

-instants

• ٠ A Graduate Journal of Communication Spring 2008 • 1(1) • ISSN 1916-5897 • www.streamjournal.org



A Graduate Journal of Communication

Stream: Culture/Politics/Technology is a peer-reviewed, open-access e-journal published by the Communication Graduate Student Caucus at Simon Fraser University.

This new journal provides a unique, national forum for emerging Canadian researchers. Encompassing communication studies approaches to the often overlapping "streams" of culture, politics and technology, *Stream* challenges conceptions of these subjects with innovative, interdisciplinary scholarship.

Visit www.streamjournal.org for more information.

Submit to Stream

Stream is interested in publishing articles and book reviews by Canadian graduate students in communication studies and related fields. Papers should fit into one of the three proposed "streams," but we invite contributors to challenge their conceptions of these subjects with interdisciplinary approaches to these subject areas. We hope that this student initiative will become a space for graduate students to publish new work and expand upon new ideas, contributing to a thriving graduate intellectual culture.

Visit www.streamjournal.org for full author guidelines and register to submit a paper.

Become a Peer-reviewer

Register at www.streamjournal.org and enter yourself into our database of graduate student reviewers.

Stream and Creative Commons

Stream supports and strives to integrate the ideals of the creative commons and copyleft movements at every possible level.

To that end, journal articles are immediately freely available to the public, released under a Creative Commons Attribution–Noncommercial– No derivative works licence. Furthermore, they may be reproduced and distributed freely for noncommercial uses if the author is identified and nothing is changed.

Consider including *Stream* articles in your students' courseware packages.



The Urban Square: Remediating Public Space

Danielle Wiley

In recent urban theory, many critics contend that, as Western societies become more individualized, public space in the contemporary city loses vitality. As cities become more culturally and ethnically diverse, the symbolic power of public space is fractured. As urban life becomes dispersed across the multiple spheres of work, home, consumption, and leisure, public space is undermined as a focal point for community. Confronted with the internet as an "ultimate" public domain, physical public space faces obsolescence.

One counterargument is that these critiques diagnose public spaces within an outdated conceptual framework and thus fail to recognize the new forms of public space in the contemporary city. This position posits that urban public space might be preserved or restored as, first, a symbolic expression of the diversity of urban life and, second, an effective site of social communication. This view maintains, nonetheless, that contemporary socio-cultural, political, and economic dynamics challenge the modern conception of public space in particular ways: Where is public space located, physically and psychologically? How is it accessed and used by different stakeholders? How is it realized, administered and controlled? What symbolic meanings does it contain? Finally, how are these functions and meanings materialized spatially?

In my discussion of public space in the contemporary city, I will concentrate primarily on urban squares and public marketplaces, as well as on Internet-based public spaces that might fulfill some of the same roles. I refer to the so-called ordinary spaces of the outdoor square and marketplace as "physical public spaces" and to web spaces as "digital space." Both of these terms are problematic. On the one hand, digital space does have a physical infrastructure and a material existence in computers and networks. On the other, the "ordinary" space of the city is no longer wholly autonomous from the digital realm. While I have adopted these somewhat artificial terms for the purpose of clarity, I hope to show that these two orders of public space are radically integrated and may indeed constitute one heterogeneous order.

I will group the many challenges facing physical public space into three categories: the revaluation of the subject and the consequent transformation of the "public" as the primary occupants of public space; the morphological changes in urban spaces in light of social trends at local and global scales;



and the impace of digital space and digital technologies on the built environment. These categories are neither comprehensive nor mutually discrete; in fact, they inevitably interconnect.

First, I argue that conceptions of the subject, as the occupant, user and consumer of the city, have transformed to the extent that public space must respond – and is responding – to changed perceptions of the body and identity. Changed notions of the individual are closely paralleled by revaluations of the meanings of collectivity and community. Public space must accommodate not only multiculturalism, but also self-identifying communities bound by affinity, rather than by background or proximity. Second, public space must adapt to the current spatial re-organization of the city if that space is to remain an effective site for community formation and expression. Third, the digital environment exerts new pressures on physical public space. Many new possibilities are offered by digital space – among them, the capacity for remote persons to meet, the variety of modes of interaction and information exchange, the flexibility of digital forums to adjust their form and content according to user interests, the apparent ability to collapse space and manipulate time, and the malleability of digital space itself. Each of these qualities of digital space changes our expectations of physical public space. Finally, emerging digital technologies are becoming new infrastructural systems in public space. These connective infrastructures re-create some of the pliancy and responsiveness that have been ascribed to the digital realm.

The Subject and the Public

Although underplayed in the often meta-theoretical approaches of contemporary urban theory, the question of the subject is critical to an inquiry into public space. It would be an understatement to say that, over the past several decades, the notion of the subject has been highly scrutinized in feminist theory, post-structural philosophy and cultural theory, historiography, film, and literature. So while the role of the subject in the *public sphere* is a prominent point of discourse in many artistic and academic fields, the implications of these revalorizations of subjectivity for *public space* remains under-considered in the field of urban design. I will take the subject as a starting point in order to consider "who" is to be accommodated in our transforming cities, and "who" must find expression in public space. William Gibson (1998) writes in "Cyborg Civics":

For millennia, architects have been concerned with skinbounded body and its immediate sensory environment –with providing shelter, warmth and safety, with casting light on the surfaces that surround it, with creating conditions for conversation and music, with orchestrating the touch of hard and soft and rough and smooth materials, and with breezes and scents ... [N]ow [architects] must contemplate electronically augmented, reconfigurable, virtual bodies that can sense and act at a distance, but that also remain partially anchored in their immediate surroundings. (p. 173)

Gibson's subject, an early theorization of the "digital native," points to an increasingly complex relationship between the individual and the built environment. This subject's immediate surroundings includes not only the walls of room, but also the website she might be visiting, the Blackberry that connects her to the environment of whomever she is texting, and the aural environment of her iPod. The ideal conditions for private conversation or public discourse may now have little to do with proximity or place-boundedness.

In *Me*++, architectural philosopher W.J.T. Mitchell (2003) further rethinks the subject in the context of architecture and urbanism. Resonant with Gibson's description of the subject, Mitchell's "I" relates to the external world through multiple skins, which are expanded zones that define places and containers. The natural skin "is just layer zero of a nested boundary structure" (p. 7). From this layer, an individual adds further skins of sunscreen, clothing as soft architecture, a carapace of walls that encloses a room, a building with a weatherproof shell, and a bulwark of high-tech military security that encases a homeland. By de-familiarizing the individual's regular interactions with the built environment, such as the use of clothes to mitigate weather, Mitchell suggests that a blurring of boundaries between the person and the environment through the use of emerging technologies is a natural extension of a subject who was "never" autonomous. The difference in the contemporary subject is the degree to which she is entwined with her environment.

> Crossing the various boundaries that surround me there are paths, pipes, wires and other channels that spatially concentrate inflows and outflows of people, other living creatures, discrete goods, gases and fluids, energy, information and money. I am inextricably entangled in the networks of my air, water, waste disposal, energy, transportation, and Internet service providers. (p. 08)

Doors, traffic signals, routers and switches all determine who or what can pass from one place to another. As we seek to control and effect transfers of

people, objects and information, we construct, and constrain one another's environments.

Between the subject and the environment is not a line, but an active, reciprocal territory. The distinction between the organic and the technological dissolves, or becomes entirely irrelevant. Before Mitchell, feminist scholar and biologist Donna Haraway also advocated for a positive dissolution of the traditional dualisms of nature/culture and human/machine. For Haraway, the re-imagining of the subject as a cyborg, an organic and technological hybrid, offers new possibilities (and dangers) for human experience. Cyborgs, like Mitchell's "I," are interconnected with a technologically permeated environment: "The home, workplace, market, public arena, the body itself – all can be dispersed and interfaced in nearly infinite, polymorphous ways … The cyborg is a kind of disassembled and reassembled, postmodern collective and personal self" (1991, p. 163). By embracing our status as contradictory, partial and strategic subjects, Haraway argues that we can reconstruct the boundaries of daily life, in partial connection with others, and through heterogeneous communication.

If this hybrid, partial subject is not simply a theoretical construct but in fact connects with everyday experience, then new demands might be made of public space. What kind of public space can accommodate a technologically expanded subject or a partially assembled collectivity? Mitchell's and Haraway's depictions of the individual's social relationships deny the possibility of a cohesive public sphere. This recognition of an inherent heterogeneity in the public sphere makes a demand of public space – that is, that it should accommodate and make visible differences in power, identities and means of expression. Useful to a consideration of "who" public space serves is sociologist Nancy Fraser's model of dominant publics and subaltern counterpublics, each of which construct their identity through overlapping political interests, affinities and expressive modes (1992).

Traditionally, public squares aimed to achieve precisely the opposite, that is, the appearance of a homogenous, unified social space. Historic squares, from the grand Trafalgar Square in London to the more diminutive Piazza del Popolo in Rome, create the image of a coherent, legitimate and controlled communal forum (figure 1). These monumental spaces use precise architectural languages to invoke external notions of divinity and thus reinforce the power of a local authority over a community (Ockman, 1996). Modernist North-American squares, such as the TD Centre Square and Nathan Philips Square in Toronto, drew on similar formal strategies, arguably with the similar effect of buttressing current societal power relations, in this case, of private capital over an urban (ostensibly male, white, middle class) public (Ockman, 1996). Often these public spaces were defined by the modernist grid, simultaneously an organizing principle and a symbol, which inscribed the mechanistic growth of the twentieth-century city as a progressive erasure of an organic, historic urban fabric (Agrest, 1996). Also common to many historic European and modern North American squares was the use of symbolic architectural elements to create a metonym for a precinct or for the city as a whole. The non-profit organization Project for Public Spaces (PPS), inspired by planner William Whyte, argues for the continued importance of a readily discernible, singular image of a public space:

Historically, squares were the center of communities, and they traditionally helped shape the identity of entire cities. Sometimes a fountain was used to give the square a strong image: Think of the majestic Trevi Fountain in Rome or the Swann Fountain in Philadelphia's Logan Circle. The image of many squares was closely tied to the great civic buildings located nearby, such as cathedrals, city halls, or libraries. Today, creating a square that becomes the most significant place in a city – that gives identity to whole communities – is a huge challenge, but meeting this challenge is absolutely necessary if great civic squares are to return. (PPS, 2006, ¶ 2)

While sympathetic to the wish to defend the enduring importance of the public square, I question whether the "great civic squares" – which, as the PPS defines them, are defined by central monuments that symbolize institutional power – are the appropriate form for new public spaces in the city. This architectural language is bound up in a politics and topology that may no longer be desirable, or at least bears scrutiny. Moreover, this typology of square was conceived in relation to notions of subjectivity and collectivity that may no longer be credible. As architectural theorist Lebbeus Woods writes,

when society can no longer define itself in classically deterministic objective terms, but only in terms of continuously shifting, dynamic fields of activity, then architecture must forsake the monumental, because there is ... no fixed authority or its body of knowledge external to human experience to codify. (1997, p. 15)

Woods advocates the development of new forms for public space that, enhanced by new technologies, will address diverse, multilayered societies, or "heterarchies."

Before exploring the possible kind of public square that could respond to a heterarchical public sphere, I want to reflect on the role of existing, historic public squares in the contemporary city as these seem, to me, to be a productive ground between the opposing positions of the PPS and Lebbeus Woods. Even if historic and modernist squares are rejected as a model for new public spaces, they do still remain in cities and must be reckoned with. Many thrive as vibrant urban places that are integral to the fabric of the contemporary city. I want to suggest that they can be used in new ways and, in some cases, may even anticipate future directions of urban space.

The Porta Portese Market in Rome, Italy, is a unique example of a public space that straddles medieval and modern portions of the city. The Sunday morning market, entered through Porta Portese, a 17th century gate in the ancient Aurelian wall, appropriates streets and squares between post-wwii modernist housing blocks (figure 2). The weekly market is one of the few modern public spaces in the historic city, having grown out of the postwar black market economy. When in 1943 the main avenues into Rome were bombed and blockaded, a spontaneous group of black market *carrieri* materialized, running private cars with contraband food and goods into the city (Consiglio, 1965, p. 13). Today, most clothing stalls along Viale Portuense are managed by recent immigrants from North Africa and India who have limited access to the legitimate economy. Along Via Ippolito Nievo, a recent wave of Chinese vendors selling home electronics and digital novelties reflects Italy's new political relations with China. Despite the Romans' reputed xenophobia, the market is frequented by locals and foreigners alike and is considered an unofficial institution in Rome.

I argue that the market is a precedent for the "heterarchical" public space that Woods describes. The shifting demographics, activities, wares and territorial boundaries in the Porta Portese Market describe a facet of the city's evolving identity. The market is a "loose" space – that is, relatively self-organizing and highly adaptive (Franck & Stevens, 2001). The market might serve as a vernacular precedent for the kind of "event space" that is *de rigeur* in contemporary architectural theory and practice. More deftly than a formal piazza, the market responds to changes in the city's cultural, political and economic conditions.

Intrinsic to the market's long-term adaptability is its integration of technologies throughout its history. I do not simply mean that the type of wares has evolved from books to stereos. The use of technologies as public infrastructure – from the extension of the public transit system, to the integration of water and electrical utilities for vendors, to the permeation of digital communications technologies – has altered the market's boundaries.



Figure 1 (right) Piazza del Popolo in Rome. Photo by author.

Figure 2 (below) Porta Portese Market in Rome. Photo by author.



Like most consumer spaces, the Porta Portese Market has become increasingly connected to a broader economic system and its scale of operations has escalated. (Differential access to this wider market is apparent in the wide divide between the stalls of the licensed vendors, the *de facto* establishment of the market, and the unlicensed hawkers who are often illegal aliens). Significantly, the market has also been doubled on the internet. The Porta Portese website, www.portaportese.com, is loosely affiliated with the physical market, with some vendors operating in both sites, but with the opportunities for individuals to sell goods, exchange information and participate in the market in different ways.

The comparison between the Porta Portese Market and historic and modern squares is somewhat limited by the fact that the market is not a designed public "place." However, I argue that the market exhibits qualities from which new public spaces might take cues, such as a heterogeneity of actors and a pliancy of form, both of which are technologically enhanced. Moreover, the market offers a precedent for an emergent characteristic of public space in the contemporary city – a slippage of location, which is not a placelessness, but rather a flexibility of site or a multi-locationality.

Transformation of the City

A second category of considerations for contemporary public space relates to social transformations occurring at a trans-urban, or in some cases global, level, which resonate in the individual, lived experience of urban space. Contemporary theorizations of urban space, including the works of Saskia Sassen and Castells, often start from this macroscopic perspective, looking first at socio-economic trends in the transnational networks of cities, and then positing implications for localized public spaces. Castells's model of the contemporary city centres on two interconnected morphological systems, the global and the local (2004, p. 85). For Castells, the "global city" is a new spatial form, comprised of discrete segments of many cities electronically linked into an economic, communicative network. He calls this formation of global networks "the space of flows." The ability of a city to participate in global space depends on its level of connectivity in economic, communication, transportation and human resource networks. Because the nodes within a city or system of cities which are most connected to the global network will continue to receive the highest investment while other areas are passed over, the contemporary city experiences simultaneous, oppositional forces of concentration and dispersion. Where Castells's model of the globallocal city remains very general, urban geographer Mike Crang describes how this urban space might be understood and experienced at the level of the individual:

Imagine taking a flat map of the city or several cities. Instead of drawing network or communication links between sectors imagine this as a foreshortening of distance – changing relative proximity. We might then imagine this as bringing two points together by bending and folding the map. Or think of it as reassembling parts of a city in new configurations where location responds to different co-ordinates than the physical city. But of course, this is happening with many different sites in many directions at once ... and for each individual their personal experience may be very different – by preference, by regulation, by income or by ability. (2004, p. 306)

Folded into the space of flows is the domain of local urban life. The spatial form of the dispersed global city is also repeated at a local scale in North American cities, as they become a nodal system of neighbourhoods of varying density and constitution. In a nodal city, the nature of connective infrastructures becomes critical to the success of individual districts and of the urban system as a whole. Many Canadian cities, including Vancouver, Ottawa, and Toronto are struggling to define their position regarding the expansion and diversification of public transportation and arterial road systems, as these connective infrastructures will inevitably set the course of their future growth. The increasing mobility between nodes in a city (and between cities) reinforces and consolidates the spatial organization of local and global networks that Castells describes. At the same time, our increasing mobility consolidates these global and local nodal systems. Urban dwellers commute longer distances, work online from home part time, cross the city for work and leisure, and travel more (around the metropolitan region and the world), all the while upholding personal and professional relations through mobile connectivity.

This reorganization of city impacts the location and function of urban public space. In a nodal city, the integration of public spaces into the circulation and transportation of the city becomes even more important to their viability. Kathy Madden (2006) of the PPS attributes the success of Portland's Pioneer Courthouse Square to its integration with the city's public transportation infrastructure. In rating the square among the world's best, she writes:

> Known affectionately as "Portland's Living Room," its creation cannot be separated from the fundamental role played by Tri-Met, the city's transit agency. Planned concurrently and seamlessly integrated with the Metropolitan

Area Express (MAX) light rail system, the Square's role as transit hub makes it the nerve center of downtown Portland. (Pioneer Courthouse Square section, \P 2)

But transportation infrastructure cuts two ways, as arterial routes can easily overwhelm and sever pedestrian-scale spaces. In the Quartier International in Montreal, public space is being used as a means to recuperate a district that is spliced by the sunken Villa-Marie expressway. With a series of squares, pedestrian paths and distinctive street furniture within an 80 000 square-metre area, a consortium of architects, Daoust LeStage and Provencher Roy Associates, have aimed to create a vibrant system of public space that can reintegrate the north and south districts and develop a stronger sense of identity.

In addition to re-evaluating the connections between public spaces and transportation infrastructures, cities are integrating communications networks as further strata of connective infrastructure. Digitally based infrastructures, such as wireless local area networks (WLANS), remote surveillance and centrally coordinated digital signage systems, are critical adaptations of local/global cities. Our experience of urban space becomes more highly mediated by interactions with electronic information and communication infrastructure. Castells notes that "cities … are transformed by the interface between electronic communication and physical interaction, by the combination of networks and places … Our cities are made up, at the same time, of flows and places, and of their relationships" (2004, p. 85). The physical city is infiltrated by the so-called virtual realm.

Perhaps the most critical lesson to be learned from the digital medium, and particularly the internet, is a strategy of connectivity in the contemporary city – in which a redundancy of consistent, effective, and multiple paths connects an array of public places. In an ironic inversion, as the physical environment becomes more fragmented and dispersed, our virtual connections become more solid, continuous and reliable. Mitchell describes the evolution of his online world which once seemed ephemeral but,

has become increasingly persistent, interconnected and unified; it's there again, pretty much as I left it, whenever I log in again from a new location. The constants of my world are no longer provided by a contiguous home turf: increasingly my sense of continuity and belonging derives from being electronically networked to widely scattered people and place I care about. (2003, p. 17)

Of course, the virtual realm is not so virtual at all, as it depends on robust physical infrastructures and is manifested materially in all sorts of ways and locations, from Blackberries to ATMs. The folded map that Mike Crang described as a model of the global-local city operates, in part, through personal connectivity devices. Each of these digital "materializations" expands the built environment in which we live and breaches the boundaries of public spaces. Through the "stretchabilty of urban space, realized through electronic media," we recompose our worlds on a day-to-day basis (Crang, 2000, p. 303). Through our prosthetics, we connect distant places and occupy them simultaneously, but differentially. A woman passing you on the sidewalk talks on her mobile phone; she projects herself into the space of her conversation and yet she meets your eye. As Mitchell and Haraway imply, mediated communication, or tele-presence, problematizes both the unified, self-present subject and a conventional understanding of the urban environment as place-bound. In the context of a hybrid subject, equipped with prosthetic devices and technological skins, the form of a given public space cannot be understood as it once was. "Prosthetic sociality" implies new definitions of space, volume, surface and distance.

Convergence of Urban and Digital Spaces

As I've already suggested, a third category of concerns in revaluating public space arises from the reciprocal relationship between digital technologies and public space. The permeation of new technologies in the built environment not only influences how we perceive and make use of existing spaces, it also has a profound impact on how spaces are designed and constructed. Anton Picon (2004) discusses the effect of digital technologies on the design process, the material form of architecture and, by extension, the urban fabric of contemporary cities. In "Architecture and the Virtual," he considers the common complaint within the discipline that digital design is responsible for a conceptual dematerialization of architecture, and that the resulting built spaces lack a tectonic and material sensibility. Picon argues, however, that the impact of the computer is a reshaping of, not an estrangement from, the material experience of physical spaces. We experience the environment through the lens of technologies.

The computer changes our notion of space and the status of our bodies. From a designer's perspective, digitization allows for the generation of more complex spatial forms as well as more freedom to manipulate them. At the same time, the computer breaks the immediacy in the gesture of the drawing hand. Picon argues that the computer and its software, which both emancipate and constrain the architect with their inherent operational modes and preferences, constitute a kind of "thickness" between hand and design

space. This technological "thickness" is analogous to the boundary skins described by W.J.T. Mitchell, which mediate between the body and the environment. I think that it is important to consider that the transformation of our experience of the world by means of the computer applies not only to Picon's architectural designer, but to all of us. Picon uses the familiar example of the driver-car hybrid who, in the decades following wwII, became a generator of new forms of space, oriented to speed and acceleration. The scale and form of the modern urban skyline was conceived, in part, to address a mobilized view from the freeway. The everyday use of the car has changed our notions of urban form, distance, and our own bodies as simultaneously empowered and vulnerable. Picon argues that the hybrid designer-computer, loosely analogous to the driver-car, also responds to new modes of perception and thus generates new spatial forms:

> Whereas the architect previously manipulated static forms, now she or he can play with geometric flows. Surface and volumetric deformations acquire a new kind of evidence unavailable to traditional graphic means of representation. They can indeed be generated and followed in real time on the screen ... The evidence acquired by geometric flows may account for the multiplication of (built) projects that look like fluid surfaces. For example, Reiser + Umemoto's "West Side Convergence" [figure 3] appears as a geometric flow that has been frozen into architecture. (2004, p. 117)

The digital space in which the architect works is multidimensional, flowing in all directions. The digital medium and, by extension, digitally designed forms are temporally reversible, at least in appearance. Picon points out that the infinite variability of digital forms presents a difficult temptation for the designer who must make choices, who must break with this reversibility in order to realize a built project. Yet the indeterminacy of the digital design process may also influence the nature of spaces that are actually built.

I argue that a taste for indeterminacy has crept into many recent works of architecture, and especially public spaces. Yonge–Dundas Square in Toronto, completed in 2004, for example, shows concerns for heterogeneity, connectivity and indeterminacy (figure 4). The square is sited at a major urban intersection and also serves as a primary entrance for the Yonge Street subway station. The square is organized by flexible infrastructural systems, rather than formal architectural elements such as an institutional façade or central monument. In Y–D Square, the use of digital technologies as an adaptable, multifunctional infrastructural system facilitates the development of diverse programs for the public space. The square incorporates peripheral multimedia towers, demountable staging and lighting masts, and extensive water and power access points. These "invisible" amenities are distributed through the space to easily accommodate various occupant configurations, whether as an outdoor market, film and concert venue or a water park (figure 5). The City of Toronto recently established the downtown core, including Y–D Square, as a public wireless access zone. Y–D Square is typical of a new genre of urban squares that are designed to loosely accommodate multiple, even unforeseeable, "inhabitations."

At the same time, Y–D Square is a point of controversy among city residents and the local design community. Critics argue that the predominance of multistorey LED screens essentially converts the public space into a corporate advertising conduit. The space, though, has demonstrated its potential to accommodate other functions. To comply with the City of



Westside Convergence, by Reiser + Umemoto Architects. Photo courtesy Reiser + Umemoto Architects.







Figure 4 (top) Y–D Square in Toronto. Photo courtesy Y–D Square. **Figure 5 (above)** Y–D Square, marketplace. Photo courtesy Y–D Square. Toronto's art program, the screens also display video art by local artists – albeit only two minutes per hour – and the square was once converted into an urban beach when an artist appropriated the twenty computer-programmable water points. Nonetheless, Y–D Square shows that the architectural approach of designing public squares as indeterminate and flexible spaces is no more neutral than were the monumental designs of Piazza del Popolo and TD Square. Where a public space is designed to be "open," it may in fact be most readily available to dominant stakeholders whose interests will control its use and its image.

Despite these risks, the concept of indeterminate or so-called "event" space remains alluring to contemporary architects, who seem increasingly hesitant to fix urban public spaces through the use of overtly formal architectural strategies, as in historic Western squares. Y–D Square must be read within the context of recent architectural and urban design theory, in which urban space is conceived as a transforming milieu of occupancies and events. In "The Future of Space," philosopher Elizabeth Grosz writes:

This kind of space could no longer be considered static, infinitely extended, smooth, regular, amenable to gridding, to coordinates, to geometric division, the kind of space one can leave behind and return to intact, independent of what has occurred there. (2001, p. 3)

Here, urban space is polyvalent; it is shaped by complex potentialities; it is oriented to psychical connectivity rather than physical proximity. Thus, a public space is created through ingrained patterns, ephemeral events and temporal "folds," rather than by form *per se*. Time and space are deliberately left indeterminate. Arguably, Y–D Square shares a lineage with architect Diana Agrest's theoretical urban revitalization project for San Francisco, which similarly avoids pinning down public space. Agrest explicitly connects this revaluation of urban space to the requirements of the hybrid, cyborg subject:

The China Basin project, much like Donna Haraway's cyborg, is about transgressed boundaries, potent fusions and dangerous possibilities. This project is a provocation. It is, to paraphrase Haraway, a fiction mapping our urban, social and ideological reality, resolutely committed to partiality, irony and perversity ... Zones of programmatic superimposition and interrelation radiating out of each "courtyard" are created, thus defining a *public place*. The boundaries determining various programs are left in suspense,

undetermined, creating areas of programmatic instability, dissolving the barriers ... and reflecting the chance process of urban change over time. (1996, p. 60)

It seems clear that this theorization of urban space as fluid and multidirectional owes a significant debt to the digital medium. I argued earlier that the digital realm has become an important extension of the public domain. Moreover, it would seem that digital space reiterates the new terms of reference for physical public space. As in the space that Grosz and Agrest describe, in everyday web navigation paths can be opened, tracked and retraced, linked and released. The Internet, as a host of public spaces, evades the particular determinisms of the modernist grid that shaped many of the public spaces of the twentieth century. Like an organic system, it is selforganizing, adaptive, and resists stagnation. The Internet not only permits, but requires, multiple agents to act independently and concurrently.

Digitally supported public spaces are a part of everyday life. Chat rooms, online games, and Facebook offer sites for social interaction that are qualitatively and conceptually distinct from their physical counterparts. While it is beyond my scope here to evaluate these online public spaces, I want to consider the ways in which the digital medium changes how we imagine, create and use public spaces. I have suggested that the digital medium has created expectations of multifaceted and heterarchical physical public spaces. I will also argue that the so-called dematerialized digital realm in fact contributes to new material manifestations of the built environment, through which public space can assume new configurations.

Contrary to critiques of digital design as a de-materializing force on the built environment, the digital medium has emerged as a powerful tool for material engineering (Picon, 2004, p. 118). Digital space has become both a site for the conception of new spatial forms and a means of creating technologically enhanced objects and materials. Already in use are nanotechnological coatings for metal, concrete and glass which change their material properties, such as weather-resistance, reflectivity, and conductivity. decoi Architects' recent Aegis Hyposurface project is an early model for the kind of technologically mediated building materials that are beginning to reshape urban space (Reeser & Shafer, 2004). The project, which involves an interdisciplinary team that spans universities in Australia, New Zealand, London, and Montreal, are intelligent surfaces (figure 6). Their operating systems control a large number of pistons interactively, to display images, describe moving patterns, or react to nearby movement. These walls might, for example, react to a passerby while displaying preprogrammed imagery, creating uncomposed patterns of interference. Many other material

innovations hybridize new technologies and organic materials. Touraine Richmond Architects in California, for example, imagine the building envelope for their competition entry for the Ford Calumet Environmental Centre as a "thickened boundary" between the architecture and the environment. The synthetic infrastructure of the exterior walls is designed to be overgrown by the local vegetation, creating an unfinished, evolving façade (Mijacki, p. 49). If the logic of these architectural innovations can be extended to urban public space, the design of a new public squares might not consist of shaping a space, but rather of orchestrating materials and systems. The behaviour of these materials and systems might then reshape, over time, the qualities and form of a public space. In this design approach, a higher degree of intervention occurs on a material level than on a spatial one.

Figure 6

Aegis Hyposurface, by decoi Architects. Photo by Mark Burry. Used with permission.



Light emitting diode (LED) and liquid crystal (LCD) displays have already become a conventional way of achieving a greater level of responsiveness in the surfaces of public spaces. Anthony Townsend, an urban design critic, argues that Times Square illustrates a new standard of digitally enhanced surfaces in public spaces:

> Located at 3 Times Square, the Reuters sign presents live news and photos from the news agency feed, selected without intervention by a sophisticated content management system ... For the Lehman Brothers building at 49th Street and 7th Avenue, the architecture firm Kohn Pederson Fox wove a digital skin of LED panels around the building's first 3 floors. This digitally enhanced façade displays a series of landscape and nature scenes embossed with subtle Lehman Brothers branding ... The Reuters and Lehman Brothers signs point towards a possible future for Times Square in which reprogrammable building facades provide an endless variation of content, subtle marketing, and environmental enhancement. (2004, p. 103)

I question Townsend's suggestion that the marketing function of public spaces like Times Square and Y–D Square will become more "subtle" through the integration of technologically enhanced signage and building envelopes. Nonetheless the image that Townsend describes for new public spaces is clearly different than the iconicity of the central fountain that Allan Jacobs contends, I think mistakenly, is indispensable to great squares. The Aegis Hyposurface project and the Lehman Brothers signage indicate that adaptable surfaces and variable imagery are defining new public spaces. These material innovations respond to our expectations that physical space, like digital space, be interactive.

Notably, this multiplication of imagery is distributed across the surfaces of a public space, rather than focused at its symbolic centre. The tendency in contemporary architecture to leave space as "open" to multiple interpretations and uses is accompanied by a deepened investment in building surfaces as the primary site of design. The Seattle Library (2004) and the Beijing Books Building (2007) by OMA, the de Young Museum and Walker Centre (2006) by Herzog and De Meuron, and much of Jean Nouvel's oeuvre all exemplify an architecture driven by a radical investigation of materials, building envelope, and surfaces. Outdoor public spaces such as Y–D Square and Times Square are similarly, although more conventionally, defined through an articulation of surfaces. The architectural discipline's preoccupation with surface was recently the focus of a whole issue of *Praxis* *Journal*. In his introductory essay, "Surfacing the New Sensorium," Andrew Payne writes:

Hypersurface architecture would deploy the informational and simulacral potentials of electronic technologies in such a way as to collapse distinctions between the near and the distant, the real and its simulation, the intensive life of subjects and the extended surround. (Payne, 2007, p. 9)

Payne's comment underlines that the recent critical and aesthetic interest in surfaces, paralleled by technological experimentations with materials, is connected to new conceptions of the subject. As the notions of an "autonomous" subject and an "inert" built environment both come under intense scrutiny, the interface between the two becomes an important site of investigation.

It is increasingly difficult to draw the line between responsive technological enhancements to architecture, on the one hand, and the mobile technologies that are attached to people and mediate their interactions with the built environment. I've suggested that connections to the digital realm through personal devices such as mobile WLAN browsers and GPS receivers in cellphones change the form of public space. Shibuya Crossing in Tokyo has the highest density of cellphones in the world, which are heavily used for orientation. The technologically enhanced navigation of public space in Shibuya recalls Fredric Jameson's (1988) prescription for a mode of "cognitive mapping" that would make sense of the spatial complexity of the post-modern city:

> Shibuya's "smart mobs" wander the streets of Tokyo guided by these custom maps, generated by a sophisticated interaction of mobile handsets, regional cellular data networks, global positioning satellites in geosynchronous orbit, and remote GIS databases. (Townsend, 2004, p. 105)

Devices such as the GPS that help the pedestrian to navigate a complex streetspace also help to form a public domain that is simultaneously immediate and remote. "Using a GPS, we are both plugged into a global, abstract geodesic grid and confronted with our immediate surroundings" (Picon, 2004, p. 120). For Picon, the GPS illustrates the connectedness between two orders of materialization in contemporary urban space. An *abstract* order of materialization of the city is based on signals and codes, through which the social and economic systems operate. A second *concrete* materialization of the city involves the acute perception of material

phenomena. Our perception of these phenomena is mediated through the technological enhancement of our senses.

Physical and digital spaces operate in tandem and infiltrate each other. As database technology is merged with digital cartography systems, our capability to connect physical spaces with their online complements is greatly magnified. In the interactive dining guide www.opentable.com, for example, data about specific locations is recorded, indexed, annotated and searched from an array of browsers, from desktop browsers or from PDAs. These sites provide a forum for social groups or individuals to manage information about good places to eat, meet and shop. As in the case of www.portaportese.com, these forums can be conceived as extensions of the physical spaces that they annotate. Increasingly, the public square is redefined by the interaction of complementary sites in the physical and digital realms.

Conclusion

The public square continues to be a space of symbolic representation and an instrument through which the cultural, socioeconomic and physical forces in the city are expressed. Public space should be revalued, however, within the context of the contemporary city. Changed understandings of subjectivity and collectivity, I have argued, hold implications for public space. Contemporary public spaces should be oriented to the diverse needs of heterogeneous and dispersed communities. As such, a public square might contain multiple imageries, rather than produce a cohesive image. It might also be expected to be spatially and functionally "open." Changes in the relationship between local and global economies are privileging public spaces that are well connected to transportation, utility, media, and communications infrastructures. Increasingly, public spaces are imagined in relation to a system of nodes within the city. At the same time, digital infrastructures also connect a local public places to remote trans-urban and global resources. Finally, digital space and emerging technologies have profoundly impacted our imagination of public space. The public square might be conceptualized as a place of convergence of the digital and physical domains. It is important to recall that any changed expectations of public space apply not only to new spaces, but also to existing ones.

Author

Danielle Wiley is completing her PhD in Cultural Mediations at Carleton University. Her research explores digitally supported investigations of urban public space. She received her Master of Architecture (2002) and Bachelor in Environmental Studies (1999) from the University of Waterloo. Danielle has worked in architecture firms across Canada and abroad, including in Toronto, Yellowknife, Rome and, most recently, Vancouver. She has also taught design and cultural history in the University of Waterloo's Rome Program, at the Vancouver Art Institute and at Carleton's School of Architecture. Danielle is currently the Architecture Program Officer at the Canada Council for the Arts.

References

- Agrest, D. (1996). The return of the repressed: Nature. In D. Agrest, P. Conway & L.K. Weisman (Eds.), *The sex of architecture* (pp. 49–68). New York: Harry N. Abrams.
- Castells, M. (2004). Space of flows, space of places: Materials for a theory of urbanism in the information age. In S. Graham (Ed.), *The cybercities reader* (pp. 82–93). New York: Routledge.

Consiglio, A. (1965). La magia di Porta Portese. Rome: Canesi.

- Crang, M. (2000). Urban morphology and the shaping of the transmissible city. *City*, *4*(3), 303–315.
- Elvin, G. (2006). *Small plans: Nanotechnology for the building industry*. Retrieved November 30, 2006, from http://smallplans.blogspot.com
- Franck, K., & Stevens, Q. (2007). Tying down loose space. In K. Franck & Q. Stevens (Eds.), *Loose space: Diversity and possibility in urban life* (pp. 1–34). New York: Routledge.
- Fraser, N. (1992). Rethinking the public sphere: A contribution to the critique of actually existing democracy. In A. Calhoun (Ed.), *Habermas and the public sphere* (pp. 109–142). Cambridge, MA: MIT Press.
- Gibson, W. (1998). Cyborg civics. *Harvard Architecture Review*, *10*(1), 164–775.
- Grosz, E. (2001). Architecture from the outside: Essays on virtual and real space. Cambridge, MA: MIT Press.
- Haraway, D. (1991). A cyborg manifesto: Science, technology, and socialist-feminism in the late twentieth century. In *Simians,cyborgs and women: The reinvention of nature* (pp. 149–181). New York: Routledge.

Jameson, F. (1988). Cognitive mapping. In C. Nelson & L. Grossberg (Eds.),

Marxism and the interpretation of culture (pp. 347–357). Urbana, IL: University of Illinois Press.

- Madden, K. (2004). *Six parks we can all learn from*. Retrieved December 1, 2006, from http://www.pps.org/parks_plazas_squares/info/parks_plazas_squares_articles/september2004_feature.
- Miljacki, A. (2007). Green envelope. *Praxis: Journal of Writing and Building*, 9, 48–49
- Mitchell, W.J.T. (2003). *Me++: The cyborg self and the networked city*. Cambridge, MA: MIT Press.
- Ockman, J. (1996). Mirror images: Technology, consumption and the representation of gender in American architecture since wwil. In D. Agrest, P. Conway, & L.K. Weisman (Eds.), *The sex of architecture* (pp. 191–210). New York: Harry N. Abrams.
- Payne, A. (2007). Surfacing the new sensorium. *Praxis: Journal of Writing and Building*, 9, 5–13.
- Picon, A. (2004). Architecture and the virtual: Toward a new materiality. *Praxis: Journal of Writing and Building*, *6*, 114–121.
- Project for Public Spaces (PPS). (2005). *Ten principles for creating successful squares*. Retrieved December 1, 2006, from http://www.pps.org/info/ newsletter/december2005/squares_principles
- Reeser, A., & Shafer, A. (2004). Precise indeterminacy. *Praxis: Journal of Writing and Building*, *6*, 28–39.
- Townsend, A. (2004). Digitally mediated urban space: New lessons for design. *Praxis: Journal of Writing and Building*, 6, 100–105.
- Woods, L. (1997). *Radical reconstruction*. New York: Princeton Architectural Press.
- Yonge–Dundas Square. (2006). *Yonge–Dundas Square: The heart of the community*. Retrieved October 25, 2007, from http://www.ydsqare.ca