Tell It on the Mountain', *Wired*, December 2003, http://www.johannesgees.com/wp/wp-content/wired_helloworld.pdf

34. 'Pulse Park', *Wallpaper**, November 4, 2008, <http://www.wallpaper.com/art/video-rafael-lozano-hemmer-ny/2768>

35. Liz Crowson and Tom Pegden, 'Light Show: Pavement Portraits will bring street to life: Moving Pictures, Leicester Mercury', January 7, 2006, http://www.lozano-hemmer.com/texts/bibliography/articles_underscan/LeicesterMercury_070106.pdf

36. Hans Magnus Enzensberger, 'Constituents of a Theory of the Media' [1970], in Noah Wardrip-Fruin and Nick Montfort (eds.) *The New Media Reader*, Cambridge, MA: MIT Press, 2003, pp. 259-275.

37. Jean Baudrillard, *Requiem for the Media* [1972], in Noah Wardrip-Fruin and Nick Montfort (eds.) *The New Media Reader*, Cambridge, MA: MIT Press, 2003, pp. 277-288.

sue discussed, for instance, in the *Video Vortex* collected responses to YouTube.³⁸ Another critical question that can be raised in terms of both social media and the art installations which follow this model is: 'when everyone is speaking, is anyone still listening?'.³⁹ Likewise, being reminiscent of the limits of one particular type of social media, namely blogging, a similar set of conditions might be noted: 'the awful truth about blogging is that there are far more people who write blogs than [who] actually read blogs'.⁴⁰

Artistic Precedents and Critique of the Modern Urban Space

Although they engage the individual in different ways with alternate intended effects, the two categories of artworks respond to a similar set of problems. They both create participatory artistic experiments with behaviour directed to generating reflection on the nature of public space in an everyday context. By creating zones of expanded consciousness and an awareness of the relational potential of public environments, they aim to overcome the alienation, routinisation, nonintervention and passivity that currently define public behaviour. They aim to stimulate modes of living, of inhabiting public space and ultimately to generate communities and new types of behaviour.

In aiming for these effects, they challenge a state of the public space and public behaviour originating in modernity. The sociologist Georg Simmel, analysing the culture of mundane interaction in modern cities, described the relation between individuals who share urban space as one of civil indifference. The 'blasé attitude' became typical for the inhabitants of the modern city – their relations were reserved and they remained strangers to one another.⁴¹ Sennett described the individual behaviour in the modern city in a similar way whilst looking for its causation in the new conditions imposed by commodity capitalism: 'silence in public became the only way one could experience public life ... There grew up the notion that strangers had no right to speak to each other, that each man possessed as a public right an invisible shield, a right to be left alone'.⁴² Thus, public behaviour was reduced to passivity, nonintervention and observation which replaced the previous ritualised modes of interaction in urban space.

This pattern of public behaviour was triggered by structural changes in urban environments, by the decline of public culture in favor of a private sphere sustained by media such as television and radio in the late twentieth century, especially after the World War II. According to Scott McQuire, the media partly fulfilled this role by making those events that were previously experienced only in public space available for consumption in one's

38. Geert Lovink and Sabine Niederer (eds.) *Video Vortex Reader: Responses to YouTube*, Amsterdam: Institute of Network Cultures, 2008.

39. Scott McQuire, *The Media City: Media, Architecture and Urban Space*, London: Sage, 2008, p. 205.

40. Geert Lovink, *The Pride and Glory of Web 2.0, Introduction*, UvA Master of Media email list.

41. Georg Simmel, 'The Metropolis and Mental Life' [1903], in Kurt Wolff (ed.) *The Sociology of Georg Simmel*, New York: Free Press, 1950, pp. 409-424.

42. Richard Sennett, *The Fall of Public Man*, p. 27.

home.⁴³ Furthermore, as the television screen increased its proportions and moved into the public space, it supplied a medium for what the Situationists have criticised as 'the spectacle'.⁴⁴ As Paul Virilio notes, traditional public space has been replaced by these representations through screens: 'this public image has today replaced the former public spaces in which social communication took place. Avenues and public venues from now on are eclipsed by the screen, by electronic displays, in preview of the 'vision machines' just around the corner'.⁴⁵ In his influential book *The Society of the Spectacle*, Guy Debord theorised the same modern society in which the media plays a growing role from a more political and activist standpoint. He came up with the term 'society of the spectacle' to describe the rise of a media dominated consumer society driven by commercial culture, advertising and entertainment: 'the spectacle is the moment when the commodity has attained the *total occupation* of social life'.⁴⁶ In this society, the everyday life of the individual revolves around the consumption of commodities, images and events. Functioning as a 'permanent opium war', the spectacle dulls the individual and his/her consciousness, turns them into a passive subject and distracts them from creatively and independently producing their own life.⁴⁷ The alienation of the individual is attributed to the capitalist society's technique of separating workers from the outcomes of their work, of art from life, and of consumption from human needs, which are now dictated by advertising and other commercial practices.

In relation to urban spaces, the Situationist International criticised the conditions that Western capitalism imposed on the modern city. The rationalism and functionalism characterising modern architecture and design structured urban space in order to downplay spontaneous, imaginative and playful practices. Therefore, the Situationists set their mission to overcome the increasing control of urban space through modern architecture and design, as well as all other forms of separation that represent a barrier to authentic life. They aimed to release the individual from the conformity of a spectatorship defined by consumption, passivity and alienation through reinvigorating daily life through a revival of individual consciousness and behaviour in imaginative and playful practices, which functioned as gateways to a new understanding of urban space and everyday life.

Since Debord's theorisation of the society of the spectacle, the culture of the spectacle and especially the entertainment industry has expanded in every area of life, as the critical theorist Douglas Kellner states.⁴⁸ This tendency is visible in the domination of the urban space by screens and billboards hosting commercial content, and occasionally live sport or musical events. The spectacle, in what Gilles Deleuze dubbed as control society, has been supplemented by surveillance technology in public urban spaces, thus displacing issues of trust in these technologies in an urban environment where individuals are strangers to one another.⁴⁹

43. McQuire, *The Media City*, p. 131.

44. Guy Debord, *The Society of the Spectacle*, trans. Black & Red, 1983.

45. Paul Virilio, *The Vision Machine*, Bloomington: Indiana University Press, 1995, p. 64.

46. Guy Debord, *The Society of the Spectacle*, section 42.

47. Debord, *The Society of the Spectacle*, section 44.

48. Douglas Kellner, *Media Spectacle*, London: Routledge, 2003, p. 3.

49. Gilles Deleuze, 'Postscript on the Societies of Control', *October* 59 (Winter 1992): 3-7.

Being aware of surveillance has consequences on one's public behaviour, making it potentially even more passive, uniform and predictable. The artist Lozano-Hemmer recognizes that this tendency is one of the reasons that individuals are reticent to participate in public art installations: 'people are skeptical about the neutrality of public space. No one wants to go along with a culture of surveillance'.⁵⁰ Constant surveillance allowing for identification at any time cancels any sense of anonymity in associating with a mass of individuals, thus tempering the unexpected energies that crowding with others may release.

Situationism Rediscovered or Situationism Subverted?

Significantly, the interactive media art installations of the 1990s and 2000s that are of interest to the Urban Screens project reappropriate parts of the Situationist theory. Conceptually similar to *détournement*, *constructed situations*, *psychogeography* and *dérive* – Situationist practices which were aimed at placing artistic energy in daily urban settings to revolutionise the life of the city inhabitant by emancipation of the individual consciousness from the alienating conditions of the spectacle – the interactive media art installations too aim to reinvigorate public space through creative and playful technologically mediated interactions in which individuals can actively participate.⁵¹ They support the Situationist critique of modern urban space, however, with less politicised and more aestheticised artistic techniques. In order to oppose the privatisation, rationalisation, and functionalism of public space design that results in a loss of the unpredictable, spontaneous and creative side of urban life, they aim to inject temporary artistic zones of creative human interaction into public space by means of large digital displays and digital media, occasionally making use of surveillance technology, mobile technology and the Internet.

While conceptually influenced by these early Situationist artistic practices introduced between 1954 and 1956, only about one decade later, in *The Society of the Spectacle* and other writings, Debord would disown art as being separated from everyday life and incapable of producing significant social change. In his perspective, art has been exceeded by a revolution in everyday life. The contemporary artistic practices discussed here too appear to shift in that direction, placing themselves away from traditional frameworks of art as representational – forms that separate the artist from the audience and production from consumption – and shift more towards art as theorised by Bourriaud, as urban experiment which stimulates new types of behaviour. Although responding to social issues by means of collective urban experiments, contemporary works for urban screens do not hold the political density and expansiveness of the Situationist agenda and the potential to empower individuals that they originally envisioned with the idealism specific to modernity. The Situationists conceived the constructed situation, in its maximum stage of maturity, as 'lived by its constructors'.⁵² The implication of the Situationist avant-garde as director or producer of the situations was tied to a 'pre-Situationist' stage, an incipient stage, which aimed to be minimised and eliminated

when the experiments matured and the situation would shift from the form of artistic performance to that of a revolution. The collective production by its participants, or 'livers' to use Debord's notion, was the measure of success of constructed situations, although in practice this was never achieved.

The art installations discussed here do not aim to achieve empowerment in this sense because the participant is not meant to be the producer of the artistic 'tool'. The technological tool is exclusively the creation of the artist and his or her team who guides the interactive possibilities and meaningfulness of the artwork. However, technological mediated interaction in artistic environments affords other empowering opportunities and achievements. The use of digital media, large digital displays, surveillance technology, and in some cases, mobile technology and the Internet to mediate or disseminate human interaction may be seen as producing an aesthetisation of human relations and thus mask and weaken the meaningfulness of their direct experience by their spectacular representation and by overwhelming the senses. However, technologically mediated interaction in an augmented environment which transforms the individual image in the act of reflection, as in the case of Lozano-Hemmer's installations, affords – in the potential created by the participant's actions and their distorted representation – opportunities for amplified consciousness of the self in relation to other beings in an intense sensorial, engaging way which goes beyond community and allows a more primary, more deep sense of human communion, a collective genesis afforded through technological mediation.

50. Lozano-Hemmer, 'Relational Architecture'.

51. Simon Sadler, *The Situationist City*, Cambridge, MA: MIT Press, 1998, p. 11.

52. Guy Debord, 'Report on the Construction of Situations and on the International Situationist Tendency's Conditions of Organization and Action' [1957], in Kristine Stiles and Peter Selz (eds.) *Theories and Documents of Contemporary Art*, University of California Press, 1996, p. 706.

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ELECTRIC SIGNS

AN INTERVIEW WITH JASON EPPINK, THE PIXELATOR

JASON EPPINK AND ALICE ARNOLD



Fig. 1: Cheiba in front of the Pixelator, by Jason Eppink. (See text box on p. 219)

Alice Arnold is a filmmaker who is currently producing *Electric Signs*, a feature documentary about screens and signs. The film explores, in several cities around the globe, how new electronic sign systems are changing the nature and quality of public space, and how these new forms of screen-based media are changing people's perceptual experiences and impacting upon visual culture. Research and filming began in February 2007 in Hong Kong, with the support of a Fulbright Fellowship (Filmmaking/2007), and has continued in New York. One of the people featured in the film is media artist Jason Eppink, aka the Pixelator.

Alice Arnold (AA): The Pixelator transforms commercial media, which someone paid a lot of money to produce and distribute, into a public art project. Can you describe what the Pixelator is?

Jason Eppink (JE): The Pixelator is an unauthorised collaboration with the MTA (New York City transit authority), Clear Channel Communications, and the advertisers that pay to be on the screens. What I do is construct these light boxes, basically, out of foamcore and diffusion gel, and put them in front of video billboard ads in front of subway entrances. And what they do is diffuse the video content that Clear Channel and the sponsors provide, and

translate them into forty-five blinking, colour changing squares. So what happens is, I am creating an artwork with the help of these multi-national corporations – and they don't even know about it.¹

AA: The Pixelator is placed on the MTA subway screens, which are accessible to people, unlike the video billboards that are on or incorporated into building facades. But I'm curious as to what led you to create the Pixelator. How did you get the idea to subvert the subway advertising screens? And why in this form?

JE: I saw Steve Lambert's work, the Anti-Advertising Agency *Light Criticism* piece, and I remember seeing Ji Lee's *Abstractor* piece before that, and really getting stoked about the idea of re-appropriating all this light pollution. So I just built on their ideas. Their idea was, you know, Ji Lee's *Abstractor* turned it into one line of light and Steve Lambert's *Light Criticism* used it as a reverse stencil.² So I just wanted to take this one step further and the idea was to take the light information and to diffuse it down, from millions of pixels into forty-five. Into something that isn't information specific, isn't assaulting, but sort of pleasant; it's diffused, it's not trying to get you to buy something. So that is the story of where that came from.

AA: Why do you put them up? What is the goal of the project and who is your audience?

JE: I've always been really interested in the accidental audience. And exposing people who don't expect it to something creative and benevolent. I think part of it is the prankster attitude, sort of a subversiveness. But it is also having a larger audience. There is so much money that you have to have, or power, to grab eyeballs. And when you are doing something unauthorised in a street setting, especially in the densest street space in the US, you have a lot of eyeballs. It is really powerful. So I was definitely thinking about how these are displayed in public spaces. But I also knew that a bigger part of my audience was going to come from online. I knew the likelihood of the Pixelator lasting more than a couple of days on the street and more than a thousand people seeing it was pretty slim. So I put up a quick video, and the next morning it was on Wooster Collective and then from there it went to the front page of del.icio.us.³ It got picked up in several camps. There is the 8-bit crowd, who are interested in 80s video game nostalgia; there was the DIY crowd, they really liked the 'How To' that I put up; and then there was the anti-advertising/culture jamming group. It was pretty much textbook how to be famous on the Internet for a day. And it worked out really nicely.

AA: What sort of reactions do you get from the public?

JE: When we were first putting the Pixelator up and documenting it, more people noticed the video camera before they noticed the Pixelator. People would walk by and watch us and then look at what the camera was pointing at. On some level I envy the people who don't see it, and who sort of have this tunnel vision and are able to shut everything out. I think it is almost a necessity in a city like this. There is so much visual garbage trying to grab your attention. But on the other side, you're missing out on all the subversions, you're missing out on the other ways that people are customising the city. You're missing out on little touches of

1. See video clip, *Pixelator*, <http://jasonneppink.com/pixelator/>

2. See *Abstractor* video clip, http://abstractor.tv/03.Videos/Video_Billboard.htm

3. The Wooster Collective, <http://www.woostercollective.com>

humanity. And there's so much to see. There is a critical mass in a city like New York where you can put something up on a street corner and thousands and thousands of people pass by it in a day, and a few of those recognise it and see it.

AA: Large outdoor screens command prominent positions in the city and are, therefore, seen by large numbers of people every day. As a media artist, how do you respond to the ubiquitousness of commercial media in the public sphere?

JE: The screens are ubiquitous. There are eighty of them in New York City, and they're in the perfect funnel of people. People from all over the city are entering. There are maybe three hundred stations in New York City and a sixth of them have these bright, intrusive signs that are flashing right at you. From an advertising perspective it is a perfect place to put your message, and from a culture jammers perspective it is the perfect place to jam something.

AA: Electronic surfaces are becoming the devices through which we frame our experiences. As a public space artist involved with media arts, I am interested in your thoughts on the ways that screen culture is bringing about new perceptual experiences, especially in the way we conceive of space, time and speed.

JE: One of the things about the screens are that they are more intrusive because they intrude on our peripheral vision. I think they invoke something much deeper than logic, because, when something is moving in your peripheral vision, it's dangerous, instinctually. With a static sign, it's not moving, it's not something you have to pay attention to. But with the moving screens, it is instinctual that you are going to have to look, or you have to train yourself out of that. A lot of city dwellers do now. But I think that is really an argument against how bad they are. It is triggering something instinctual and I don't know if people really address what that does to how people perceive a space, and makes a space more threatening instinctually.

AA: What sort of impact do you think screen culture (large outdoor screens as well as personal use screens such as mobile phones and iPods) has on visual culture, on media culture and on urban culture?

JE: One of my professors at USC (University of Southern California), Anne Friedberg, wrote this great book.⁴ In it she talks about how we are prepared for the screen. She talks

Person #1 (Cheiba):

I was walking by and it caught my eye because there were colours that were moving, and then I took a second look because I noticed it wasn't an annoying ad. I love the idea of taking over something that's supposed to be commercial and turning it into a personal expression.

Person #2 (German man):

I stopped at once. I forgot the subway. I saw a strange bathroom and I liked the colours and I just felt it is art. I never can explain if something is art, it's an energy of my heart, so I had to stop. I forget the region here, I forget the town, I only see this, and I think that's important. Yes.

4. Anne Friedberg, *The Virtual Window: From Alberti to Microsoft*, Cambridge, MA: MIT Press, 2006.

about the fracturing of space and how train rides throughout the country made space and location separate and how window-shopping set up the space. What I've been thinking about in this vein is how multi-purpose screens have really changed things. The film theater screen, first of all, has one purpose, it displays one or two films. And then the TV comes along and you can channel surf. You can switch between channels, so you have these different spaces. And then the computer, with windows. You are in a dictionary in one window and you click just a few pixels over and then suddenly you are in Google Maps, looking at a representation of space. And then you're on YouTube watching a video. It is a further fractioning of space and time. And then with the smaller screens, with cellphones and iPods, you can travel. You can do this sort of action, you can move up and down with the screen, not just looking straight. I think it opens up a way to think about space differently. Which is very exciting creatively, to think of space beyond three dimensions. But I think it is a double-edged sword. What's happened with the Internet is a good example. People thought that anonymous speech would be really important and interesting, and then it was like, no, I want to be myself and interact with people and that's why Facebook is so huge, because people are using their real name, interacting with people they know; it's a new space for that. And I think that's analogous to how screens get used. How we'll find uses for these screens.

AA: One of the things I am exploring in *Electric Signs* is how art can be used as a tactic or action of change within the commercial media sphere. The work you are doing is interesting because you are using art and media to subvert mass media's pro-consumer message. How do you think change (changes in social, economic and political structures) happen?

JE: Pixelator is a 'what-if'. What if we could use these beautiful machines, which could really do some powerful things, what if we could use them for something not as assaulting, not as insulting, not as aggressive. Something that people want to look at, instead of something that people want to avoid and that people want to ignore. So you just have to start changing attitudes. And that is nothing you can measure, that's not quantitative by any means. But you have to get in somewhere where people aren't expecting you. You have to catch people off guard. And you are not going to change most people's mind; people are going to react against what you do. But they did see you do something that they haven't thought of before. And that will change how they will think about things later. Oh, this is possible, and why did they do it? I think that kind of change is really slow. I see that it is something you need to be very patient about.

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CITY VIEWS FROM THE ARTIST'S PERSPECTIVE THE IMPACT OF TECHNOLOGY ON THE EXPERIENCE OF THE CITY

ANNET DEKKER

In only a few years, urban dwellers have grown accustomed to the moving images that surround them on large urban screens attached to or integrated into the architecture of the city. In public squares, shopping precincts and other places where people gather, the moving image has penetrated everyday life. The ubiquity of mobile technologies has now created another layer of experience, and these different spaces – virtual and physical – are overlapping and mutating all the time. Media theorists have coined a range of terms to describe these new environments and their affect on the relationship between people and place: 'augmented reality',¹ 'responsive architecture',² 'ambient experience design'.³ The way in which these media – from electronic sensors, urban screens and Closed Circuit Television systems (CCTV), to Global Positioning Systems (GPS) and Radio Frequency Identification Device (RFID) tags – are experienced has significantly impacted upon the way people communicate, as well as their experience and use of spatial dimensions. Throughout history, artists have tried to reconsider, remap and re-appropriate the boundaries of the city. This essay examines recent artistic practices that use these new technologies either as platforms or tools to reconsider or re-appropriate public space.

Placing the Television Outside

There have been numerous accounts of the role and influence of television in people's lives, ranging across methodologies from spectatorship theory to textual and visual analysis. However, these critical dialogues seem to have little impact on the way in which television is consumed. In the early 1990s, Doug Hall and Jo Fifer suggested that the only way to generate a critical dialogue is to place the television set outside of its traditional domestic existence.⁴ They point to work by artists who have used video to examine people's affective relationships to built and mediated spaces. The continued relevance of this approach can be seen in the work of Dan Graham.

Graham was interested in the semiotic function of video in urban space as an architectural and cultural sign. For Graham, even though different architectural signs have their own

1. Lev Manovich, 'The Poetics of Urban Media Surfaces', *First Monday* 4 (2006), <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1545/1460>
2. Lucy Bullivant, *Responsive Environments: Architecture, Art and Design*, London: V&A Contemporary, 2006.
3. Rob Van Kranenburg, *The Internet of Things: A Critique of Ambient Technology and the All-Seeing Network of RFID*, Amsterdam: Institute of Network Cultures, 2008.
4. Doug Hall and Sally Jo Fifer (eds.) *Illuminating Video: An Essential Guide to Video Art*, New York: Aperture in association with the Bay Area Video Coalition, 1990, p. 17.

specific meaning, it is only in relation to each other that meaning was constituted. His site-specific works in public space were an attempt 'to return to the viewer a sense of psychological and perceptual control, even as one experiences the conflicting messages of built and mediated space'.⁵ Graham wanted to establish a relation between urban planning, the town, and art – a relation in which the artist's role was to deconstruct the spectacle: 'Architecture defines certain cultural and psychological boundaries, video may intercede to replace or re-arrange some of these boundaries'.⁶ In 1970s America, in the context of postwar suburban development, Graham was largely concerned with the influence of suburban planning and the newly introduced cable television on the social environment. Through reflection – either literally, by placing mirrors in homes (*Alteration to a Suburban House*, 1978/1992), or by putting large video screens outside the home (*Video Projection Outside Home*, 1978) that showed everything that was watched on the television – Graham reflected the radical changes in the social landscape. By focusing on the spectators' perception of themselves, through a reconsideration of space, Graham tried to make people aware of public space and their role in it.

Some commentators argue that urban screens offer the potential to function in a similar way. For instance, Mirjam Struppek, creative director of the multimedia programme of Urban Screens 2008, states that 'urban screens can be understood in the context of a re-invention of the public sphere and the urban character of cities, based on a well-balanced mix of functions and the idea of the inhabitant as active citizen instead of properly behaving consumer'.⁷ In her article 'Mobilising Urban Screens', Nanna Verhoeff takes this a step further by arguing that 'screens on site not only transform urban space, but ... they are involved in screening practices that are all about transformation and mobility of and within urban space'.⁸ Indeed, instead of focusing on the individual or a family, large screens are oriented towards a large number of people, and hence, could potentially lead to collective forms of engagement. However, as Walter Benjamin's conception of flânerie reminds us, pace is all important, because it determines the scale of one's observations, and thereby what becomes visible. His 'reception in distraction' could only be achieved when slowly traversing the city. Today, with heightened mobility, this seems almost impossible. People's lives and travel have not only become much faster, they are also augmented by a range of mobile devices that transport individuals to other spaces while walking through the city. The speed and transience of urban screen 'audiences', along with the physical distance between body and screen, can render connection and intimacy difficult.

5. Hall and Fifer, *Illuminating Video*, p. 19.

6. Dan Graham, *Video-Architecture-Television: Writings on Video and Video Works 1970-1978*, New York: The Press of the Nova Scotia College of Art & Design / New York University Press, 1979, p. 64.

7. Mirjam Struppek, 'Urban Screens: the Urbane Potential of Public Screens for Interaction', in Cathy Brickwood and Annet Dekker (eds.) *Navigating e-culture*, Amsterdam: Virtueel Platform, 2009, p. 19.

8. Nanna Verhoeff, 'Screens of Site: Mobilising Urban Screenspace', *Simulacrum: Tijdschrift voor kunst en cultuur*, 16.3/4 (2008): 72.

As is the case with many 'new' media, urban screens tend to employ the visual techniques of earlier moving image platforms like television, film, and outdoor advertising.⁹ However, there are initiatives that attempt to transform urban screens by moving away from their spectacular function in the direction of what is closer to 'video news'. An example of this is Visual Foreign Correspondents (VFC, 2007-2009),¹⁰ an initiative that invites artists from around the world to give their personal visual commentary on events and situations from their locally situated perspective. Their aim is to give people in the street a brief window into other regions, peoples and imaginaries. From the perspective of VFC, urban screens can be viewed as windows or mirrors on the world and society at large. As Struppek has observed, 'urban screens focus on the public urban audience, on joint and widespread reception of media content ... Levels of locality and globality vary, ranging from the local neighbourhood screens with symbols and signs on a city level to trans-urban networks of screens enabling new "glocal" interconnectivity'.¹¹

Relational Space

Struppek's argument that urban screens might activate citizenship is taken a step further in Andreas Broeckmann's observation that such a 'public sphere will only come into being if there are complex forms of interaction, of participation and learning, that use the technical possibilities of the networks and that allow for new and creative forms of becoming visible, becoming present, becoming active, in short, of becoming public'.¹² Broeckmann doesn't make this statement in favour of urban screens – he made this statement in the context of Rafael Lozano-Hemmer's work *Vectorial Elevation #4*, an interactive site-specific multi-media installation.

Since 1994, Lozano-Hemmer has been using the term 'relational architecture' to describe his work and point to the relation between the visitor/performer and the architecture that it engenders.¹³ In his large installations, he seeks to intervene in the structural relationship between architecture and human conduct by providing buildings and open spaces with different contexts with the aid of audio-visual tools. In projects such as *Body Movies* (2001) and *Underscan* (2006), Lozano-Hemmer challenges the passive use of large video screens in public space. His first priority in these projects is the creation of social relations. For *Body Movies*, he projected thousands of photographs of pedestrians onto the

9. This relates to the notion of remediation as introduced by Bolter and Grusin: 'All current media function as remediators and that remediation offers us a means of interpreting the work of earlier media as well. Our culture conceives of each medium or constellation of media as it responds to, redeploys, competes with, and reforms other media'. Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media*, Cambridge, MA: MIT Press, 1999, p. 55.

10. Visual Foreign Correspondents, <http://www.visualcorrespondents.com>

11. Struppek, 'Urban Screens', p. 20.

12. Andreas Broeckmann, 'Public Spheres and Network Interfaces', in Rafael Lozano-Hemmer (ed.) *Vectorial Elevation: Relational Architecture No. 4*, Mexico City: Conaculta and Impresiones y Ediciones San Jorge, 2000, p. 167.

13. Rafael Lozano-Hemmer (ed.) *Vectorial Elevation: Relational Architecture No.4*, Mexico City: Conaculta and Impresiones y Ediciones San Jorge, 2000; Rafael Lozano-Hemmer, <http://www.lozano-hemmer.com>

facades of large buildings (among them the Pathé cinema in Rotterdam), but the portraits only become visible when someone who is walking past throws a shadow over the image. Then the buildings and facades are transformed into playful projection surfaces on which passers-by open themselves up for others. The shadow of a body becomes the medium of conveyance. According to Lozano-Hemmer, the shadow functions as a disembodied extension of the corporeal person, connected to the body but not of it. In *Underscan*, the relation between the projected image, which is now projected on the pavement, and the person walking over it, is more intense. Here too the shadow of the passer-by triggers the visibility of the image, but in this case the visitors are scanned and their routes are predicted by the computer. The projections then respond to the shadows by watching the passer-by, turning away, or mimicking him or her. The shadow becomes the host for the other unknown body. After seven minutes, the whole field changes into a grid on which the surveillance cameras are to be seen and the positions of the visitors can be followed. This project demonstrates that it is possible for social activities to give meaning to space, and that space is active in this process and not merely a receptacle for activities. The project detects and follows the visitors, but at the same time reveals its own technical apparatus. This stimulates reflection on these systems on the part of the users, and creates the potential for transcending the specific content of the work. Lozano-Hemmer invites the visitor to think about alternative bodies, architecture, and the urban experience, and then to reconstruct them.

Looking at these works, it makes more sense to speak about a space of relation than of architectonic space. Scott McQuire describes relational space as that 'which has been stripped of inherent qualities, such as stable dimensions and appearances (and of course stable social meanings), but is increasingly experienced as shifting, variable and contingent. Relational space can only be defined by the temporary position occupied by each subject in relation to numerous others, which suggests that relational space is not easily unified since every subject belongs to multiple matrices or networks that overlap and interpenetrate'.¹⁴ According to McQuire, this is due to the introduction of media technology in public space, a space he therefore refers to as 'media-space'. Moreover, as McQuire stresses, this influences how people might share space to constitute collective experience. In this context, projects like Lozano-Hemmer's are much more powerful than the screening of (site-specific) videos on large urban screens. Although urban screens have certainly changed the experience of the city by creating a new visual layer of information, this doesn't mean that they necessarily alter people's behaviour. Unless driven towards interactivity or screenings organised around a special event, there is little evidence that suggests that these platforms have an impact on the sociability of city life by encouraging engagement or affect and creating relationships between people. However, a media-space consists of more than just large urban screens. It makes sense to widen the definition of urban screens to include a range of screens: large, mobile and small.

14. Scott McQuire, 'The Politics of Public Space in the Media City', *First Monday*, Special Issue 4 (2006); <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1544/1459>

The Hype of the Situationists

Advanced mobile phones with integrated MP3 players allow people to move through cities with headphones on, thereby distancing themselves from what is going on around them. This phenomenon is reminiscent of the 1980s, when Walkmans became hugely popular. The difference is that the Walkman did not connect to other devices: listening to music remained a solitary experience. This changed with the arrival of modern mobile communication devices; while being in contact with distant others, people are distancing themselves from the people around them. These long-distance conversations that are made with portable phones reinforce the privatisation of public space. By conducting private conversations, and ignoring other people around them, mobile phone users are implicated in the demise of public space. These new forms of communication create new forms of privacy within public domains, and at the same time, they create new ways of understanding sociability in urban spaces.

Another tool that changes people's connection to the space around them is GPS. For a long time, the experience of the city has been influenced by various media, information and communication technologies. However, as well as walking through a mediated world, people are now also actively interacting with the space not through tangible cues, but through a range of technologies. With the arrival and popularity of location-based technologies, a shift occurred from material cues to the immaterial virtual signs by which people navigate the streets. A new hybrid space is formed in which they are constantly moving between the virtual and the actual.

Many contemporary artists working with locative media use the underlying structure and function of the techniques without questioning them. By creating geospatial narratives, games, or walks – combining performative strategies with new media technologies – these locative media projects evoke (forgotten) histories and memories rather than enforce actions. While remaining in their own established social networks, they at best make social-spatial relations visible. Popular formulations, stemming from marketing strategies, are often used to lower the threshold for new technologies and attract new audiences. In many cases, the projects do not encourage a reflexive relationship to the tools or the content that is provided – they are foremost concerned with creating a pleasant experience while discovering new sights or stories in the city. By asserting that locative media finally give people a means to rediscover the city, easy connections are made to the Situationists' urban *dérives*. This elides the temporal and material specificity of the Situationist movement. As Emma Ota from *dis.location* puts it, location 'is not a set of coordinates; it is not something static and easily measurable; it is not a case of physical geography but it is a state which exists through the complex interplay of history, culture, socio-politics, economics and technologies. Location is a multifaceted context, a situation and a state of being and is not necessarily linked to the ground beneath our feet'.¹⁵ Many of the location-based projects exemplify a peculiarly Western and standardising spatial mapping, and forget to

15. Emma Ota, 'Inaccurate Coordinates', *Proceedings of ISEA2008 the 14th International Symposium on Electronic Art*, Singapore: ISEA, 2008, p. 361.

look at other forms of 'navigation' or different relations to place. This is not to say that contemporary walks need to be political acts, but rather, it is a reminder that 'participation' is inherently connected with choice, agency and action.

A project that does aim to equip people to deal with this ambiguity and to make informed decisions about the networks that they populate is *Loca*. *Loca* was developed as an artist-led grass roots team examining pervasive surveillance, including John Evans, Drew Hement, Theo Humphries and Mike Raento. *Loca* makes a clear statement with regard to the uses of locative media. *Loca* would like to make people aware that they have agency, that they can avoid being tracked by turning off their device, or in this case, switching their Bluetooth device to 'invisible'. *Loca* also sets out to reveal the limit of this agency. By deploying a cluster of interconnected, self-sufficient Bluetooth nodes across downtown San Jose during ISEA06 and ZeroOne, the *Loca* art group were able to track and communicate with the residents of San Jose via their cell phones without their permission or knowledge, as long as they had their Bluetooth device set to discoverable. Over a seven-day period, more than 2500 people were detected more than half a million times by the *Loca* node network, enabling the team to build up a detailed picture of their movements. People were sent messages from a stranger with intimate knowledge of their movements. Over the course of the week the tone of the messages changed, from 'coffee later?' to the more sinister 'r u ignoring me?'. *Loca* examined what happens when it is simple for everyone to be tracked, when surveillance can be affected by consumer level technology within peer-to-peer networks, without collapsing this ambiguity. It is an experiment that neither blindly celebrates the technology, nor claims that the technology is inherently bad. It aims to raise awareness of the networks people inhabit, to provoke people to question them, and help them to equip themselves to deal with the complexity of pervasive media environments.

Navigating through Space: GPS and the Affect of Place

*it's so noisy! uaaaahhh, I walked a square, it's hard to grasp, disconnected from the world, there are these voices that obviously kind of come from above, very funny, how do I know that this thing is actually communicating with the satellites? you are being controlled and watched by some outside alien, that's what you feel, being followed, you're very very self-aware, I would walk around, uh, you know, in the middle of nowhere, uh ok, what do I have to do, I just have to walk there? hehehehehe, sending up a signal, here I am, here I am, here I am, when did you think of getting in contact with satellites? ddzzzztschdzzzzzzz dzzzzztshhhdzzzzzzz, you envision yourself being connected to a world out there ...*¹⁶

With the introduction of mobile technologies, different contexts and spaces (virtual and physical) overlap, forming what Adriana de Souza e Silva has termed a 'hybrid nomad-

ic space'.¹⁷ According to De Souza e Silva, 'mobile technology users take the nomadic concept one step further, since not only their paths are mobile, but also the nodes [the cellphones]'.¹⁸ This becomes visible in the project *Sun Run Sun* (2008) by Yolande Harris. Harris is an artist that tries to find the opacities in the systems that control GPS and satellite technology. By highlighting certain hidden or forgotten aspects, she tries to make participants see the urban space as it is, intricate with visible cues and invisible waves. Moreover, she creates a sense of affect rather than just play or adventure. Her project *Sun Run Sun* investigates the split between the embodied experience of location and the calculated data of position. Harris questions some of the fundamental issues underlying 'efficient' and 'functional' GPS data: what is inside and what is outside? What does it mean to be located, and what does it mean to be lost? Whereas the GPS system negates one's relation to the environment, Harris encourages the listener to re-assess and to renegotiate their connection with the actual environment. By taking different data from satellites and translating them into sounds, *Sun Run Sun* delicately treads a path between technical data and actual experience, between the artificial and the natural. The artist's argument is that the ubiquity of positioning systems, GPS among them, is taking over the individual's ability to perceive spaces and navigate them. Reality becomes that of the presented data, and experiences are shaped accordingly. By using sound as a vehicle, she wants to open that space up again, because sound has the ability to open up a subjective dimension, which alters the coldness and mechanics of reading digitally generated data. By translating the abstract data and coordinates into sounds, Harris attempts to create intimacy. Returning from a walk, one person said it made her feel small and insignificant, and that this was a revelation to her. Others experienced a more positive transformation, with a contemplative sense of body and place temporarily blocking out the cares of an otherwise hectic urban lifestyle: 'It's like being in a constant conversation with every aspect of my environment, reacting physically to everything around me'. Using an intuitive navigator, *Sun Run Sun* provides people with new experiences not just of space, but also of body and mind. Affect of place is constituted here through technology.

Another artist that develops her projects around the notion of navigation is Esther Polak. By using new technologies like GPS and simple robots her aim is to re-orientate and shift perspectives on issues of cultural and technological development. As with Harris' project, an affect of place is constituted through technology, but whereas Harris' focus is on the individual experience of public space through live sound translations of satellite movements, Polak concentrates on the process of walking a route, emphasising memory and experience. In her latest project *Nomadic Milk* (2006-2009), she compares the distribution and sales strategies of two very different merchants of milk products in Nigeria. With the help of GPS systems, the driveways of the 'Fulani', who are living as nomads, are reconstructed and compared to those of an active entrepreneurial milk producer called 'PEAK milk'. The movement of the individual is tracked by GPS, and afterwards shown

16. These are some of the transcripts of reactions from participants who came back from a walk with *Satellite Sounders*, a work by Yolande Harris (2008). See *Sun Run Sun*, <http://sunrunsun.nimk.nl/>

17. Adriana De Souza e Silva, 'From Cyber to Hybrid: Mobile Technologies as Interfaces of Hybrid Spaces', *Space & Culture* 9.3 (2006): 261-278.

18. De Souza e Silva, 'From Cyber to Hybrid'.

as a live sand drawing that is mapped on the ground by a small robot – appearing before the eyes of the traverser as some kind of drawn ‘sand map’ on the ground. Polak uses the drawing to enable the participants of the project to discuss and reflect on their performance. Although the moment of recognition and surprise is quickly followed by stories and happenings en route, Polak’s main interest is in the moment of bewilderment and excitement. Affect takes place by revisiting the spatial experience, and in the process, brings about a new perceptual space. Although Polak emphasises the importance of the moment of recognition and the bewilderment that follows, the project also reveals the dichotomy between Michel de Certeau’s ‘concept-city’ – in which oppressive structures and political authority are all top-down defined – and the ‘practiced space’ in which the walker decides and chooses their own path.¹⁹ By engaging the walker or truck driver with the predefined routes and transport systems that define their daily movements, the project shows what happens at the programmed level, only to playfully twist and subvert it at the same time.

Pockets of Different Contexts

De Souza e Silva claims that mobile communication technologies ‘strengthen the users’ connection to the space they inhabit, since the connection to other users depends on their relative position in space’.²⁰ In contrast, Tapio Mäkelä believes that these kinds of arguments on behalf of user experience are overstated, arguing that ‘places become meaningful through individual and shared acts of signification, not because they register as location data’.²¹ According to Mäkelä, it is more appropriate to speak of an affect of the social or playable, than an affect of place. This seems viable because, although citizens connect to each other while in public space, this does not necessarily mean that they are actively involved with other people or the space around them. Most of the time they move in their own network or ‘bubble’ that consists of peers and like-minded people, and they do not interact with those outside of their sphere. This is an insular move that does not open up public space, but changes it from a homogeneous context into a place that consists of small pockets with different contexts.²² Nevertheless, some artists do investigate these new forms of connective agency. The trend is most visible in Augmented Reality Games, where people try to intensify a relation with place through connections. Exemplary in this respect is Blast Theory’s project *Rider Spoke* (2007), described as

a work for cyclists combining theatre with game play and state of the art technology. The project continues Blast Theory’s enquiry into performance in the age of personal communication ... The piece invites the audience to cycle through the streets of the

19. Michel de Certeau, *The Practice of Everyday Life*, Berkeley, California: University of California Press, 1984.

20. De Souza e Silva, ‘From Cyber to Hybrid’.

21. Tapio Mäkelä, ‘Technologies of Location: Affect of Place in Artistic Uses of Mobile and Social Networks’, in *Proceedings of ISEA2008 the 14th International Symposium on Electronic Art*, Singapore: ISEA, 2008, p. 315.

22. This relates to a comment made by N. Katherine Hayles in an interview with Adriana de Souza e Silva. See Adriana De Souza e Silva, ‘Mobile Networks and Public Space: Bringing Multiuser Environments into the Physical Space’, *Convergence* 10.2 (2004): 20.

city, equipped with a handheld computer. They search for a hiding place and record a short message there. And then they search for the hiding places of others.²³

In contrast to some of Blast Theory’s other works, *Rider Spoke* does not deal with game play. The city is no longer the playground to chase or find others, but is turned into a depository of voices and memories. In this sense, the work relates more to walks through the city than adventure games. This was evidenced in a series of walks by Janet Cardiff, which initially started as an artistic strategy to spatially and conceptually investigate urban space, and came to challenge the problem of apprehending and representing the multitude and movements of the modern city.²⁴ Cardiff’s approach is very different from the flâneur, who strolls around unencumbered and free, because although the narrative is open-ended and fragmented, her routes are rigorously predefined. The stories help to focus the attention to the meaning and context of buildings, hidden places, and forgotten histories. As she states, the ‘routes are designed to give the participant the physical experience of different types and textures of space’.²⁵

Blast Theory takes this notion a step further. Instead of walking, the participants ride bikes through the city, creating a different movement and relation to urban space. Although this arguably creates a sensory overload, it also creates a heightened awareness of traversing history and memory. The physical movement and the awareness of being surrounded by other people and traffic strengthens this passage through different realities. Riding in between the virtual and real changes the dimension of the city in which you feel neither a citizen nor a tourist. It is the path in-between the different memories which makes the connection to place meaningful.

Through fragmented and open-ended stories, Cardiff connects the listeners to certain spaces. By addressing the audience as a single person, the narrative enhances a feeling of intimacy as she creates a one-to-one relationship with the walker. This relationship is also sought by Blast Theory but executed in a different way. The feeling of intimacy is affected through the act of sharing the hidden stories and memories of other participants. Whereas Cardiff’s walks emphasise the complexity and multiplicity of urban space, Blast Theory’s *Rider Spoke* navigates the boundaries of the new public privacy in the city, encouraging the making of confessions while surrounded by strangers.

Synchronising Media

In contrast to urban screens, mobile technologies don’t change the appearance of the city, but they can strongly impact upon the experience of the city. As some of the projects discussed here show, they also change people’s behaviour and relationship to the city. In

23. Blast Theory, http://www.blasttheory.co.uk/bt/work_rider_spoke.html

24. Rieke Vos, ‘Walking in the City: The Art of Janet Cardiff and Francis Alys’, *Simulacrum: Tijdschrift voor kunst en cultuur* 16.3/4 (2008): 48-51.

25. Carolyn Christov-Bakargiev, ‘An Intimate Distance Riddled with Gaps: The Art of Janet Cardiff’, *Janet Cardiff: A Survey of Works including Collaborations with George Bures Miller*, New York: PS1 Contemporary Art Centre, 2nd edition, 2003, p. 22.

some cases, the projects generate discussion, and in others, by emphasising and renegotiating someone's position within their immediate surroundings, they provide a space of resonance and meaning. These kinds of projects address the social dimensions of human environments and enable productive interactions across the public/private realms. The combination of urban screens with mobile technologies could create a new sense of connectedness that supersedes the individual and increases collective experience, which in the process creates the possibility of connecting those outside of specific networks. The integration of mobile devices into urban screens networks has the potential to generate new narratives or game play.²⁶ The synchronisation of interactive participants could lead to a new reconsideration or re-appropriation of public space.

26. Storytelling across multiple forms of media is better known as *transmedia* storytelling: 'transmedia storytelling represents a process where integral elements of a fiction get dispersed systematically across multiple delivery channels for the purpose of creating a unified and coordinated entertainment experience. Ideally, each medium makes its own unique contribution to the unfolding of the story'. Henry Jenkins, 'Transmedia Storytelling 101', Confessions of an Aca-Fan weblog, 22 March, 2007, http://www.henryjenkins.org/2007/03/transmedia_storytelling_101.html. Although mostly used for marketing purposes, some artistic experiments have been conducted as well.

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CONTENT IN MOTION AN EXAMPLE OF URBAN SCREENS EDUCATION

SABINE NIEDERER, SHIRLEY NIEMANS AND BART HOEVE

In 2005, the first Urban Screens conference took place in Amsterdam, organised by the Institute of Network Cultures and the Gerrit Rietveld Academy, Research Institute for Art and Public Space, with researcher/curator Mirjam Struppek (interactionfield.de). At the Amsterdam School for Applied Sciences, it inspired staff to develop a minor programme for students in the department of interactive media. A small team, lead by Ingrid Smit and including Raina Kumra, Femke Dekker and Sabine Niederer, developed the curriculum of the minor Content in Motion (20 weeks, BA-level).

The aim of the Content in Motion minor was to teach students to work with the changing media landscape and the information layers in public space. Students were taught various strategies to design for public space, and develop (audio)visual content for urban screens and media facades. The department of interactive media combines a technological approach with a design focus, and includes business and project management education. The educational concept is based on the notion of 'decreasing guidance'. This means that the students start their first year with intensive guidance. Over the years, as the student develops a more independent professional attitude, the teachers take on the role of coaches and the students work for actual clients, rather than fictional assignments. When graduating, the students are interactive media *professionals* (rather than artists, filmmakers or researchers) with designing, programming and business skills (specialised in one of these roles or in a specific kind of interactive media). The Content in Motion minor, in tandem with the interactive media curriculum, combines a hands-on approach (workshops) with a theoretical backbone (lectures and literature in the fields of new media theory, critical design theory, storytelling, surveillance & control theory and urban screens theory – see the reading list at the end of this article). The minor makes use of a (multi-user) blog, used by both staff and students.

The first edition of Content in Motion took place in 2007, and focused mainly on storytelling in public space. Students had a course in media evolution, arming them with insights of how communication has changed and is constantly restructured due to the development of electronic and digital devices for everyday use. The students developed interactive content for public space, based on courses in storytelling, public design, critical design and user studies. The second edition (2008) had a stronger emphasis on the responsibilities of a designer or content producer when working in public space. The students were challenged to rethink the present information layers in public space, and develop *non-polluting content* for the urban public domain. Courses included critical design for public space, storytelling, media theory, talking facades and play.

Content in Motion 2009: Screen Culture

The latest edition of Content in Motion focused on the topic of Screen Culture. In twenty weeks, a total of 29 students learned how to develop strategies, concepts and content for various screen sizes (mobile, monitor/Web and urban screens) and their inherent user cultures, leading up to the development of a transmedia campaign. The minor was divided into three four-week modules, Mobile, Monitor and Urban, each with their own assignments and presentations, and was concluded with the larger, eight-week Transmedia module. The new transmedia element challenged the students to engage in new ways of interactive multi-platform storytelling, combining their knowledge of mobile, Web and urban screen cultures.

Mobile

Rapid developments within the field of mobile technology are changing the media landscape. Half the amount of mobile phones sold in the Netherlands today have a built-in GPS receiver, over two million Dutch are using the mobile Internet on a regular basis, and watching TV is increasingly becoming a mobile and small-screen activity. With these developments, users engage in dialogue with their environment through the means of servers, Bluetooth and RFID technology. In the Mobile module, students follow classes on mobile interaction, content creation and design for small screens, location-based services, the use of audio-info and locative storytelling. The first assignment in cooperation with project partner Waag Society was to design, develop, test and play an interactive GPS-based game for the Nokia N95 smart phone. Students were divided into eight teams and developed the games by using the 7scenes platform by Waag Society.

Student Project: Extinction Effect

One of the GPS games developed in this module was 'Extinction Effect', a game to be played by a group of eight people (four teams of two each carrying one phone) in the East of Amsterdam. The storyline reads:

Along with your space expedition team, you are traveling through time in search of traces of an extinct nomadic people called the 'Razuvi'. Unfortunately, something goes wrong and your spacecraft lands in Amsterdam, in the year 2009. Before being able to go home, you need to scout the town in search for the strange 'Razuvi-like' symbols. Clues are provided by your home front, however due to bad reception and missing information the teams of crew members must cooperate in order to solve a series of puzzles.

On the 7scenes map on the Nokia, GPS markers guide the teams towards specific locations where questions pop up about symbols in the environment. With each question answered correctly, the software 'translates' the symbol by returning a letter. When all questions are an-



Fig. 1: Screenshot of the Extinction Effect website.



Fig. 2: Playing a GPS-based game on the Nokia N95.

swered – or when time runs out – the letters gathered can be combined to form a sentence. If the sentence is entered correctly, the software directs the teams to a website where a final sentence is to be translated from Razuvi to Dutch, using all symbols gathered in the game by the different teams. If the teams manage to get together in time and cooperate to find the correct answer, all players receive wallpapers and a screensaver of the game design.

Of all teams, 'Extinction Effect' made the most of the limitations posed by the development platform and specifically the *Adventure* genre. Rather than letting this spoil the fun, the team found ways to use the strict genre rules to its advantage. At some points, the game was extended with 'work-arounds' that required different teams of players to collaborate in real life, in order to find clues that were to be used in the remainder of the game. A consistent design, a well-developed storyline and the creative use of characters, skills and the physical environment resulted in an exciting game experience with an actual reward at the end.

Monitor

Ubiquity is the new exclusivity.

Kenneth Lerer¹

There are very specific qualities to the online attention economy, which can be measured in amount of visitors, Web statistics, social media activity and followers. The online social presence of a product and of its developer play an important role in a society where employers are bound to google their prospective employees, and check their online behaviour on channels such as Hyves, Flickr, Last.fm or Twitter. Services such as usernamecheck.com are based on the idea that users can influence their Web presence by specifically positioning themselves online, an idea also extended by the success of LonelyGirl115, one of the most well known construed personas on the Internet. But the question may be asked whether you can really be anyone you want online. After all, does anonymity still exist in a time where we can IP-track the Dutch royal family changing their own Wikipedia entries?

In the first part of the Monitor module, the students were introduced to theory and concepts of online identity, the attention economy, the social media landscape and privacy and control in a time when search engines decide who you are. In various workshops, students were presented with methods and tools to do design research, visually keep track of development processes and document data flows.

Individual Assignment

In the second part of the module, students were given the assignment to create and give consistent Web presence to a fictional character. Inspired by the plot of the successful television series *Lost*, the context of the module assignment was formulated as follows:

On the Web, the passenger list of flight ATA 3269 from Amsterdam to Barcelona has surfaced. Rumor has it that the flight in question never arrived at its destination. Airline

1. Kenneth Lerer, 'How We Got Here, and How We Get Out of Here', *The Huffington Post*, April 29, 2009, http://www.huffingtonpost.com/kenneth-lerer/how-we-got-here-and-how-w_b_191137.html

company Atlantis Air has not (yet) responded to accusations that the passenger list has been released on purpose. What happened to flight ATA 3269? Where are crew and passengers, and why has the issue not been picked up by the media?

Students worked individually at bringing to life one of the passengers or crew members of the flight. Starting several weeks prior to the presumed take-off, personas were synthesized from observations of real-life people. These were then given character names and Web presence according to their personalities, professions and day-to-day lives. Each character's social media presence was carefully maintained over the next two weeks and plot points for possible story lines between characters were put into place. Students documented their character's development over time and created a visual poster board representing each of them. One day before the scheduled departure of flight ATA 3269, students and teachers gathered for a lengthy brainstorm session on what possible stories might be induced by looking at the created characters, that may lead to the disappearance of flight ATA 3269. This little thought-experiment resulted in five rather wild stories, one of which was voted the winner. In the last 24 hours leading up to take-off, the last online connections were made to make the final story fully consistent.

The rather abstract assignment of the monitor module proved to be quite a challenge to the *hands-on*-minded majority of the participating students. The prior level of engagement in social networks or other online platforms varied widely across students, causing this individual task to be somewhat harder for some than others. One of the main lessons learned in this module was the difficulty of creating credible online presence, be it for a brand or an unfolding storyline, in a limited amount of time. Furthermore, the assignment of creating a fictional character online was met with some ethical concerns. A valuable point of learning for the students followed from the challenge to actually put their concerns to use in developing a character and choosing types of online presence. This subject has inspired lengthy and fruitful discussions in class, as well as the intention to more specifically address media ethics in a future version of the minor.

The students were graded according to the development of their online characters in relation to the earlier developed back-stories. Ultimately, to facilitate the brainstorm about the final story, the characters needed to be represented clearly in a poster presentation, highlighting the most significant back-story elements that might be useful as 'plot points'.



Fig. 3: Monitor module, posters of created personas.

Urban

Designing for public spaces such as squares, museums, galleries, libraries, airports, parks or streets asks for a different approach than designing for a small user group. Adding an information layer on top of these meeting places could enrich them and strengthen their function of bringing people together. Since well-designed

and successful social places are rare, the Urban module started off with collecting good examples and projects. Understanding the public domain is the first step towards designing and developing for public space. Studying existing public spaces and their agendas, and knowing who your users are is an important start. In this module, various types of public space were addressed (material, social, networked, etc.), as well as the economical factors surrounding content creation and creative presentations in public space.



Fig. 4: Content in Motion students watching the presentations.

Research is a vital part of the Content in Motion minor. In the Urban module, the key elements of critical design and the surveillance society were discussed. By discussing the work of several media theorists, students develop a vision on current debates and the role the designer takes up in them. The students' understanding of these debates was tested with a written exam. Lastly, the Urban module addressed the practical aspects of designing for public space. What factors are important to take into account when using, for instance, moving imagery or graphic design? Students were taken on a tour through guerilla interventions, including permits and licenses, location choice, medium, techniques, material, form and sound, in order to be able to implement and consider these elements in their own practice.

Student Project: Vermist (Missing)

The practical assignment for this module was to develop, execute and document a 'guerilla intervention', an unconventional mediation in public space, in which students combined the theoretical and practical knowledge of design for public space. The intervention should be aimed at a social issue and in line with the characteristics of Critical Design.

One of the projects developed was 'Vermist (Missing)'. Caused by the increased amount of senior citizens and pay cuts in the care sector, the quality of eldercare has decreased in the last couple of years. Especially in the summer months, there is a significant shortage of trained people to take care of the elderly. Less and less people apply for jobs in this sector, leaving the senior citizens 'abandoned'. To shed light on the issue from a different perspective, the team made a simple intervention by faking a missing-poster that is commonly made when someone loses a loved pet. This poster, copying the same style, portrays an elderly lady and her caretaker, both smiling, stating: *MISSING I have lost my dear caretaker!* The tear-off slips state: www.zorg.nl, which is the Dutch Web portal for healthcare professionals. The posters were attached to trees and lampposts in the vicinity of homes for the elderly as well as on busy squares frequented by students on a night out.

The 'Missing' intervention has been foregrounded here since it is well in line with the principles of critical design as taught in the theoretical part of the urban module. The team has



Fig. 5: The Vermist poster, reading: Missing! I have lost my dear caretaker. On the slips: www.zorg.nl



Fig. 6: The poster on the Leidseplein, Amsterdam.

taken an accepted and well-known sign within the Dutch urban environment and, while keeping the visual language intact, has subtly altered its message urging the passer-by to step out of her daily routine and consider a pressing social issue. All of this was done with minimal means, well executed and well documented.

Transmedia

Transmedia storytelling is a trend in media production that listens closely to what Henry Jenkins has termed 'convergence culture'.² Due to digitisation and the changing media landscape, Jenkins argues, media in themselves are losing significance. The emphasis rather is moved towards content and branding. No longer just the fan, but the larger part of media consumers is taking up an active role in deciding exactly how and when he or she listens, watches or plays. Transmedia producers tap into this trend by creating stories that transcend one specific medium. Transmedia storytelling is cross-mediality by definition, but does not merely tell the same story over a number of platforms. Rather, a story unfolds and deepens over multiple platforms over time, while every new part is a self-contained experience as well. Oftentimes, these stories extend to the real world. In the transmedia campaign surrounding the *Lost* TV series, clues and story elements could be found on billboards, which in turn pointed towards new websites, giving the story a jigsaw-like quality.³

This final module of the Content in Motion minor featured classes and workshops on storytelling, project management, designing multi-platform media products, media ethics, marketing buzz and effective communication towards both active and passive target groups over platforms such as the Web, mobile media and urban screens. Also, students learn how to develop strategies for creating a fan-base, and maintaining an involved user network that is needed for a successful transmedia campaign.

In the transmedia assignment, students developed either an Alternate Reality Game or a 'locative drama'. Working in teams, they were asked to write an original storyline located in present-day Amsterdam, based on either a completely fictional idea or derived from a

source such as a newspaper story or event in the city. They should then design and develop mobile and web presence for their story or game, and carry out cross-media marketing activities to gain attention and players/participants. Finally, the students design, plan and organise a number of real-world events, which may require casting the roles of fictional characters.

Case: UFO Sighting

The goal of the UFO project team was to engage as many people as possible in their story. To this end, the team strategically posted multiple videos of an unidentified flying object on the Web. The project was to be concluded with a real-world event in which exclusive imagery of the UFO actually landing in an Amsterdam Marine base would be secretly handed out on USB sticks. Primary target group were the regular visitors of websites such as Niburu.nl and Ufoplaza.nl, to be followed by a much wider amount of viewers as the video material spread across more mainstream platforms.


First off, the team created several online identities and according back-stories with which they published on Niburu, YouTube, Twitter and other platforms. They then set out to shoot the Amsterdam night sky at the same time from various angles and for various reasons, to fit their different characters. A tourist, for instance, was filming the Nemo building when he spotted a strange object. A film student had put his camera on a tripod on his balcony to capture the skyline for a school assignment, noticing the UFO only when editing the material afterwards. The UFO was added to the imagery using After Effects, and with some interval, the two first videos were posted to YouTube. After a day, Fok.nl, the largest Dutch online forum and weblog, picked up on the first video. On Fok as well as YouTube, a heated discussion started on both the source of the strange light and the overall reliability of the video, causing the sighting to be watched over 12,000 times the day after, and linked to by a variety of weblogs and online magazines. The sudden surge of popularity urged the students to release the last two videos as well, while actively taking part in and spiking the discussions surrounding the issue. Four days later, the video of the first sighting appeared on the front page of Niburu.nl, linking three of the four videos together. It also appeared on the US *abovesecret.com* weblog, where it was analysed and taken apart by CGI experts.

Central to a successful transmedia campaign is good planning and pre-production. In order for all elements of a story to unfold according to plan, one needs to incorporate alternatives and possible interventions for all major points in the timeline. One of the challenges of the transmedia module was that there are no standardised scripts or production models yet for developing campaigns that evolve on several media platforms over time. The minor students were encouraged and coached in creatively combining existing models to best fit their scheduled campaigns. Planning and anticipation turned out to be the hardest part of the transmedia assignment, resulting in the larger part of the projects not fully meeting the goals that were set in advance within time. However, much effort and progress has been made by the students in this module in developing campaign strategies and innovative production models, which has led staff to focus grading less on the actual success and engaged participants in the events, but much more on team effort and decisions in the (pre-) production process.

2. Henry Jenkins, *Convergence Culture: Where Old and New Media Collide*, New York: New York University Press, 2006; Henry Jenkins, 'Transmedia Storytelling 101', Confessions of an Aca/Fan weblog, 22 March, http://www.henryjenkins.org/2007/03/transmedia_storytelling_101.html

3. See <http://www.xi-online.nl/tv/lost-in-transmedia-storytelling/>

Spectaculaire UFO gefilmd boven Amsterdam
 Opmerkelijk - door Ronald (Djeer) op 13-06-2009 @ 13:48




Op YouTube is een bijzonder UFO-filmpje opgedoken. De filmer, die schuilgaat onder de naam 'pixelshade', filmdde de UFO dinsdagavond boven het centrum van Amsterdam.

Voor een schoolopdracht moest de filmer sfeerbeelden maken van Amsterdam bij avondlicht. Ineens wordt zijn belangstelling getrokken door een vreemd licht. Als de filmer inzoomt op het object, is rechts van het midden een cirkelend licht te zien.

Zowel op [FOK!](#) als op [YouTube](#) is een discussie losgebarsten over de echtheid van de beelden. Volgens de een is het een verdomd knappe lasershow, een ander denkt dat het een montage is. En uiteraard denken believers dat het een ruimteschip is.

UFO achtig object in Amsterdam
 ★ ★ ★ ★



Komen ze eraan of worden wij weer bij de neus genomen? Praat mee op het [forum](#)

Fig. 7: First UFO sighting on Fok.nl.



Fig. 8: Third UFO sighting on YouTube.

The UFO Sighting team in particular has worked together meticulously during this module. The unanticipated success of the videos, however, was not met with an adequate enough response on the part of the team that may have sustained and even spiked the buzz surrounding the sightings, taking the story to another level. Positive points are due for great planning and pre-production, well-timed strategy, media incorporation and believable fictional characters.

Conclusion

Content in Motion is a minor programme at the Department for Interactive Media, University of Applied Sciences in Amsterdam. It was developed to educate students on developing content for public space by letting them research various public spaces and develop interactive solutions for media outlets in the city. Working with these timely technologies asks for a flexible approach with room for novel developments and concepts. Therefore, throughout the three years, the minor has shifted in focus, from interactive storytelling and critical design approaches, to a combination of the former in the design, planning, marketing and development of a transmedia project. The minor has become a popular part of the Interactive Media curriculum, and will continue to offer students the knowledge and skills to rethink information layers in public space, and develop meaningful content for the urban public domain.

Content in Motion weblog: <http://cim.medialab.hva.nl>

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- Urban Screens project overview: www.networkcultures.org/urbanscreens

TOWARDS AN INTEGRATED ARCHITECTURAL MEDIA SPACE

THE URBAN SCREEN AS A SOCIALISING PLATFORM

AVA FATAH GEN. SCHIECK

Introduction

The public arena provides temporal and spatial mechanisms for generating and promoting various social interactions; it offers a 'stage' for events and activities on which people negotiate boundaries of a social and cultural nature. In this respect, the built environment plays a critical role in the construction and reflection of social patterns. This is reflected in the way it acts to structure space, it does not only reflect social patterns, but can play an important role in generating patterns of movement and co-presence between people, providing a platform for rich and diverse social interactions.¹

There have been a number of technologies that have influenced the form and dynamics of cities to a great extent.² As pervasive computing is becoming increasingly part of our built environment, physical and virtual components are starting to merge in various ways such as in the application of urban screens, which are becoming closely connected to the twenty-first century's narrative of the urban space. Information displayed on large projection screens are becoming more and more ubiquitous in urban spaces. Dynamic digital information is turning into construction material. Architectural surfaces are transformed into moving images. A new form of architectural space is emerging that is different from what we have known.

What happens to the urban space when the architectural material becomes a media screen? Do we perceive the space by the content of the display? What about the activities that take place behind the building's walls? To which degree can they influence or help inform the content of the broadcasted information or shape the moving images. These moving images may play a vital role in our perception of the space around us and our understanding of the public realm that embraces them. The combination of the physical architecture with the virtual information and representations displayed on the building facades, both embedded in the urban landscape in the city, can be seen as both an interface with, and the generator of, diverse social interactions. Most of these screens, however, serve mainly commercial purposes, showing objects in different scale and proportions with no direct relation to the surrounding environment.

1. Bill Hillier and Julienne Hanson, *The Social Logic of Space*, Cambridge: Cambridge University Press, 1984.
2. Ithiel de Sola-Pool, 'The Structure of Cities, from The Social Impact of the Telephone', in Stephen Graham (ed.) *The Cybercities Reader*, London: Routledge, 2004, pp. 378-383.

Next I present selected examples that utilise media technology in various ways in the space. While these do not cover every potential application area, they do cover the area investigated so far. I give an account of different categories of potential applications, summarise their distinct properties and highlight their characteristics in relation to media technologies, the urban space within the built environment setting and passive or active participation. I then discuss key issues and ideas related to the use of the LCD and the perception of the moving images that may help throw light on the nature of the emergent environment before I highlight potential problems as an attempt to understand and overcome various issues that may arise.

Categories of Potential Applications



Fig. 1: Las Vegas Main Strip.

These screens are mainly driven by commercial advertising, appearing in various shapes, sizes and orientations. They generate a scattered landscape of tempting advertising images that defer to the car, broadcasting new dreams and fantasies.

– Information and Business

One example of the application of a media facade in a dense urban context on a big scale is the headquarters of the technology stock market NASDAQ in Manhattan. It houses the curved NASDAQ ticker and the high-tech LED (Light-Emitting Diode) display that wraps around the cylindrical corner of the building. The NASDAQ display broadcasts up-to-the-minute financial news driven by events, market highlights and advertisements.



Fig. 2: The NASDAQ building, transformation of space perception through time.

– Art and Entertainment

Dutch telecommunication company KPN in Rotterdam is an example of using the media screen to cover the entire facade. The building, situated in the former docklands-Kop van Zuid-area, is a freestanding object that can be seen from a 2 km distance. The main trade off is the orientation of the billboard screen facing the residential areas in Rotterdam, which

– Entertainment

The Las Vegas Strip grew by experiments, mistakes, wild visions, pragmatic solutions, and chaotic collage. It became 'collective Art' freed from the limitations of architectural theory and high-art taste.³ Hess described Las Vegas as a mass medium revealing the dreams, fantasies, and desires of American mass culture.⁴ In Las Vegas, form follows fantasy. More recently, this was taken a step further with LCD (Liquid Crystal Display) screens

3. Robert Venturi, Denis Scott Brown and Steven Izenour, *Learning from Las Vegas*, Cambridge, MA: MIT Press, 1972.
4. Alan Hess, *Viva Las Vegas: After-hours Architecture*, San Francisco: Chronicle Books, 1993.



Fig. 3: Screenings from 1st CASZUIDAS Urban Screens festival at CASZ Sept 2009. Symbols on the KPN screen viewed from the platform.

raises 'light pollution' issues. Unlike the NASDAQ, the animation on the screen, a non-interactive artwork, is partially designed by the general public, such as the students from the Art Academy in Rotterdam. A more recent example (October 2007) for using the urban screen as a stage for the moving image with a high quality selection of film and visual arts is the contemporary art screen CASZ in the Zuidas, Amsterdam's new office and residential district. This screen is a unique example in the world with its mix of 80% art and 20% art-related programming and advertising.

– Recreation and Entertainment

The Crown Fountain by Plenza, located at the southwest corner of the Millennium Park in downtown Chicago, features a shallow pool with two glass block towers one at each end. One side of the tower gives the illusion of projected video. Unlike the KPN building, the projected video is strongly related to its social context. It does not broadcast a pre-programmed commercial advertising but rather displays community-related images in a kind of open air gallery setting displaying the faces of one thousand Chicagoans one at a time. During the final minute of the display, the lips purse and a spout of water shoots from their mouths. This low level of action attracts people's attention and makes them feel engaged and aware of their presence within the fountain's setting.



Fig. 4: Facial elevations among the skyscrapers.

– Connectivity

The Telescope, on the other hand, was built with the aim of linking two cities: London and New York. Using a giant 'electronic telescope' and state-of-the-art technology, England and America were connected using a screen set up beside Tower Bridge in London and Brooklyn Bridge in New York. People could send messages in real time on message boards or using another medium for communication, such as gestures, dancing and so on. The screen in this case was used as a platform for communication over distance. Through the glass people could see and communicate with others in a different location and over a different time zone.



Fig. 5: Telematic connectivity creates a window between London and New York, 2008.

– Supporting Regeneration Strategies

The screen could contribute positively to space regeneration and support community activi-

ties when integrated properly into the public space. A good example is Federation Square in Melbourne, which deploys the urban screen as part of an overall vision for urban regeneration. The development of Federation Square essentially began in the mid 1990s as part of a project that reduced the railway lines running parallel to the River. Part way through this project, the Victorian State Government, in association with the Melbourne City Council, started looking at the concept of developing a square over the rail lines, which ultimately led to the design and construction of Melbourne's Federation Square (2002). Federation Square was to become a new centre of cultural activity for Melbourne – the long-awaited large, open and central square was to serve as a major civic and cultural destination with a unique model for operating the urban screen supported by the ambition to maintain up-to-date and leading edge operating technology for all aspects of the site's activities.



Fig. 6: The screen at Federation Square supporting the activities in the square during the Urban Screens Conference 2008 (left). Connectivity between three different sites and Federation Square at the seniors' festival in Melbourne (right).

Different Modes of Utilisation

One way of applying moving images on the building facade in a more flexible way is by covering buildings with projected images. In this case, the projection is temporary and does not require a high level of architectural intervention, as is the case with using LCD screens. In the following, I describe two different applications that demonstrate different ways of engaging with the facade.



Fig. 7: The Shell Centre as a projection canvas.

– Events

Projection specialists have used the Remembrance Day symbol to cover the Shell Centre on London's South Bank with giant projected poppies. The projection was clearly visible from anywhere along the South Bank. This approach offers flexibility, however, one concern is that an approach like this might lead to less integrated solutions. Two layers (or images) are superimposed on top of each other, without having a visual (or contextual) relation to the original building. The building is used only as a canvas to project on. The theme (celebration) dominated the solution, and could have been projected on any other building. Yet, I argue that this approach could be applied to listed buildings since heritage concerns prohibit major interventions. A good example is the projection of Picasso's paint-



Fig. 8: Images of Picasso paintings projected along the entire length of London's National Gallery; the columns became part of the final outcome (March, 2009).

ings on the National Gallery in London recently. In this approach, unlike the Shell Centre, the building kept its main features such as the columns and the pediments as these became part of the visual narrative.



Fig. 9: Co-presence of two realities: as people walk around, their shadows are cast on the ground, revealing the video-portraits (London, 2008).

– Supporting Social Interactivity and User-Generated Content

The interactive installation *Body Movies* by Rafael-Lozano Hemmer in central Rotterdam has explored the intersection between new technologies, urban space and active participation. The piece was a temporary intervention designed to establish architectural and social relationships where unpredicted behaviour may emerge. The Schouwburgplein square was transformed by projecting over one thousand portraits on a vertical plane, the facade of the cinema building. The portraits could not be seen when the square was empty as they were washed out through powerful lights. As soon as people walked into the square their shadows were projected onto the building and parts of the portraits were revealed within them. People passing by were invited to embody different representational narratives, creating a collective experience that nonetheless allowed distinct individual participation.⁵ Another example by the same artist based on self-representation is *Under Scan*. Thousands of 'video-portraits' were projected on the floor at random locations in various cities; at first, the portraits are not visible because the space is washed out by white light coming from a high-powered projector. The portraits 'wake up' and establish eye contact with a viewer as soon as his or her shadow activates them. As the viewer walks away, the portrait reacts by looking away, and gradually disappears if no one activates it. Both these examples engage people in various forms within the public arena. Lozano-Hemmer pointed out that an important aspect of the projection work is to produce a performative context where default buildings – in this case, the cinema – may take temporary specificity.

5. Rafael Lozano-Hemmer, 'Alien Relationships with Public Space', in Joke Brouwer, Philip Brookman and Arjen Mulder (eds.) *TransUrbanism*, Rotterdam: NAi Publishers, 2002, pp. 138-158.

Issues Relevant to the New Form of Architectural Media Space

Urban big screens are beginning to form a vital part of the visual perception of the cityscape. Dynamic moving images generate new architectural material, affecting our perception and understanding of the space around us. I suggest that perhaps a new form of urban space is emerging that is fundamentally different from what we have known. A form that is different from the spaces in the physical built environments for which our analytic tools were evolved, and hence we are ill-equipped to deal with and analyse. What happens to a building when the architectural material becomes a display screen? Do we perceive the space by the content of the display? The medium or the message? How can we understand this dynamic form or analyse it? And how do we represent this dynamic as perceived rather than as a piece of geometry? The representational techniques learned from architecture are static, contained and two-dimensional whereas the new form is dynamic, open and three-dimensional.



Fig. 10: Times Square: Building transformation through time, from static mass to a dynamic space.

Huang and Waldvogel have specified four key ideas as design guidelines that form the basis for an inhabitable interface inside buildings, an interface for the virtual architecture in conjunction with the physical environment. These key ideas are based on: spatiality, spatial elements rather than object elements, physical and virtual flexibility, distractedness, physical and virtual privacy.⁶

These also apply to the urban space when augmented with the virtual layer. Some buildings in Times Square, for instance, represent spatial elements rather than object elements (Fig. 2 and 10). On the other hand, the KPN building, represents architecture of communication over space; communication dominates space as an element in architecture (Fig. 11).



Fig. 11: The KPN building as it changes throughout the day.

A similar situation can be observed in Las Vegas. According to Venturi, Brown and Izenour, all cities communicate messages – functional, symbolic, and persuasive – to people as they move about.⁷ In Las Vegas, all three message systems are closely interrelated on the Strip.

6. Jeffrey Huang and Muriel Waldvogel, 'The Swisshouse: An Inhabitable Interface for Connecting Nations', *Proceedings of the 2004 Conference on Designing Interactive Systems: Processes, Practices, Methods, and Techniques*, Cambridge, MA: ACM Press, 2004, pp. 195-204.
7. Venturi, Brown and Izenour, *Learning from Las Vegas*.

Sometimes they are combined, as when the facade of the casino becomes one big sign or the shape of the building reflects its name, and the sign, in turn, reflects the shape. More recently, this is highlighted through novel designs of the LCD screens broadcasting animated images that dominate the Strip skyline. Having mentioned that, I suggest that in order to achieve integration on the urban level, the displayed content and output technologies need to be embedded in the architecture of the building and become part of the emergent space and perhaps space-defining elements themselves.

– Social Interactivity vs. Commercial Monologue

Artists across the world are experimenting with the new technologies as an attempt to augment the urban public domain through the support of social interactions. Lozano-Hemmer has argued that in *Body Movies*, unlike the typical use of new technologies to perform a pre-programmed commercial monologue, the participants' input and feedback – through projections, robotics, sound and local sensors – becomes an integral part of the public space and the outcome is influenced by participants' actions.⁸ The installation represents a critical example of using the new media in the urban space and it seems that in this way the new media technologies not only serve to reproduce and reinforce existing space, social structures or chance encounters, but also hold out a prospect for promoting new social forms.

– Location and Mobility

The location and scale of the animated screens or signs play a critical role in the perception of the animated images and the reception of the communicated messages. In the case of the KPN building, for instance, the animated screen is facing a residential area, turning its side to the main shopping area in centre of Rotterdam, and leaving the residential area exposed to distraction through the bright green light. Huang and Waldvogel have noted that in order to avoid distraction the display surface should not be at the centre of attention in the space, so that users are only passively aware of it.⁹ The parameters that can be regulated accordingly include the location of surfaces, orientation of surfaces, size, resolution and image refresh rate. On the other hand, designing for the highway is different than for the pedestrian. In Las Vegas, for instance, the signs are designed to attract on different levels: on an eye level, on a car level and finally, to be seen from the highway: some sign forms scattered along the Strip made a distinct



Fig. 12: Las Vegas, LCDs attract on different levels: pedestrian, car and highway.

8. Lozano-Hemmer, 'Alien Relationships with Public Space'.
9. Huang and Waldvogel, 'The Swisshouse'.

landscape of symbols and lights. The signs inflect toward the highway through the position and the form of their element.¹⁰ I noticed that this also applies to the spatial arrangement of the LCD signs and screens that have started to appear in the Strip in the last decade (Fig. 12).

Mobility of the observer (people) and the observed (the screens) through time is another aspect that should be taken into consideration. High-speed mobility changes the perception of static and dynamic; transforming images from two-dimensional to three-dimensional. More recent observations of the Strip witness an emphasis on change of position. Big LCD screens are designed to attract from different directions by arranging them spatially on a curved rail. This enables the screen to change orientation and slide back and forth from one end of the curved rail to the other. In this way, the screens attract not only on different levels, but also from different directions that change dynamically through time (Fig. 13).



Fig. 13: Las Vegas, mobile screen - change of content and orientation in real time.

– Relationship of Elements and Narrative

The challenge for the creative use of media technologies, as noted by Broeckmann, is to develop strategies of articulating the new public domains that connect physical urban spaces and the potential space created by the new media technologies.¹¹ It could perhaps be argued that in order to achieve real integration on the urban level we need to bring together the urban space, the dynamic visual information and the interaction space. One way of achieving this could be by creating a kind of narrative that makes sense of the visual dynamic information and the interaction space by integrating them into a meaningful whole. This may also promote a feeling of presence – of being there. Having said that, it might be worth mentioning that creating proper proportions is still part of a good design:

The key word is proportion. No matter what you may call it – beauty, eye appeal, good taste, or architectural compatibility, limiting the size of electrical advertising displays does not ensure any of these. Proper proportions – the relationship of graphic elements to each other – are necessary to good design, whether it be a matter of clothing, art, architecture, or an electrical sign. Relative size, not over-all size, is the factor in determining guidelines which will satisfactorily influence attractive appearance.¹²

10. Venturi, Brown and Izenour, *Learning from Las Vegas*.

11. Andreas Broeckmann, 'Public Spheres and Network Interfaces', in Stephen Graham (ed.) *The Cybercities Reader*, London: Routledge, 2004, pp. 378-383.

12. Californian Sign Association, 'Guideline Standards for Premise Signs', Los Angeles: Californian Electric Sign Association, 1967, p. 14.

– Obsolescence vs. Flexibility

One relevant concern is the discrepancy between the durability of architectural material and the rapid obsolescence of technology standards. Most of the current display technologies have a short half time that is a fraction of the corresponding half time of physical architectural elements. What happens to the display wall in three to five years, when the technology has fundamentally changed? One simple way to address this discrepancy is by separating the elements based on their necessity to be replaced.¹³ Another suggestion could be by using temporary projection on exterior or interior walls. This would allow flexibility in terms of material and space use especially for solutions related to re-use and conversion of listed buildings, as conservation issues prohibit key interventions.¹⁴

– Physical and Virtual Flexibility

Both the physical and virtual architecture could be combined in order to define the flexibility of the space and accommodate different scenarios. In this way, various solutions could be explored without the need for changing the main spatial configuration. For instance, using telematic communication systems with a broadband network and cameras on each end – as the case with the Telescope connecting London and New York – allow people to be here and there at the same time. Space becomes distributed, creating interconnected environments and leading to fundamentally new typologies in architecture.

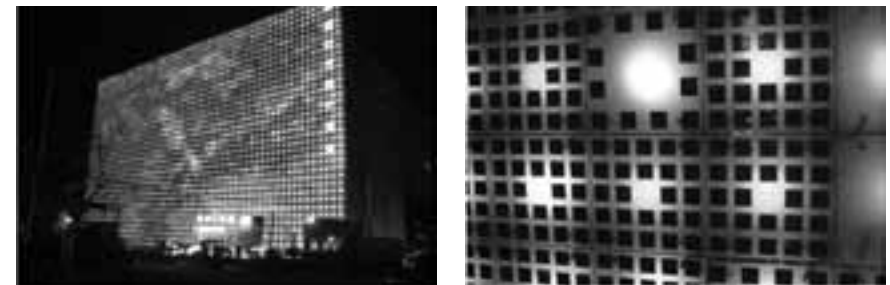


Fig. 14: Green Pix, sustainable curtain wall by Simone Giostra & Partners and Arup, 2008 (left). The coloured LED display with the first photovoltaic system integrated into the glass curtain wall (right).

– Privacy Concerns and Light Pollution

Finally, the privacy issue may arise and needs to be addressed, especially in the case of capturing participants' input, using cameras, sensors, and projections. In addition, 'sound intrusion' or 'light pollution' – as the case with KPN building – might require the implementation of regulations to regulate the amount of light-intensive signage and the massive light displays and its effect and to ensure that the screen technology applies environmentally friendly solutions and efficient use of energy such as the case with Green Pix in Beijing (Fig. 14).

To summarise, I suggest that the combination of the built environment with the digital information and representations displayed on the building facades, both embedded in the urban

13. Huang and Waldvogel, 'The Swisshouse'.

14. Ava Fatah gen. Schieck, *Converting Islington Public Hall in London: Preservation, Design and Planning in Historic Context*, Thesis, Cologne University for Applied Science, 1999.



Fig. 15: Friends using the prototype as a dance stage, 2006.

space, can be seen as both an interface with, and the generator of, various social interactions.

I am interested in exploring various types of social interactions, enabled through the deployment of pervasive computing systems in the city such as the screens. I believe it is important to understand, when studying any type of technology, how these technologies reflect the social

relations and how they might change these social relations. In order to understand various facets of socio-technical behaviours when implementing the screen in the urban space, I have been involved with conducting an empirical study using a prototype in the form of a digital screen, embedded in the built environment in selected locations in the city of Bath, UK. The aim is to generate a rich urban experience that can be introduced in various places in the city and can generate shared encounters among friends, observers or strangers.

In the following sections, I describe the study and demonstrate users' experience. I outline the initial findings and illustrate the impact of the spatial properties on the type of the shared encounters before highlighting related issues.

– Exploring Technology Enabled Encounters in the City

As part of an ongoing effort to understand the city as a system encompassing both the built environment and pervasive digital technologies, I have been involved in a study using a digital prototype in various locations in the city of Bath.¹⁵ The prototype was implemented as a digital portable installation with a grid of LEDs embedded in the form of a responsive surface in the urban environment using the body as an interface. When people walk over the LED surface a pattern of lights is generated dynamically following their movement acting as a non-traditional interface and a facilitator between people and people, and people and their surroundings (Fig. 15).

The installation was tested in three different locations in the city; we selected locations with low, medium and high pedestrian flows. A range of empirical observation methods were implemented including observing and recording the movements in and out of the interaction space, as well as the type of activity taking place in the surrounding space (Fig. 16).

Peoples' interactions with the prototype, and with the other people in the area, were captured and video-taped by two researchers. In addition, peoples' movements on the surface were tracked. Following the observation sessions, a selected number of participants were interviewed using a structured discussion and a questionnaire. During the sessions, we observed the following emergent patterns of behaviour.

15. Ava Fatah gen. Schieck, Carolina Briones and Chiron Mottram, 'The Urban Screen as a Socialising Platform: Exploring the Role of Place within the Urban Space', in Frank Eckardt, Jens Geelhaar, Laura Colini, Katharine S. Willis, Konstantinos Chorianopoulos and Ralf Hennig (eds.) *MEDIACITY – Situations, Practices and Encounters*, Berlin: Frank & Timme, 2008, pp. 285-305.



Fig. 16: Top view of the three areas showing movement flow and static activities during midday.

– Spatial Setting and City Rhythm

Our evaluation demonstrated that the physical setting of the built environment had a direct influence on the movement flow of passers-by and the activities taking place near the locations, which in turn had a direct impact on the characteristics of the social encounter and the shared experience. Different types of behaviour were observed in relation to the spatial properties, for instance, in a wide and highly integrated street, which is characterised with a fast walking pace, people tended to simply glance at the prototype and continue walking with the same pace towards their destination. In contrast, in a highly integrated area with a lower pace, characterised as being an intersection of more than one pedestrian route, people tended to stop around the prototype and share the experience with other people. This varied during different times of the day, which seems to be supported by the temporal and the spatial properties of the physical space.



Fig. 17: Installing the digital stage created the feel of an urban performance (left). Some people were simply glancing at the installation (middle). People waiting for their turn (right).

– The Installation as an Urban Performance

The installation set-up process created a feel of an urban performance as it unfolds in real-time. Over time, people started gathering around the set-up location waiting for the 'event' to start (Fig. 17). In this way, the space is acting as a place for urban performance.



Fig. 18: interactions on the digital surface: among friends (left) and strangers (right).

– Awareness

Awareness varied from peripheral awareness to focal awareness or direct interaction. Different levels of awareness were observed among people walking around the area, from those simply glancing at the interactive prototype, to people stopping around it and asking about

how it works (Fig. 18). After testing the installation, some people started to comment on the experience and engage with other people nearby by explaining rules of interaction.

– Shared Experience

The LED surface acted as a physical encounter stage. People behaved differently in different situations and the experiences varied depending on whether the interaction took place among friends or strangers. During the test sessions, most people shared the experiences with friends; however, a few of the participants shared the experience with a stranger. The most common pattern observed when strangers were interacting was that they were waiting for their turn (Fig. 18).

– Social Proximity

The social proximity or person-to-person distance has played a profound role in shaping the nature of interactions with other people on the digital platform. The distance was different between strangers compared to that between friends and it seems that this aspect has influenced peoples' perception of their personal space, which was changing dynamically in relation to those around them. Unlike the case with friends, strangers tended to define their territory and stay on one side, not crossing the interaction area of the other user, leaving a kind of mutual acceptance distance between users (Fig. 19).



Fig. 19: The digital platform as a dance floor (left and middle). Group interactions among friends (right).

– Playful Use of Technology

The deployment of the digital screen encouraged playful use of technology that triggered shared interactions and encounters among people. In some cases, this was built up amid anticipation as people used relevant prior experience and expectations of a new experience. For example, often people recognised the prototype as a 'dance floor' before they interacted with it. We also observed differences between singles and groups behaviour. In a group, we saw a dynamic flow of interactions. People tend to play with the installation while interacting with of the group members (Fig. 20).

– The Temporal Aspect

An interesting aspect we observed was that during the evening session the nature and duration of the interactions were different than those during day-time in the same location. Although a fewer number of people stopped to engage with the installation, during the evening session people tended to be 'themselves' and express different visions about the digital installations. Some of them continued dancing for a long period of time (for over an hour).

To sum up, our investigations suggest that the success of implementing a large digital screen in the urban environment depends on internal factors such as the properties of the digital platform and on the external factors relating to the social, temporal, and the physical settings



Fig. 20: Two friends interacting for a long period of time (left). A man trying to persuade his dog to walk over the digital surface (right).

of the surroundings. We believe that a public interactive installation, like the one presented here, could provide a platform for rich social awareness and interactions among the various people involved. However, by situating it in various locations and social contexts, diverse and unpredicted social behaviours may emerge. In particular, we note the importance of constructing socially meaningful relations between people mediated by these technologies. In this respect, a particularly important insight comes from the effects we observed of the impact of the presence of the human observer on the perception of the experience, which encouraged the viewer to engage with the 'event' in various unpredictable ways. We suspect that in order for public display of these technologies to be engaging the viewer needs to be able to construct a meaningful social relationship of which the display forms a part. The presence of the 'observer' offers one example of this, generating rich shared encounters.

The study I described here investigates the relation between technology-enabled encounter and the temporal, spatial and syntactical properties in a city context. What about the city as a whole? The use of the urban screens will bring new potential and challenges for city regulators, artists, architects, urban designers, producers, broadcasters, advertisers and planners; however, there is currently very little information in the public domain relating to the set-up of the screens in the urban space. Who can put up a screen? Are there any existing or potential funding models? What regulations govern the content on show, or how loud or bright they can be?

In order to achieve a better understanding of the new challenges we need to address various issues related to the implementation of the urban screens in a consistent manner before we proceed any further. Above all, we need to target the planning system, where all the high aspirations of a sustainable implementation of media screens and the effective integration into existing urban structures can fail if appropriate enabling mechanisms and development strategies are not found and satisfactorily executed.

In the last part of this paper, I present our ongoing work, and as part of the SCREAM project, which aims to influence developments related to the sustainable implementation of urban media screens in the UK positively. I outline the framework we developed and conclude by suggesting areas that require further research.

Towards Sustainable Implementation of Urban Screens

In the next stage of our work we aimed at generating a debate to discuss issues related to the sustainable deployment of the urban screen and to begin a dialogue between the parties concerned including artists, planners, broadcasters, content developers, curators, managers, designers, film makers, funding bodies, joint partnerships, land developers, real estate, social media, screen technologists, screen managers, urban designers, planners and local policy makers.

The local authorities who consider planning applications are responsible for deciding if the digital screens are to be allowed and where they should be located. An informed decision can help support regeneration and community engagement, but a decision could also cause major harm if it is not appropriately informed. Currently, most local authorities do not have specific guidance for the implementation and set up of digital urban screens. They rely instead on policies in relation to billboards and large-scale advertising, or sometimes on employing an external consultant to advise on various issues. As a response, we held a series of workshops in order to bring together the key stakeholders in delivering sustainable implementation of the urban screens in the UK. The aim is to enable a group debate and knowledge exchange among those who play an active role in the field and to develop a framework on how to deal with the issues of media screens as part of the planning process. In the following section, I outline the framework we have developed and describe the main aspects to be considered when implementing the screen in the urban space.

Framework for the Implementation of Urban Big Screens

We have identified the following issues as being of key importance to the implementation and realisation of the screens and their communication potential in the urban space.¹⁶

– Context and the Built Environment

The selection of the screen location should contribute positively to the use of the space and the city as a whole. Understanding the nature of the urban space, the built environment, local movement patterns, the activities taking place in the space and natural features is essential in order to create a healthy balance between the place, the type of content, and the intended impact on the space and the public. In this respect, the characteristics of the built environment should be taken into account ensuring accessibility during big events including health and safety issues, crowd behaviour and crowd control. Moreover, the selection of the screen material should be based on site-specific solutions, in particular within a historic environment taking into account the heritage values of the place. The screen should be robust and easy to manage. More importantly, it should consider sustainable, environmentally friendly and energy efficient solutions.

– Content and Screen Technology

The screen content will succeed only if it is directed at the public and is accepted by the public.

16. Ava Fatah gen. Schieck, Ghislaine Boddington, Peter Fink, Framework for the implementation of urban big screens in the public space, 2009, London, UK.

In order to ensure the best results for community and public engagement, the relevant stakeholders should be involved in the process from the start including artists and content creators.

Screens could be ambient, or they could provide an innovative outlet for culture and art. The content could be user generated or self-generated. It could generate interactions between people and the screen, or people and people, or it could connect people in two remote locations, such as the Telescope connecting London and New York.

When implementing the screen in the urban space, we face various technical challenges such as the impact of high definition and how it might affect the relationship of the viewer to the screen. Other factors related to the image quality and the relation to the content such as size, shape, resolution or aspects related to the light sources such as LED, LCD, fluorescent and their impact on the outcome. Light or sound intrusion may be acceptable for temporary events; however, for long-term activities it could have a significant impact on the surroundings.

Screen solutions should be fit to purpose; for instance, allowing the viewer to interact with the screen using a hand-held component such as a mobile phone or allowing full body real-time interaction when creating connectivity between two remote locations. Finally, an ongoing challenge is how to support cross-platforms content and user-centric access any time, any place, any platform, any technology.

– Communication and Public Engagement

The screen has a community feel to it and can be seen more as an engaging tool rather than a TV sender/receiver. Everyday kind of activities and different types of public can be supported by generating different modes of communication including ambient modes, active modes or special events or by creating a mix of passive and active environments and encouraging playful implementation of the content.

There are different ways of presenting the content and engaging the public, such as providing detailed information about the screening using a web-based management system, or using Bluetooth or mobile connectivity to the event. Comperes can play a positive role in supporting active engagement with an event by providing explanation and in managing the event.

In order to reach diverse communities, different solutions could be deployed including permanent, temporary and mobile solutions using a series of mobile touring screens or truck-based solutions, for instance. The content may also take into account the variety in demographics in city centres to support the diversity in the public realm, and depending on the location, demonstrating community/ethnic sensitivity awareness. Finally, an ongoing challenge is to address the role of commercial screens in the debate 'should commercial screens host community access and creative content as a matter of planning approval?'

– Screen Scheduling

Managing and scheduling the screen's content is a challenge. Understanding the movement flow, the movement rhythm and the type of activities in the space, throughout different times

of the day or night in the city, can play a vital role in determining the choice of content for a specific screen. Understanding movement rhythm, for example, in the morning and evening commute, when people aim to get to work or go home, is an important part in determining the choice of content for the urban screens. Although the 'commute' may appear obvious, the different role played by different urban locations during that period is less so. Some spaces become important meeting and interaction spots, where one buys the paper or coffee, while others are strictly 'head down and move through' spaces. Good local knowledge of these rhythms with respect to the spaces is key in determining appropriate content scheduling for screens in these places.¹⁷

Moreover, various screens could be connected using a digital network allowing the generation of content and the shared use of it elsewhere. An ongoing challenge is to identify in the early stages of implementation what will happen to the screen in the future (in 5-10 years) and who will be in charge of the screen scheduling work. An agreed strategy needs to be developed among relevant partners for the creation and management of the content, and for the operation of the screen on a day-to-day basis in order to deal with various issues related to the screen operation.

– Funding Models

Proper funding for content creation and professional curation is key to the successful deployment of urban screens and media facades. In order to ensure the success of the screen during the screen's lifetime there is a need to have high quality commissioning, skilful curation and adequate funding. In this respect, bringing together a set of partnerships in the early stage of implementation is essential for successful screen deployment. The UK BBC model showed itself to be a unique concept, with its public service approach offering an alternative to commercial advertising screens.¹⁸

Finally, a couple of important questions are raised: how do we assess the impact of implementing the screens in the urban space? How do we know that the screen had a positive impact in a specific location? Can we quantify success? In order to answer these questions we need to identify methods and ways that allow us to capture and understand the impact of the screen on a specific location and on the city as a whole. This and other issues raised in this paper are to be addressed in future research.

Conclusion

With the advent of pervasive mobile and media technologies as part of the urban space, we need to achieve a better understanding of place and the role of context as an emergent situation – physical, digital, social and mental. Over the last decade, the architectural landscape in cities like New York, Tokyo and London has been undergoing a major transformation. Large

LCD screens and LED billboards are appearing as part of the city architectural landscape. Architecture is becoming a visual interface that can communicate or itself become a facilitator and a medium of communication. A new form of urban space is emerging that is radically different from what we have known before, and it seems that we are ill-equipped to deal with and understand it. Currently, there is no methodology for designing media screens as an integral part of the urban built environment. We need to expand and adapt our understanding and practice of urban design by looking at the urban environment as an integrated whole mediating both the built environment and pervasive media technologies. I believe that in spite of the increasing realisation of the application of the urban screen technology on buildings' external facades, particularly through innovative architectural projects, there is little academic, as opposed to architectural, interest.

This paper argued for the need of developing a theoretical base on which to found design principles for the new emergent urban forms that combine between the virtual dynamic (information), the physical environment (public space) and various social interactions. The theoretical base and the new concepts may help us understand better the nature of the new emergent environment and help analyse it. I believe that in order to achieve real integration on an urban level we need to consider the design of space as a whole, bringing together the physical space, the dynamic visual information and the interaction space. In particular, I note the importance of constructing socially meaningful relations between people mediated by these technologies.

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17. M. Glancy, K. O'Hara, B. Crowther, J. Moore, S. Robertshaw, A. Pressland, M. Cartwright, A. Collins, N. Smyth, J. Thompson, M. Sparks, S. Kuniawan and E. Geelhoed, 'Understanding Audience Behaviours Around the Big Screens in Public Spaces', *Big Screen Report*, 2007.
18. Kate Taylor, 'Programming Video Art for Urban Screens in Public Space', *First Monday*, Special Issue 4 (2006); <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1555/1470>

ACKNOWLEDGEMENTS

The author would like to thank Carolina Briones for her valuable contribution. Thanks to Ghislaine Boddington and Peter Fink for their contribution to the framework. We would also like to acknowledge contribution from participants at the UrbanBuzz funded project SCREAM.

This research presented in this paper is partly funded by the UK EPSRC grant EP/C547683/1 (Cityware: Urban Design and Pervasive Systems).

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URBAN SCREENS, SPATIAL REGENERATION AND CULTURAL CITIZENSHIP

THE EMBODIED INTERACTION OF CULTURAL PARTICIPATION

AUDREY YUE

Introduction

At China's Olympic Park, the dragon-shaped Beijing Pangu Plaza abuts the spectacular 'Water Cube' and 'Bird's Nest', two sporting facilities hailed as new icons of post-socialist Chinese might. This precinct, ear-marked to become the 'second capital' of the city, spans the size of seven football fields and houses what is reportedly the largest comprehensive community of Beijing: business, trade, office, residential, exhibition, sports and entertainment. At its heart are the Plaza's seven huge oblong screens, totaling 3400 square metres, carved into the walls of the buildings, blending art, architecture and commerce. During the recent Olympics, these screens, together with others set up in the Summer Palace and the Temple of Heaven, broadcasted live events to give Beijingers a share in the experience, providing locals with a taste of global sports and producing its own aura mediated by the screen itself.

Such ambient experience of large screens is optimised on Fremont Street in Las Vegas, America. The screen surface, the largest projection in the world, constructs a canopy and light show 50 meters above the ground. Marketing campaigns tout this architectural event as the most intimate experience of vintage Vegas: 'Glittering lights. Stunning visual and sound effects. Crowds of people... high tech wonderment, live entertainment'.¹ More than 25,000 people visit the street daily.

In Australia's Federation Square, a Melbourne civic plaza designed to accommodate more than 15,000 people, a large screen holds together the postmodern fractal building, its cobble-stoned square, deck and labyrinth. In 2008, more than 1855 events were held at the Square.² It is the city's second most visited tourist destination. For Melbourne's own residents, it is also its most embraced community focal point.

In these places, urban screens – as 'yard- and perch-scale displays [sic] deployed in public spaces in urban contexts'³ – have transformed cityscapes through their spatial regeneration developments that have cultivated new national pride, fast-tracked tourism and en-

1. Fremont Street Experience, http://www.vegas.com/attractions/off_the_strip/fremontstreet

2. *Federation Square Annual Report*, Melbourne, p. 3.
Available at: <http://www.federationsquare.com.au/index.cfm?pageID=124>

3. Ian McColl and Ingrid Richardson, 'A Cultural Somatics of Mobile Media and Urban Screens: Wiffiti and the IWALL prototype', *Journal of Urban Technology* 15:3 (2008): 99-116.

gendered new communities. The event-led renewal in Beijing has beautified the physical landscape of the city, hard branded neighbourhoods and engineered a new socio-cultural image for its people. In Melbourne, the Square, built over a set of disused railyards, has created a public space as a thoroughfare between the heart of the city and its riverside. Home to at least forty annual multicultural events, it has harnessed the diversity of its citizenry and brought tourists, residents and immigrants alike into its civic fold. Similarly, the light show in Las Vegas has also revitalised and added value to the city. Replicating the famed Vegas strip, it has become its own entertainment that even simulates the real. These experiences, whether real or hyperreal, inclusive like Melbourne's embrace of new cosmopolitanism or exclusive like Beijing's notorious displacement of at least 350,000 city residents, highlight the capacity of urban screens to serve as focal points in urban regeneration projects.

In postmodern media cities, the installation of large urban screens is a fundamental part of urban regeneration. Urban screens are material and cultural infrastructures that merge architecture, urban design, landscape architecture, economic development, the arts, and natural and cultural history, to produce places where people choose to go. As highly specific local cultural amenities, urban screens have to cater to the needs and desires of the population. They integrate different sectors, from city councils and arts institutions to hardware and software producers, businesses and content providers. While urban screens are increasingly ubiquitous features in global cities that use standardised technological infrastructures to ameliorate anxieties associated with the 'loss of place', they produce new public spaces and civic agencies as local sites of social change. By screening content and engaging audiences across time and space, they are also at the frontiers of transnational exchange. Different modes of urban regeneration produce significantly different outcomes; in China, political beautification has gentrified neighbourhoods and displaced residents but also produced new spectators; in Las Vegas, it has led to continued exclusion of those without the capacity to consume; and in Melbourne, it has become a new landmark for urban commuters and tourists alike. Urban screens and spatial regeneration share the strategy of embedding: the former are embedded technologies and practices, while the latter integrates local constituency as unique place-making features and new influences of diversity.

This chapter examines the potential of urban screens in spatial regeneration developments to increase the capacity for civic inclusion. The first section introduces the theoretical scope of culture-led urban regeneration and problematises how its neoliberal approach to monopoly culture has brought about spatial polarisation and community erosion. It argues for a return to the politics of cultural planning that emphasises the civic roles of cultural democracy and cultural citizenship, and critically shows how cultural participation is central to the building block of cultural citizenship. The second section examines how urban screens create a new modality of embodied interaction that enhances cultural participation in the public sphere. It further evaluates the quality of this mediated connection by suggesting the social capital framework as an approach to consider how investments in cultural capital can lead to social cohesion. This chapter argues that urban screens' embodied interaction of cultural participation provides a new material base to create quality social networks as new cultural indicators to augment the quality of life in urban cities.

Urban Regeneration: The Politics of Cultural Planning and Cultural Citizenship

Urban and spatial regeneration is a process geared towards the economic and physical renewal of places. It has been and is one of the most important strategies to address urban decay, social deprivation, economic change and societal differentiation. It generates practical outputs that contribute to the economic and social restructuring of an urban area; attracts investments in businesses, urban infrastructure, and facilities; creates economic wealth; and has the potential to redistribute resources and power. Whether driven by top-down planning policies, or bottom-up community imperatives, the aim of spatial regeneration is to make cities economically competitive, liveable, fiscally sound and socially inclusive, enhancing and sustaining the quality of life. As Charles Landry cautions, city-making should not only focus on the art of making a city the most creative *in* the world, it should also strive to be the best *for* the world. Shifting the focus from being about 'in' to 'for' gives cities 'an *ethical* foundation' to become 'places of *solidarity*'.⁴

Spatial regeneration has evolved from its origins as the craft of physical planning into a complex and multi-layered process often involving competing interests in the fields of architecture, systems science and Marxist urban theory.⁵ Analyses of spatial regeneration cover a wide range of urban transformations, from parks, public housing, and private conservation to large-scale government developments. They include heritage preservation, ecological design, environmental renewal and the creation of new districts of residence and commerce. While most have traditionally focused on the form and character of places and the broader socio-economic impact on its communities, recent analyses, following the sustainability paradigm, have shifted the focus on space to consider the impact of time on the built and natural environment.⁶ Some, like Portland's urban waterfront developments in Oregon, America, have capitalised on various forms of nature in their desire to pursue an ethical urban ecology that complements the aims of culture-led urban regeneration.⁷

Culture-led urban regeneration has risen prominently in recent years as a result of government cultural policies that promote the use of culture as a driver for economic growth. The globalisation of urban screens is part of the culture-led urban revival that reflects the increased culturalisation of the contemporary urban economy and its multiple uses in leveraging social, economic and political inclusion.⁸ Culture-led urban regeneration found early

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4. Charles Landry, *The Art of City Making*, London: Earthscan, 2006, p. 1. Emphases in original.
 5. Peter Hall, 'The City of Theory', *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century*, Malden, MA: Blackwell Publishers, 2002, pp. 352-377.
 6. Timothy Beatley, 'Planning for Sustainability in European Cities: A Review of Practice on Leading Cities', in Stephen M. Wheeler and Timothy Beatley (eds.) *The Sustainable Urban Development Reader*, London: Routledge, 2004, pp. 249-258; Mike Raco, Steven Henderson and Sophie Bowlby, 'Changing Times, Changing Places: Urban Development and the Politics of Space – Time', *Environment and Planning A* 40 (2008): 2652-2673.
 7. Chris Hagerman, 'Shaping Neighbourhoods and Nature: Urban Political Ecologies of Urban Waterfront Transformations in Portland, Oregon', *Cities* 24.4 (2007): 285-297.
 8. George Yúdice, *The Expediency of Culture: Uses of Culture in the Global Era*, Durham: Duke University Press, 2003; Andy Pratt and Paul Jeffcut (eds.) *Creativity, Innovation and the Cultural Economy*, New York: Routledge, 2009.

currency in Britain in the late 1990s when then Prime Minister Tony Blair championed the progressive politics of the Third Way by establishing the Department of Media, Culture and Sport (DCMS) that advocated the centrality of culture to economic and spatial regeneration.⁹ Two interrelated questions have since emerged from this deployment: how do these developments impact on the lives of people who live in the city, and what are the evaluation methodologies available to assess the pros and cons of these developments?¹⁰

The value of culture to urban renewal has been emphasised in cultural production studies that examine cultural infrastructures, cultural industries, cultural diversity and cultural activities.¹¹ Urban screens deploy the utility of culture examined in these studies: as cultural infrastructures, they are innovative exhibition screens; as cultural industries, they belong to the burgeoning industries of digital media; as cultural diversity, they add value to public spaces with their content of screen diversity and produce new communities of users that are often urban, cosmopolitan and savvy in their appreciation of arts and arts amenities; and, as cultural activities, they create public events that are often hybrids that combine screen interactivity and mediated public communication.

Critical cultural production studies often problematise the narrow economic value of the arts measured through employment, turnover, visitation patterns, multiplier effects and the export performance of the cultural sector.¹² They also expose how cultural assets are valued as investments.¹³ In urban regeneration projects where assets such as the quality of physical amenities, good views, positional locations, reputations and the vitality of its people are exploited to enhance the unique distinction of a place, rents are pursued on the basis of culture's capacity to attract people and commerce. As David Harvey's political economy of culture suggests, in the pursuit of monopoly rents, cities have transformed common amenities and assets into fixed capital.¹⁴ Neoclassical economics has not only limited the scope of the arts through the emphasis on supply and demand; in pursuit of monopoly rents, it has

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9. Deborah Stevenson, "'Civic Gold' Rush: Cultural Planning and the Politics of the Third Way', *International Journal of Cultural Policy* 10.1 (2004): 119-131; Andy Pratt, 'Cultural Industries and Public Policy: An Oxymoron?' *International Journal of Cultural Policy* 11.1 (2005): 31-44.
 10. Steven Miles and Ronan Paddison, 'Introduction: The Rise and Rise of Culture-Led Urban Regeneration', in Steven Miles and Ronan Paddison (eds.) *Culture-Led Urban Regeneration*, London: Routledge, 2007, pp. ix-xv.
 11. Allen J. Scott, *The Cultural Economy of Cities: Essays on the Geography of Image-Producing Industries*, London: Sage, 2000; Richard Florida, *Cities and the Creative Class*, New York: Routledge, 2005; Ben Goldsmith and Tom O'Regan, *Cinema Cities, Media Cities: The Contemporary International Studio Complex*, Woolloomooloo, NSW: Australian Film Commission, 2003; M. Paiola, 'Cultural Events as Potential Drivers of Urban Regeneration: An Empirical Illustration', *Industry and Innovation* 15.5 (2008): 513-529.
 12. Chris Gibson, Peter Murphy and Robert Freestone, 'Employment and Socio-Spatial Relations in Australia's Cultural Economy', *Australian Geographer* 33 (2002): 173-189.
 13. Eliot M. Tretter, 'The Cultures of Capitalism: Glasgow and the Monopoly of Culture', *Antipode* 41.1 (2009): 111-132.
 14. David Harvey, *Spaces of Capital: Towards a Critical Geography*, New York: Routledge, 2001.

also created a monopoly of culture that '(produces) tensions between ownership and use'.¹⁵ The production of cultural activities by place-based social movements and the circulation of cultural activities also affect and inform the value of culture. Central to this tension between monopoly and grassroots self-fashioning is urban renewal's capacity to generate participation.

Although urban regeneration policies emphasise the participation of communities in their strategy to combat social exclusion, few studies have critically examined their impact on social inclusion. In Britain's New Labor urban renewal policies, private-public partnerships are criticised for constructing the concept of the community around 'local networks, based primarily around "traditional" family units'.¹⁶ They are often influenced by neoliberal values that '(devolve) responsibility for combating social exclusion and increasing "community cohesion" to [minority groups such as] local women'.¹⁷ While government rhetoric commits to inclusive community participation, they provide little resources to empower the community. Minority communities often lack the bridging social capital required to fully participate in these partnerships. More often than not, regeneration can lead to exclusion and the erosion of the communities that groups rely on for support.

A continuum of participation also affects how communities are imagined. Participation in private-public partnerships can range from the rational choice of the consumer-citizen to the capacity of social networks to generate collective ethos.¹⁸ These differential levels of participation recall Sherry Arnstein's seminal concept of citizen participation that uses the metaphor of a ladder to grade the level of public participation in urban programs that affect citizens' lives.¹⁹ Low on this ladder are non-participatory forms such as manipulation and therapy; high on the ladder are partnerships and delegated control. Even on the highest rungs of participation, the nature and structure of private-public partnerships require the careful negotiation of power and control.

The research outlined above provides a rudimentary overview to introduce the scope of urban regeneration, the stakes involved at the level of industrial production and the politics of community participation in urban planning programs. In Australia, these developments are further problematised when considering the history of deindustrialisation and its subsequent capacity for cultivating cultural capital, social image and cultural participation.

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15. Tretter, 'The Cultures of Capitalism', 117.
 16. Victoria Gosling, 'Regenerating Communities: Women's Experiences of Urban Regeneration', *Urban Studies* 45.3 (2008): 610.
 17. Gosling, 'Regenerating Communities', p. 611.
 18. Georgina Blakeley and Brendan Evans, 'Who Participates, How and Why in Urban Regeneration Projects? The Case of the New "City" of East Manchester', *Social Policy and Administration* 43.1 (2009): 15-32.
 19. Sherry Arnstein, 'A Ladder of Citizen Participation', in Richard T. LeGates and Frederic Stout (eds.) *The City Reader*, fourth edition, New York: Routledge, 2007, pp. 233-244; see also Peter Marris and Martin Rein, *Dilemmas of Social Reform*, second edition, Chicago: University of Chicago Press, 1982; James Brighton, *The Public Participation Handbook: Making Better Decisions Through Citizen Involvement*, San Francisco: Jossey-Bass, 2006.

Urban planning in Australian cities has followed the forces of its own historical development beginning with early colonial bureaucracy and its settlement of the nation, post-war suburban town planning in the 1940s, and social democratic managerialism from the 1960s, to the current milieu of corporate liberalism influenced by neoliberalism, diversity multiculturalism and globalisation.²⁰ In the last three decades, however, its city regeneration programs have shared the same trajectory of deindustrialisation experienced in North American and European countries where the decline in manufacturing is replaced by gentrification and its subsequent renewals of streetscape and urban amenities.

The displacement of metropolitan manufacturing industries to the cheaper outer suburbs is a nation-wide trend. In the Melbourne inner-city suburb of Fitzroy, a property-led urban renaissance in the last two decades has gradually transformed empty warehouses into loft-living apartments and the working-class district into a gentrified bohemia.²¹ Like Sydney's makeover of its harbour front in the 1980s, increased urban governance in Adelaide has also recently redeveloped its disused industrial and maritime waterfront into a site of capital accumulation and cultural consumption.²² Driven by the forces of corporate liberalism, capital accumulation privileges marketplace entrepreneurialism as 'a process of consumption-based re-invention of housing, business and leisure'.²³ In these regeneration projects, rather than regulating and managing the city, urban governance exploits cultural pluralism to promote and sell the city that paradoxically and potentially exacerbates spatial polarisation.

A return to the politics of cultural planning will provide a more nuanced approach to critically consider the inherent tensions of monopoly culture, community destruction and spatial polarisation outlined above. Coming out of the fields of cultural policy studies as a concept that aims to nurture cultural activities to suit economic aims and social life,²⁴ cultural planning has been described as the 'best practice' in urban renewal.²⁵ It is a process of 'identifying projects, devising plans and managing implementation strategies...intended as a cultural approach to any type of public policy'.²⁶ It encompasses the 'production, con-

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20. Brendan Gleeson and Nicholas Low, *Australian Urban Planning: New Challenges, New Agendas*, St Leonards, N.S.W.: Allen & Unwin, 2000, pp. 69-100; see also Deborah Stevenson, *Agendas in Place: Urban and Cultural Planning for Cities and Regions*, Rockhampton, Qld.: Rural Social and Economic Research Centre, Central Queensland University, 1998.
21. Tony Dingle and Seamus O'Hanlon, 'From Manufacturing Zone to Lifestyle Precinct: Economic Restructuring and Social Change in Inner Melbourne 1971-2001', *Australian Economic History Review* 59.1 (2009): 52-69.
22. Susan Oakley, 'The Role of Urban Governance in Re-Constructing Place, Economic Function and Social Relations in Urban Waterfront Regeneration: The Case of Port Adelaide, South Australia', *Space and Polity* 11.3 (2007): 279-295.
23. Oakley, 'The Role of Urban Governance', p. 280.
24. Colin Mercer, cited in Stevenson, *Agendas in Place*, p. 110.
25. Ken Worpole, *Towns for People: Transforming Urban Life*, Buckingham: Open University Press, 1992.
26. Charles Landry, *The Creative City: A Toolkit for Urban Innovators*, Near Stroud, U.K.: Comedia, 2000, p. 173.

sumption and participation in the arts in a bounded geographical sense, but also the wider dissemination, exchange and therefore the notion of an arts infrastructure'.²⁷

Key to cultural planning are the roles of cultural development, democracy and citizenship. These roles are supported by Raymond Williams' anthropological notion of culture as a way of life. Rather than simply elite art or creative activities, culture as a way of life also embraces a wide range of popular cultural practices including cultural diversity such as multiculturalism.²⁸ In cultural policy studies, this definition of culture approaches urban governance as a civilising process – what Tony Bennett has importantly noted as the management of cultural resources to govern the social.²⁹ Cultural policy studies locate cultural institutions as key sites for facilitating the public sphere, engineering social conduct and remaking new identities.³⁰ They focus on the roles of planning and policy in cultivating competency, providing access and shaping subjectivity. This view of culture gained currency in the 1990s as a new approach to urban planning that intervenes in the strategies of place-making: as 'a comprehensive local government cultural policy for leisure, recreation, artistic and entertainment pursuits capable of achieving wide-ranging social objectives and considerably improving the "quality" of urban residential life'.³¹ Crucial here is how the civic role of the city is entwined with the cultural and social. As Deborah Stevenson suggests, the cultural revitalisation of cities is pivotal to the task of reviving local democracy and reconstructing a community identity; they provide the bases for civic redevelopment and the recreation of active citizenship.³²

Active citizenship is conceptualised in town planning theory as 'spatial citizenship', to refer to 'a framework in law and policy that guarantees the right of all citizens and communities to a minimum level of social and physical infrastructure, economic opportunities, environmental quality and political participation'.³³ In cultural policy studies, this concept is more generally referred to as 'cultural citizenship', as a process of how different groups make claims to their right to culture. Nick Stevenson argues that cultural understandings of citizenship are concerned not only with "'formal" processes, such as who is entitled to vote and the maintenance of an active civil society, but crucially with whose cultural practices are disrespected, marginalised, stereotyped and rendered invisible'.³⁴ Renato Rosaldo addresses dominant exclusion and subordinate aspirations to advocate the use of cultural expression as a claim to public rights and culture. Demanding disadvantaged subjects be given full citizenship, his 'right to be different' thesis emphasises the 'redistribution of resources' and a politics of 'rec-

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27. Graeme Evans, *Cultural Planning: An Urban Renaissance*, London: Routledge, 2001, p. 169.
28. Gay Hawkins, *From Nimbin to Mardi Gras: Constructing Community Arts*, St Leonards, N.S.W.: Allen & Unwin, 1993.
29. Tony Bennett, *Culture: A Reformer's Science*, London: Sage, 1998.
30. Bennett, *Culture*. See also Jim McGuigan, *Rethinking Cultural Policy*, Buckingham: Open University Press, 2004.
31. Stevenson, *Agendas in Place*, pp. 100-101.
32. Stevenson, *Agendas in Place*, pp. 100-101.
33. Gleeson and Low, *Australian Urban Planning*, p. 219.
34. Nick Stevenson, *Cultural Citizenship: Cosmopolitan Questions*, Maidenhead, Berkshire: Open University Press, 2003, p. 23.

ognition and responsiveness'.³⁵ While Rosaldo celebrates difference and critiques the status quo, Will Kymlicka points to how multiculturalism and cosmopolitanism can shape common culture and provide the capacity for autonomy.³⁶ As Aihwa Ong attests, cultural citizenship is shaped by 'negotiating the often ambivalent and contested relations with the state and its hegemonic forms that establish the criteria of belonging within a national population and territory'; it is also a dual process 'of self-making and being made in relation to nation-states and transnational processes'.³⁷ Cultural rights not only require new claims to representation, they also propagate a cultural identity and a lifestyle.³⁸

In cultural planning, active citizenship extends abstract theorisations on cultural citizenship to pragmatically consider how a society makes available material cultures in order to make social life meaningful to allow for recognition and respect. Brian Turner refers to this process as 'the capacity to participate effectively, creatively and successfully within a national culture'.³⁹ John Foote makes explicit this connection when he highlights how cultural citizenship 'refers to the points where cultural expression forms part of one's role as citizen such as identity, belonging, diversity, advocacy and different arenas of participation'.⁴⁰ Both scholars emphasise the centrality of cultural participation in the framing of policy and citizenship. Governments should not only give citizens 'both the provision of cultural facilities and the regulation of cultural industries';⁴¹ through service provision and cultural planning, they should also promote an embedded strategy that stresses the unique features of the place and the talent of its people.⁴²

The cultural planning approach to culture-led urban regeneration places the social and cultural at the heart of the physical planning process to incorporate cultural democracy and resource allocation that can reconcile the conflicting tensions between monopoly culture, spatial polarisation and community destruction. This approach expands the economic limitations to the value of culture; not only is the economic individualistic, the cultural is also

35. Renato Rosaldo, 'Cultural Citizenship, Inequality, and Multiculturalism', in Rodolfo D. Torres, Louis F. Miron and Jonathan Xavier Inda (eds.) *Race, Identity and Citizenship: A Reader*, Massachusetts: Blackwell, 1999, p. 255.

36. Will Kymlicka, *Multicultural Citizenship: A Liberal Theory of Minority Rights*, Oxford: Oxford University Press, 1995.

37. Aihwa Ong, 'Cultural Citizenship as Subject Making: Immigrants Negotiate Racial and Cultural Boundaries in the United States', in Rodolfo D. Torres, Louis F. Miron and Jonathan Xavier Inda (eds.) *Race, Identity and Citizenship: A Reader*, Massachusetts: Blackwell, 1999, pp. 262-264.

38. Jan Pakulski, 'Cultural Citizenship', *Citizenship Studies* 1.1 (1997): 80.

39. Brian Turner, 'Outline of a General Theory of Cultural Citizenship', in Nick Stevenson (ed.) *Culture and Citizenship*, London: Sage, 2002, p.12.

40. John A. Foote, 'The Changing Environments of Cultural Policy and Citizenship in Canada', in Caroline Andrew, Monica Gattinger, M. Sharon Jeannotte and Will Straw (eds.) *Accounting for Culture: Thinking through Cultural Citizenship*, Ottawa: University of Ottawa Press, 2005, p. 91.

41. David Chaney, 'Cosmopolitan Art and Cultural Citizenship', *Theory, Culture and Society* 19.2 (2002): 168.

42. Franco Bianchini and Jude Bloomfield, 'Urban Cultural Policies and the Development of Citizenship: Reflections on Contemporary European Experience', *Culture and Policy* 7.1 (1996): 85-113.

more collective.⁴³ It promotes cultural difference, protects cultural identities and provides the resources to encourage local vitality. It also emphasises cultural participation as an indicator for social inclusion and cohesion. The following will show how urban screens are key sites to critically consider the embodied interaction of cultural participation.

Cultural Participation: Embodied Interaction and Social Capital

In a report for UNESCO, Colin Mercer stresses the need to examine cultural indicators to better comprehend the new frameworks for cultural policy and its impact on cultural participation.⁴⁴ Cultural participation is considered a basic building block of cultural citizenship; it is 'a proxy for citizenship in the nation-state—or; increasingly global agency. It is a way of "measuring" the realization of cultural citizenship'.⁴⁵ In *Accounting for Culture: Thinking Through Cultural Citizenship*, the editors introduce cultural participation studies as a framework for bringing together statistical and conceptual tools to consider the inextricable relationship between cultural indicators and cultural citizenship.⁴⁶ They define cultural citizenship through the 'processes of participation' and the building of 'feelings of belonging and identity', and examine cultural citizenship as a site of tension between cultural participation, social capital and identity.⁴⁷

Cultural participation is a key indicator of the strength of a community and the efficacy of citizenship. Contingent upon capacity, competency and taste, it provides a critical pathway to problematise the connections of cultural citizenship to diversity, lifestyle, identity and ethical governance. As an umbrella term, it 'denote(s) activities of individuals and groups in the making and using of cultural products and processes'.⁴⁸ At its most basic, it means mapping access to cultural production, venues and services. Such mapping has been criticised for its failure to measure how simply 'using' can enhance 'deeper engagement', lack of longitudinal study, and inability to contextualise everyday culture as a process and not a product. Catherine Murray, however, highlights the importance of creative consumption as a process of mapping how 'identity and meaning is forged through consumption, and consumption transitions to expression'.⁴⁹ Expression is not simply about the basic right that people have to tell their stories; cultural participation, through expression, is a tool that people use to build their sense of attachment and connection to each other.

Urban screens are key sites for assessing the quality of cultural participation, especially when they are located in 'multi-public public spaces' where specific forms of expressions

43. David Throsby, 'The Relationship between Cultural and Economic Policy', *Culture and Policy* 8 (1997): 30.

44. Colin Mercer, *Towards Cultural Citizenship: Tools for Cultural Policy and Development*, Stockholm: SIDA, 2002.

45. Catherine Murray, 'Cultural Participation: A Fuzzy Cultural Policy Paradigm', in Caroline Andrew, Monica Gattinger, M. Sharon Jeannotte and Will Straw (eds.) *Accounting for Culture: Thinking through Cultural Citizenship*, Ottawa: University of Ottawa Press, 2005, p. 40.

46. Andrew, Gattinger, Jeannotte and Straw, *Accounting for Culture*.

47. Andrew, Gattinger, Jeannotte and Straw, *Accounting for Culture*, p. 4.

48. Murray, 'Cultural Participation', p. 32.

49. Murray, 'Cultural Participation', p. 34.

and practices can be nurtured and acknowledged.⁵⁰ In Melbourne, the government-owned Federation Square and its large screen are opened up to 'non-consumer' publics, such as young people who use the place as a meeting point, tourists who visit the main tourism information centre, or community groups who use the stage and the screen to celebrate cultural events. These types of new access rights through the provision of recreation and cultural space can potentially nurture new forms of expression such as screen art, live music and even new practices of 'hanging out' and sociality. As Australian urban geographer Kurt Iveson proffers, it puts the public back into the public sphere.⁵¹ Unique to the urban screen is its interactive capacity for cultivating cultural participation.

Interactivity can be defined as a type of feedback that provides the means to control and change information. As a form of "'suture" between ourselves and our machines', it creates an immersive environment that enhances the participants' sense of embodied interaction.⁵² In the context of urban screens and public space, this type of embodiment is critically theorised as 'cultural somatics', to refer to a combined approach 'which accounts for the imbrications of cultural specificity and context, corporeality, and our somatic involvement with technologies-in-use'.⁵³

Cultural somatics were evident in a Federation Square event on the morning of 13 February 2008, when 8,000 people gathered to watch the newly elected Prime Minister Kevin Rudd in Canberra deliver an historic apology to Australia's indigenous stolen generations.⁵⁴ Included in the crowd were activists, musicians, high school students and toddlers. When the opposition leader's speech was broadcast, most in the crowd, like those on television, turned their back to the screen. Tears were shed and shared, as was the standing ovation at the end of the speech. As the apology turned to healing, musicians began to perform on the stage in front of the screen. Mobile phone messages sent by the crowd appeared on the screen: 'Our ancestors can finally rest in peace'; 'Sorry it's taken so long to say sorry'; 'Let's enjoy this day and think about those who have suffered from Australia's shameful past'.⁵⁵

The live broadcasting of national events such as this marks the Square as a significant public space for consolidating the rituals of national life. Where domestic television technologies previously stitched together the private and public spheres, the medium-specifici-

50. Kurt Iveson, 'Putting the Public back into Public Space', *Urban Policy and Research* 16.1 (1998): 29.

51. Iveson, 'Putting the Public back into Public Space', 21-33.

52. Margaret Morse, *Virtualities: Television, Art, and Cyberculture*, Indianapolis: Indiana University Press, 1998, p. 16.

53. MacColl and Richardson, 'A Cultural Somatics of Mobile Media and Urban Screens', 100.

54. The term 'stolen generations' is used to refer to children of Australian Aboriginal and Torres Strait Islander descent who were taken away from their families by Australian government agencies and church missions during the periods between 1898 and the 1970s.

55. Matthew Burgess and Reko Rennie, 'Tears in Melbourne as PM Delivers Apology', 13 February, 2008, *The Age*, <http://www.theage.com.au/news/national/tears-in-melbourne/2008/02/13/1202760345721.html>

city of urban screens provides a new viewing platform to bring together and make visible the collective audience as a new community of public users. Its spatial specificity allows participants to be literally together and temporally in the now. It creates a co-location that structures group practices and shares in the sociality of face-to-face communication. At the Square, sentiments such as loss, relief and empowerment were collectively voiced and shared. People also referred to the 'atmosphere' of the place that added to feelings of national pride and optimism.⁵⁶

This urban circulation of bodies and technologies enables a new level of communication that enhances public expression and transforms spaces into social places of shared use. The public messaging function also makes urban screens a locative medium that cuts across actual and virtual forms of communication and information. They promote the immersion of embodied interaction that combines virtual and actual spaces with a community of peer users. By crossing platforms through mobile media convergence, the 'hybridized and networked'⁵⁷ structure of urban screens also disrupts the phenomenology of screen experience to create a mediated vision that is decentred, flexible and mobile. At once social, audio, visual, tactile and affective, this experience shapes the material conditions of the event to produce an embodied interaction that actively engages place, technology and the body in the performance of cultural citizenship.

While interactive experiences generated by urban screens are not new, what is crucial here is the capacity of interactivity to produce an engaged and embodied experience that can be collectively shared by its public community of users. In an evaluation of audience experience at Federation Square, Zafer Bilda examines how audiences engage with the experimental artwork of Ernest Edmonds' *Tango Tangle*, an aesthetic installation of computer-based screen art combining colour, light and sound.⁵⁸ Participants were required to interact with the screen, either through speaking or singing into a microphone to see how interaction influenced the screen aesthetics and ambience of the place. The aim was to consider how movements in sound and colour created a visual interface to direct the audience towards the environment of the public space. Of the less than 50 per cent of the invitees who participated, all immediately recognised the medium's interactivity, some chided its simplicity, and others were too self-conscious and preferred a more enclosed space such as an art gallery or a museum. A few participants, however, noted how their experiences were shaped by the ambient music and activity taking place around it, showing 'individual interactive experience may be enhanced by social or other types of interactions'.⁵⁹ Embodied interactions are clearly more successful in public contexts when there is a collective community of peer users that share in and add to the interactivity.

56. Burgess and Rennie, 'Tears in Melbourne as PM Delivers Apology'.

57. MacColl and Richardson, 'A Cultural Somatics of Mobile Media and Urban Screens', 109. Emphasis in original.

58. Zafer Bilda, 'Interactive Experience in Public Context: *Tango Tangle*', *Leonardo* 40.4 (2007): 364-365.

59. Bilda, 'Interactive Experience in Public Context', 365.

Urban screens are most effective when they constitute a public sphere created by 'the quality of people's "mediated" public connection'.⁶⁰ Nick Couldry defines the 'quality' of mediated public connection as the networks of social opportunities that become available from the public knowledge and information gained from cultural participation.⁶¹ Quality social networks are central to the cultures of citizenship because they show how connections and disconnections are shaped by the discourse of public knowledge and information. This type of cultural indicator shifts the numerical emphasis on evaluation *outputs* to a more nuanced understanding of broader *outcomes*. The quality of social networks elucidates the caliber of social capital indicative of individual and community wellbeing.

The social capital approach underpins studies in sociology, public policy, leisure and cultural participation. Originally a term coined by Pierre Bourdieu,⁶² the use of the concept has shifted from being an individual resource to an asset of communities and nations. It has been applied in different contexts '(a) as a source of social control; (b) as a source of family support; (c) as a source of benefits through extrafamilial networks'.⁶³ In recent years, this concept has gained popularity through the work of Robert Putnam on the decline of American community. Putnam defines social capital as 'social networks and the norms of reciprocity and trustworthiness that arise from them'.⁶⁴ In public policy studies, this approach has been used to assess the wellbeing of nations and communities.⁶⁵ Central to the social capital approach is that participation breeds social capital, and social capital builds trust and reciprocity, and cultivates social networks.

In *Accounting for Tastes*, Tony Bennett, Michael Emmison and John Frow examine Australian tastes, preferences and activities by analyzing the patterns of participation in cultural

60. Nick Couldry, 'Culture and Citizenship: The Missing Link', *European Journal of Cultural Studies* 9.3 (2006): 33.

61. Couldry, 'Culture and Citizenship'.

62. Pierre Bourdieu, 'The Forms of Capital', in J.G. Richardson (ed) *Handbook of Theory and Research for the Sociology of Education*, New York: Greenwood, 1986, p. 248.

63. Alejandro Portes, 'Social Capital: Its Origin and Applications in Modern Sociology', *Annual Review of Sociology* 24 (1998): 9.

64. Robert Putnam, *Bowling Alone: The Collapse and Revival of American Community*, New York: Simon and Schuster, 2000, p. 19.

65. See for examples, World Bank, *Social Capital: Measurement Tools*, <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/EXTTOSOCIALCAPITAL/0,,contentMDK:20193049~menuPK:418220~pagePK:148956~piPK:216618~theSitePK:401015,00.html>; C. Grootaert and T. van Bastelaer (eds.) *Understanding and Measuring Social Capital: A Multidisciplinary Tool for Practitioners*, Washington: The World Bank, 2002; OECD, *The Well-being of Nations: The Role of Human and Social Capital*, Paris: OECD Publishing, 2001. Available at: <http://www.oecd.org/els/pds/EDSMINDOCA003.pdf>; Australian Bureau of Statistics, *Social Capital and Social Wellbeing*, Canberra: Government of Australia, 2002; Australian Bureau of Statistics, *Australian Social Capital: Framework and Indicators*, Canberra: Government of Australia, 2004; Canada Policy Research Initiative, *Measurement of Social Capital: Reference Document for Public Policy Research, Development and Evaluation*, Ottawa: Government of Canada, 2005; Canada Policy Research Initiative, *Social Capital: Building on a Network-based Approach*, Ottawa: Government of Canada, 2003.

activities and practices, and the trends of consumption and choice.⁶⁶ The authors argue that economic capital and social capital play major roles in generating and reproducing class inequality, as well as transmitting an advantage to the next generation. They make the link between social and cultural capital by defining cultural capital as the skill in making cultural and social distinctions.⁶⁷ This capacity of cultural capital to measure social capital is also evident in Putnam's proposition that '(s)ocial capital is often a valuable by-product of cultural activities whose main purpose is purely aesthetic'.⁶⁸ Putnam's approach, like the authors in *Accounting for Tastes*, combines social and cultural capital as one approach. This combination has collective benefits because investments in cultural capital can lead to social cohesion. As M. Sharon Jeannotte states:

While cultural capital has traditionally been thought to contribute to 'bonding' social capital by reinforcing ideologies, values and social differences, and by strengthening ties between intimates, it may also play a role in 'bridging' social capital by promoting social solidarity (or commitment to a larger whole), social integration (or linkages between functional elements) and sustainable communities (patterns of social and spatial interaction distinguishing a collective).⁶⁹

Using cultural capital to consider the quality of social networks provides a new departure point to re-assess the economic framing of the arts. Louise Johnson, in a study of the regional city of Geelong in Australia, shows how the arts generate cultural capital that is embodied, objective and institutional, and how these interconnected values create not only economic viability, but also confidence, image, individual wellbeing and social cohesion.⁷⁰ Her use of cultural capital extends economic valuation to highlight the power relationships surrounding artistic production, circulation and valuation. Using a wide range of evaluation methodologies to qualify and quantify the value of the arts including statistical data on employment, investment and activity; a cultural database for the regional city; festival surveys that include interviews with people; focus group sessions and individual artists, her exemplary methodology shows the contribution of cultural capital to the social impact of the arts.

Existing studies of participation at resident-tourist precincts such as Federation Square are usually evaluated through the quality of urban tourism experience.⁷¹ This type of assessment does not consider the specificity of urban screens to engage a new mode of embodied interaction for cultural participation. Digital technologies and their web-embodied services

66. Tony Bennett, Michael Emmison and John Frow, *Accounting for Tastes: Australian Everyday Cultures*, Cambridge: Cambridge University Press, 1999.

67. Bennett, Emmison and Frow, *Accounting for Tastes*, p. 37.

68. Putnam, *Bowling Alone*, p. 411.

69. M. Sharon Jeannotte, 'Just Showing Up: Social and Cultural Capital in Everyday Life', in Caroline Andrew, Monica Gattinger, M. Sharon Jeannotte and Will Straw (eds.) *Accounting for Culture: Thinking through Cultural Citizenship*, Ottawa: University of Ottawa Press, 2005, p. 126.

70. Louise Johnson, 'Valuing the Arts: Theorising and Realising Cultural Capital in an Australian City', *Geographical Research* 44.3 (2006): 296-309.

71. Tony Griffin and Bruce Hayllar, 'Urban Tourism Precincts and the Experience of Place', *Journal of Hospitality Marketing and Management* 18 (2009): 127-153.

augment city experiences and offer new potentials for citizen participation in urban planning.⁷² This chapter has critically shown how cultural somatics and its approach to tangible computing provides a more dynamic framework to consider the changing forms of cultural citizenship as they interact with mobile media to rethink the socio-cultural boundaries between technology, body, community and place. It provides a new material base to further evaluate the social networks and cultural capital that form the necessary indicators to assess the quality of life in urban cities.

Conclusion

This chapter began by problematising the neoliberal claims to culture-led urban regeneration and argued that cultural planning is a key site to consider cultural citizenship. As the building block of cultural citizenship, urban screens' embodied interaction of cultural participation provides a new evaluative approach to assess the potential of social networks as new cultural indicators for improving the quality of life in contemporary urban cities. In a study on qualitative methods and the evaluation of community renewal programs in Australia, Bruce Judd and Bill Randolph provide a review of evaluation methods undertaken in the country's urban regeneration programs in the last ten years.⁷³ While quantitative methods are commonplace, they argue that a national evaluation methodology should also equally extend to qualitative evaluation methods. This chapter's proposal of cultural participation studies combines both quantitative and qualitative methods with a multi-method triangulated approach to maintain a balance between market-style social surveys and stakeholder interviews, contextual case studies, focus groups and action research. Framing these findings with the theoretical approach to social capital will produce outputs and outcomes on the impact of urban screens on social inclusion, cohesion and justice.

The explosion of urban screens has radically transformed the experience of the screen and the visual anthropology of space. The urban screen 'creates off-screen spaces' differently to produce 'a more dispersed experience of film'.⁷⁴ In the contemporary image culture between audience and image, consumer and product, citizenship and participation, urban screens are interfaces that intersect actual, virtual and mobile experiences to produce a whole new behavioural context that further engages actual and virtual space, information and people. From public messaging, screen art, and live broadcasting to urban commuting, these sites create a new regime of mobility that resembles the practice of 'cruising'. From leisurely car rides and postmodern flaneurs to the furtive encounters of public inti-

72. Takashi Matsumoto, Sho Hashimoto and Naohito Okude, 'The Embodied Web: Embodied Web-Services Interaction with an Umbrella for Augmented City Experiences', *Computer Animation and Virtual Worlds* 19 (2008): 49-66; Malgorzata Hanzl, 'Information Technology as a Tool for Public Participation in Urban Planning: A Review of Experiments and Potentials', *Design Studies* 28 (2007): 289-307.

73. Bruce Judd and Bill Randolph, 'Qualitative Methods and the Evaluation of Community Renewal Programs in Australia: Towards a National Framework', *Urban Policy and Research* 24.1 (2006): 97-114.

74. These conceptual ideas are similar to those created by the public screening of mobile cinema, in Michael Fitzhenry, 'China Art by Phone: Mobile Movies', *Visual Anthropology* 21 (2008): 203, 214.

macies, the practice of 'cruising'⁷⁵ is intrinsic to urban density. As this chapter has shown, urban screens materialise this experience of mobile intimacy that underpins contemporary cultural life. Its nomadic, decentred and flexible mode confronts norms and produces a peer community that makes public the public sphere as a transnational contact zone for global and local mediascapes, connections and identities.

75. Fitzhenry, 'China Art by Phone'.

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APPENDICES

AUTHOR BIOGRAPHIES

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Alice Arnold is a photographer, a filmmaker and an educator. The broad themes of her work revolve around visual perception and urban culture. Her portrait and reportage photography has been widely published and exhibited and she is the recipient of a NYFA Photography Fellowship. Her first film, *To Be Seen*, a documentary about street art, public space and the urban environment was broadcast in July 2006 on REEL/NY (WNET/PBS), screened at the Museum of Modern Art in October 2006 and is distributed by First Run Icarus Films. Her second film, *Teeth*, also distributed by First Run Icarus films, was premiered at the Museum of Modern Art's Documentary Fortnight, an annual showcase of nonfiction film and video (February 2008). In 2007 she was the recipient of a Fulbright Fellowship in Filmmaking (Hong Kong). Her fellowship project is a nonfiction film, *Electric Signs*, which is about signs and screens. In addition to making media, she also teaches media studies and media production and has taught at Hunter College (CUNY), Hollins University, Parsons, the College of Staten Island (CUNY) and Polytechnic University (Brooklyn).

Giselle Beiguelman is a new media artist and multimedia essayist who teaches Digital Culture at the Graduation Program in Communication and Semiotics of PUC-SP (São Paulo, Brazil). Her work includes the award-winning 'The Book after the Book' (1999), 'Content = No Cache' (2000), nominated for the Trace/ Alt-X New Media Competition, and 'Recycled' (2001). She has recently made art for mobile phones ('Wop Art', 2001) and art involving public-access and Internet-streaming for electronic billboards like 'Leste o Leste?' 'Egoscópio' (2002) and 'POétrica'. Beiguelman's work appears in numerous anthologies and guides devoted to digital arts including Yale University Library Research Guide for Mass Media and has been presented in international venues such as Net_Condition (ZKM, Germany), el final del eclipse (Fundación Telefonica, Madrid), Desk Topping – Computer Disasters (Smart Project Space, Amsterdam) and Arte/Cidade.

Liliana Bounegru comes from Romania where she did her BA in Communication and Public Relations. She recently graduated from the New Media and Digital Culture MA at the University of Amsterdam. She has been involved in a variety of New Media research projects, such as the Digital Methods Summer School organised by the Digital Methods

Initiative In Amsterdam. As a blogger she covered a few of the events organised by the Institute of Network Cultures, such as Wintercamp and The Society of the Query (2009).

Kate Brennan was appointed as the Chief Executive Officer of Fed Square Pty Ltd, Melbourne in July 2005. From 1998, she was the Chief Executive Officer of the Adelaide Festival Centre Trust and led a program of significant change and growth in that time. She was recently Vice President of the Australian Arts and Entertainment Industry Association, Deputy Chair of the Association for Asia Pacific Performing Arts Centres, a member of the South Australian Multi-Cultural and Ethnic and Affairs Commission, a South Australian Business Ambassador, and a Board member of the Leaders Institute of South Australia. She has had extensive involvement as project member and client in a range of capital infrastructure projects and was involved in the design and activity concepts for Federation Square. Her specific interests are on the idea of creative and collaborative cities and the role of cultural practice and cultural organisations in the lives of communities and cities.

Andreas Broeckmann is an art historian and curator who lives in Berlin and Dortmund. Founding Director of the new *U - Centre for Art and Creativity in Dortmund* and Artistic Director of ISEA2010RUHR, the *16th International Symposium on Electronic Art*. From 2000 to 2007, he was the Artistic Director of *transmediale - festival for art and digital culture berlin*, and from 2005 to 2007, one of three artistic directors of *TESLA - Laboratory for Arts and Media in Berlin*. From 1995 to 2000, he worked as a project manager at *V2_Organisation Rotterdam, Institute for the Unstable Media*. Broeckmann studied art history, sociology, and media studies in Germany and Britain. He holds a PhD in Art History from the University of East Anglia, Norwich/UK. In University courses, curatorial projects, and lectures, he deals with art, technology, digital culture, and an aesthetics of the machinic. He is currently working on a study about twentieth century machine art.

Uta Caspary, born in 1977, is a Berlin based art historian and architecture critic. From 1998-2004, she studied history of art, anthropology and German literature in Göttingen, Granada (Spain) and Berlin. After having worked as an architectural tour guide and as an editorial assistant at *Akademie der Künste* in Berlin she is currently writing her PhD on ornament in architecture since the 1980s. Her research focuses are architecture since the nineteenth century, orientalism, history and theory of ornament and Islamic art/architecture in Spain.

Sean Cubitt is Director of the Program in Media and Communications at the University of Melbourne and Honorary Professor of the University of Dundee. His publications include *Timeshift: On Video Culture*, *Videography: Video Media as Art and Culture*, *Digital Aesthetics*, *Simulation and Social Theory*, *The Cinema Effect* and *EcoMedia*. He is the series editor for Leonardo Books at MIT Press. His current research is on public screens and the transformation of public space, and on genealogies of digital light technologies.

Annet Dekker has been active in the field of media art since the mid-90s. Subjects of interest are the influence of new media, science and popular culture on art and vice versa. She worked eight years as curator, head of exhibitions and the artist in residence program at the Netherlands Media Art Institute in Amsterdam. In 2008, she received an intermedia-

tor's grant from Fonds BKVB to explore the impact of locative media art projects and urban screens on the experience of the city. At the moment, she is an independent curator and programme manager at Virtueel Platform. She is also writing her PhD at the Centre for Cultural Studies, Goldsmiths College, London: *Archeology of the Future*, strategies for documenting net art. As well she is involved in *Inside Movement Knowledge*, an interdisciplinary research project into new methods for the documentation, transmission and preservation of contemporary dance knowledge.

Ava Fatah gen. Schieck is a Registered Architect (Germany) with years of experience in practice. She is primarily interested in exploring the relation between media technologies, architectural space and social engagement in particular within the historic context. Ava is a senior research fellow within the Bartlett's Space group, UCL, and a senior teaching fellow for the MSc Adaptive Architecture and Computation course (leading the module embodied and embedded technologies). Her current research is into the use of location-based and responsive computing within the urban context (www.cityware.org.uk). Ava has lectured and published extensively on urban space and its transformation and acquisition through new media. With a background in design in historic context and virtual environments, she is instrumental in building a network of the key stakeholders addressing critical issues for delivering an integral implementation of the urban screens in the UK. Her most recent project 'SCREAM' has addressed various issues related to the implementation of Urban Screens in the UK, the project outcome has contributed positively to the Joint guidance on Large digital screens in public spaces from English Heritage and CABE, UK. (www.vr.ucl.ac.uk/projects/scream)

Mike Gibbons is Head of Live Sites and UK Coordination for the London Organising Committee of the Olympic and Paralympic Games. During the next four years, subject to London 2012 sponsor funding, and in partnership with the BBC and the relevant city, Gibbons and his team have to install large LED screens in urban centres across the United Kingdom as part of the programme to bring the Olympic Games in 2012 to as many people as possible. These screens will then be a legacy of the 2012 Games. Prior to joining LOCOG, Mike worked for the BBC for over thirty years, as well as running arts and education projects in media and music. He was previously Project Director, BBC Live Events where he set up a pilot project to establish what is now a network of nine Big Screens in the Public Space Broadcasting Project. This led to being part of the first Urban Screens Conference in Amsterdam 2005 and being Chair of Manchester Urban Screens Conference 2007. Other BBC work included staging major broadcast festivals and concerts, working on major projects such as The Queen's Golden Jubilee, Live 8 and Manchester Commonwealth Games 2002. Before that, Mike ran radio stations and was a TV & Radio Producer. He's still a working musician if he can ever find the time!

M. Hank Haeusler has worked in architectural practices in Germany, the United States and Australia, including Kauffmann Theillig & Partner, Transsolar Engineering and Murphy Jahn Architects. He finished his PhD at SIAL under the supervision of Professor Mark Burry in October 2007. His research focused on the design of a Spatial Dynamic Media System for an interactive spatial communication through a 3D light grid to design a content-driven

dynamic surface in real-time. From October 2008, his main focus has been on research as a postdoctoral fellow at the University of Technology Sydney where Haeusler continues his work in media and architecture. His recent publications include *Media Facades: History, Technology, Content* (AVEdition 2009) and *Chromatomorphic Architecture* (Jarvis 2009).

Bart Hoeve is currently active as a lecturer on Audiovisual Media and Interaction and as team coach for the Minor programme titled 'Content in Motion: Screen Cultures' at the Amsterdam university of Applied Sciences. At Utrecht School of Arts (HKU) he is teaching and coaching in Concept and Production, Motion Graphics and Animation (at the faculties of Image Media & Technology, Animation and Illustration Design). After completing the teacher training for drawing and dexterity in Nijmegen (in 1992), he graduated at the MA-isca in Hilversum (1996, IMT - HKU) and started his own production company Hoeve Productions. This one-man production company has made several media-products for broadcasters, company's and artists. Guerilla techniques, Urban Projection and MediaDesign are his favourite subjects.

Erkki Huhtamo is Professor of Media History and Theory at the University of California Los Angeles (UCLA), Department of Design Media Arts. He is a media archaeologist, writer and exhibition curator, and has written extensively on media archaeology and the media arts. His *Illusions in Motion, a history of the moving panorama and the diorama*, is forthcoming from the University of California Press in 2010. As a curator Professor Huhtamo has created many media art exhibitions, for example, the major project *Alien Intelligence* (KIASMA Museum of Contemporary Art, Helsinki, 2000). He has also served on numerous art exhibition and festival juries worldwide, including Siggraph, Ars Electronica and the Interactive Media Festival.

Karen Lancel utilises new media and performance in her artistic work that spreads across the public space and the Internet. She designs temporary zones, and concepts for meeting places. Lancel's work takes place in public spaces such as museums, theaters, train stations, squares, festivals, libraries, or airports. Here she inquires the changing perception of the public space. She explores the coping strategies involved in the experience of being (un)safe and isolated, and focuses on how these experiences are transformed into personal stories. In collaboration with her audience she gives this ongoing process a personal face to show both the horror and the beauty. She is also professor of the Interactive Media Environment, the MFA program of the Frank Mohr Institute Groningen. Lancel develops her artwork in collaboration with Hermen Maat, as the artist duo Lancelmaat.

Hermen Maat designs interactive installations and situations using different new media. In this context he researches the relation between individual identity and social context. His installations are based on the tension between the recognition and definition of boundaries of an own identity and the sharing of a collective space; the encounter with the other and where this boundary becomes fluid again. Maat studied at the Gerrit Rietveld Academy Amsterdam, and Jan van Eijck Academy Maastricht. He is professor of Media Art at the Minerva Academie Groningen, HKU Utrecht. Maat develops his artwork in collaboration with Karen Lancel (as Lancelmaat) where they create 'meeting places' in public spaces.

Meredith Martin is the Senior Research Associate on the 'Large Screens and the Transnational Public Sphere' project (2009-13) funded by the Australian Research Council. She completed her PhD entitled 'Palaces of the People: Culture and Reform in Britain from Empire to the European Union' in 2009. In it, she theorises the dialectic of spectacle and publicity in nineteenth-century and contemporary cultural centres in the UK. Dr. Martin has been a member of the Spatial Aesthetics research team at the University of Melbourne since 2004, and was previously the inaugural manager of the Media and Communications Program, University of Melbourne. Her curatorial practice includes two digital media exhibitions, *Liquid Aesthetics* at the Victorian Arts Centre, for the Midsumma Festival and *Elastic* for the Centre for Contemporary Photography in Melbourne.

Scott McQuire is a writer and academic in the School of Culture and Communication at the University of Melbourne, with a strong interest in interdisciplinary research linking the fields of new media, contemporary art, urbanism and critical social theory. Scott presented the keynote address at Urban Screens 2005 in Amsterdam and was one of the organisers of the Urban Screens: Mobile Publics conference in Melbourne in 2008. His most recent book is *The Media City: Media, Architecture and Urban Space* (Sage 2008).

Julia Nevárez obtained her Ph.D. in Environmental Psychology at the Graduate Centre of the City University of New York. She is currently Assistant Professor in the Sociology and Anthropology Department at Kean University, New Jersey. Her research focuses on urban studies, issues of representation, globalisation, urban development, public space and technoculture.

Sabine Niederer started her PhD research at the University of Amsterdam, Media Studies, New Media in 2008. She is the managing director of the Institute of Network Cultures, a new media research centre based at the Amsterdam University of Applied Sciences, School of Interactive Media. Before joining the INC in 2004, she worked as a producer and curator of international events on new media, arts and digital culture. In 2002 she earned her MA from Utrecht University, where she studied art history, and new media and digital culture. Sabine has taught media and design theory, publishes about new media, art and visual culture and is the curator of new media art project *Impakt Online*. As a researcher, she is affiliated with the Digital Methods Initiative.

Shirley Niemans worked at the Institute of Network Cultures as a researcher and co-editor for the *Society of the Query* conference (2009) and as the event producer of *Video Vortex* (2008), *New Network Theory* (2007) and *MyCreativity* (2006). After graduating from the KABK/Royal Conservatory of The Hague in 2002, she worked as a video and sound artist and has (co-)produced and curated events and art projects ranging from international new media expert meetings to art exhibitions in public space. Currently, she teaches Trend Analysis, coaches Interactive Media students and is a team coach for the minor program Content in Motion: Screen Cultures at the Amsterdam University of Applied Sciences. Lastly, she co-organises an art and research programme for the *Impakt Foundation* and is completing her MA in New Media and Digital Culture at Utrecht University.

Nikos Papastergiadis is Professor in the School of Culture and Communication at the University of Melbourne. Throughout his career Papastergiadis has provided strategic consultancies for government agencies on issues relating to cultural identity, and worked on collaborative project with artists and theorists of international repute, such as John Berger, Jimmie Durham and Sonya Boyce. His current research focuses on the investigation of the historical transformation of contemporary art and cultural institutions by digital technology. He has recently published *Spatial Aesthetics: Art, Place and the Everyday* (2006), which examines the new processes, contexts and relations through which contemporary art is produced.

Soh Yeong Roh studied socio-economics after graduating from the Chicago School of Economics. Her interest in the arts began when she accidentally landed on a job in the early 90's in an international exposition committee, where she was in charge of planning an art and technology exhibition. When Roh took the directorship of Walker Hill Art Centre (Seoul) in 1997, she steered it toward media arts. She became the director at Art Centre Nabi, which she founded in 2000. Roh is based in Seoul.

Saskia Sassen is the Lynd Professor of Sociology and Member, The Committee on Global Thought, at Columbia University. Her most recent books are *Territory, Authority, Rights: From Medieval to Global Assemblages* (Princeton University Press 2008) and *A Sociology of Globalization* (Norton 2007). She has also recently completed a five-year project for UNESCO on sustainable human settlement based on a network of researchers and activists in over 30 countries; it is published as one of the volumes of the *Encyclopedia of Life Support Systems* (Oxford, UK: EOLSS Publishers). Her books are translated into nineteen languages and her commentary has appeared in *The Guardian*, *The New York Times*, *Open Democracy.net*, *Le Monde Diplomatique*, the *International Herald Tribune*, *Newsweek International*, *The Huffington Post* the *Financial Times*, among others.

Leon van Schaik AO, LFRAIA, RIBA, PhD, is Professor of Architecture (Innovation Chair) at RMIT, from which base he has promoted local and international architectural culture through practice-based research. Writings include monographs compiled on Edmond and Corrigan, Ushida Findlay, Guilford Bell, Tom Kovac, *Poetics in Architecture*, *The Guthrie Pavilion*, *The Practice of Practice*, and Sean Godsell (*Electa* 2005/6). His latest books (John Wiley and Sons) are *Mastering Architecture* (2006) *Design City Melbourne* (2007) and *Spatial Intelligence: New Futures for Architecture* (2008). His next book (Routledge 2010), with Geoffrey London and Beth George, is *Procuring Innovative Architecture*.

Jan Schuijren, born 1964, lives and works as freelance curator in Amsterdam. He studied sociology and did his postgraduate studies in New Media. From 1992 to 2001, he worked with the Netherlands Media Art Institute, Montevideo/Time Based Arts where he was responsible for international exhibition presentations and the distribution of the video collection. Since 2002, he has been working as an independent curator in the field of visual arts, specifically the moving image, conceiving and presenting international exhibition projects as well as film and videoprograms. In 2007, he developed the concept for CASZ – contemporary art screen Zuidas – and since October 2007 he has been curating the ongoing pro-

gram of film and video works and events for this 40m urban screen located on Zuidplein in Zuidas, Amsterdam, presenting moving images in public space 18 hours a day, 365 days a year. Currently, he is developing the concept for a structure that regularly will intervene with art projects over the course of the ten-year urban development taking place of the former Philips-terrain Strijp S in Eindhoven, the Netherlands.

Audrey Yue is Lecturer in Cultural Studies at the University of Melbourne in Australia. She is co-editor of *Mobile Cultures: New Media in Queer Asia* (2003) and *AsiaPacifiQueer: Re-thinking Genders and Sexualities* (2007). Her current book projects include *Queer Asian Migration in Australia* and *Sexuality and the Creative City in Singapore*. She is also a Chief Investigator in a collaborative research project on Asian Australian Cinema: History, Policy, Representation. She is a member of the Australia Research Council funded Cultural Research Network and Asia Pacific Futures Network. She is also a co-convenor of AsiaPacifiQueer, an international network of scholars researching on genders and sexualities in the Asia Pacific region. Her research interests include: Asian Australia cinema and sexualities; cultural policies and creative industries in Asia; and Hong Kong cinema. She is an editorial board member of *Metro screen magazine*, *Feminist Media Studies* and *Journal of Chinese Cinemas*.

URBAN SCREENS Reader

EDITED BY **SCOTT MCQUIRE, MEREDITH MARTIN**
AND **SABINE NIEDERER**

INC READER #5

The *Urban Screens Reader* is the first book to focus entirely on the topic of urban screens. In assembling contributions from a range of leading theorists, in conjunction with a series of case studies dealing with artists' projects and screen operators' and curators' experiences, the reader offers a rich resource for those interested in the intersections between digital media, cultural practices and urban space.

Urban Screens have emerged as a key site in contemporary struggles over public culture and public space. They form a strategic junction in debates over the relation between technological innovation, the digital economy, and the formation of new cultural practices in contemporary cities. How should we conceptualize public participation in relation to urban screens? Are 'the public' citizens, consumers, producers, or something else? Where is the public located? When a screen is erected in public space, who has access to it and control over it? What are the appropriate forms of urban planning, design and governance? How do urban screens affect cultural experiences?

Contributors: Simone Arcagni, Alice Arnold, Giselle Beiguelman, Liliana Bounegru, Kate Brennan, Andreas Broeckmann, Uta Caspary, Sean Cubitt, Annet Dekker, Jason Eppink, Ava Fatah gen. Schieck, Mike Gibbons, M. Hank Haeusler, Bart Hoeve, Erkki Huhtamo, Karen Lancel, Hermen Maat, Meredith Martin, Scott McQuire, Julia Nevárez, Sabine Niederer, Shirley Niemans, Nikos Papastergiadis, Soh Yeong Roh, Saskia Sassen, Leon van Schaik, Jan Schuijren, Audrey Yue.

Institute of Network Cultures, 2009

ISBN 978-90-78146-10-0

**institute of
network cultures**


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