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***In-Between* Infrastructures: Imagining New Forms of Techno-social Politics
in the Contemporary Canadian Metropolis**

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Abstract

This paper discusses recent spatial developments in Canadian cities. We argue that a new urban form is taking shape between the old inner cities and the exurban developments of recent years. Taking our cue from German planning theorist Tom Sieverts, we describe this development as “in-between” urbanization. It produces a metropolitan landscape which is a mix of Fordist megastructures, post-Fordist bricolage and a number of incoherent and often segregated socio-spatial realities that include remnant ecological spaces, old industrial areas, educational institutions, post-war housing, parks, major transportation arteries and so forth. We examine these new landscapes against earlier Canadian urban imaginaries, especially that of Jane Jacobs. We envision them through the politics and technologies of urban infrastructure and we ground our argument empirically in an area of 85 square kilometers around suburban York University in Toronto, which exemplifies the in-between city with its infrastructure needs.

Introduction

Writing out of Vancouver some two decades ago, William Gibson opened his *Neuromancer* (1984) with references to skies the colour of “televisions tuned to dead channels” and earthly zones characterized simply as “the Sprawl.” This cyberpunk vision was as much about the *death*, as of the *life*, of cities great and perhaps not so great. Yet one of Gibson’s follow-up pieces included a short story that urbanist icon Jane Jacobs might have found a certain comfort in. Published in 1990 as part of a collection of writings on San Francisco as “dreamscape and reality” (Gibson 1990), Skinner’s Room and the book it would grow into (Gibson 1993) combined tales of computer consoles with stories of older but no less vital infrastructures:

The bridge maintains the integrity of its span within a riot of secondary construction. ... [Skinner] admires people who build things, who add to the structure. He admires whoever built this room, this caulked box of ten-ply fir, perched and humming in the wind. The room’s floor is a double layer of pressure-treated two-by-fours laid on edge, broken by an aching graceful form Skinner no longer really sees: the curve of the big cable drawn up over its saddle of steel. 17,464 pencil-thick wires (Gibson 1990: 155, italics added).

We quote this short story to point to one of the themes of this essay: that urban infrastructures have become invisible, when they in fact present potential opportunities on which to build new, if perhaps non-traditional, forms of urban life. But the very act of seeing such opportunities takes special effort given particular, place-based definitions of urbanity. And here a certain blindness – perhaps more in Toronto and other North American cities than in Europe – can be attributed to the romance of well defended inner-city places, which Jane Jacobs helped build. First in New York, then in Toronto, Jane Jacobs’ life and work has been celebrated, in no small part because of her leadership role in inner city, urban citizen movements (for a Toronto-based appreciation see Max Allen, 1997). Such movements flourished in the 1960s and 1970s, in large part to defend local places against infrastructures seen to be in support of less special, and even antithetical, metropolitan spaces. Yet it is the latter spaces where the metropolitan majority increasingly lives. In turn the question is raised: can some of the lessons of Jane Jacob’s life and work be built upon in the relative *terrain vague* of infrastructures, and the far flung places and spaces they help define? In order for us to answer this question, we are turning our attention to a new, but now more or less typical urban form which defies common descriptions of 19th century urbanism and 20th century suburbanism in Canada. We are borrowing the term “in-between city” from German planner Tom Sieverts (2003) to circumscribe the kind of urban place that is neither traditional downtown nor rural or suburban hinterland, but the new heartland of urban Canada. We are particularly concerned about the infrastructures in these areas and the way they

relate to vulnerabilities and risk for a growing but diverse urban population between the glamour zones of the downtown and the exurbs.

As a concept, the “in-between city” explodes the myth of the city/country divide and opens new ways of understanding infrastructure needs and provision in a globalizing Canadian urban region. The “in-between city” in our understanding is a liminal space which lacks the urbanity of traditional urban cores while being expected to take on some inner city central functions; it also continues to invoke the ‘advantages’ of the old suburbs, yet has severe gridlock and other infrastructural problems usually associated with more central areas. The “in-between city”, moreover, displays tremendous social polarization and segmentation, which are both different from the old suburban homogeneity and the “natural” ecological segmentation of the old inner city. Some of the wealthiest and some of the poorest communities come to live side by side, increasingly so in the form of fenced or gated separation, as more small-scale mixes of non-compatible land-uses strain the Fordist-Corbusian Charter of Athens based modernity of separated land-uses (Kaika and Swyngedouw, 2000). While urban places in Canada display an increasing divide among them between growing, successful cities and shrinking cities of decline, the “in-between city” of our study appears to lie somewhere between those two extremes of uneven growth (Bourne and Simmons, 2003).

Sieverts (2003) argues that the idealized model of the compact pre-modern city in Europe clouds an appreciation of the fact that the majority of in many urban regions live and work in a very different kind of environment. His particular study was of German urban regions in which, typically, a much larger territory characterized by a very scattered pattern of built and unbuilt areas surrounds a compact urban core. The reality of the *Zwischenstadt*, according to Sieverts, calls for a debunking of the myth of the ideal compact city and the development of new analytical and practical methods of planning in the “in-between city”. His work can be seen as contributing to an international conversation about emerging patterns of urban development that has been ongoing over the last two decades that includes concepts such as Joel Garreau’s *Edge City* (Garreau, 1991), Robert Fishman’s *Technoburb* (Fishman, 1987) and Ed Soja’s *Exopolis* (Soja, 1996), and the term “post-suburbia” (Teaford 1996; Phelps and Wu, 2011). It is important to note that Sieverts’ (2003) work is not meant to be an apologia for suburban sprawl. Rather, his intent is to provoke an acknowledgement of the reality of existing patterns of urban development and to encourage policy responses to the problems and the potential that they embody. In particular, he argues against policy that merely attempts to create simulacra of historic urban design set-pieces while simultaneously devaluing all other urban spatial types. It is especially this latter point that entices us to use the concept in the Toronto context where the provision of infrastructure and social services seems caught in a rather unaltered state between a focus on the needs of a globalized downtown and the automobile oriented necessities of residential, commercial and industrial

suburbs. The “in-between city” forces us to think more organically about connections between various aspects of urbanity in the urban region.

The Study Area

The geographical area that we chose to study lies partly in the City of Toronto and partly in the City of Vaughan. It is bounded by Highway 401, Weston Road, Major MacKenzie Drive and Dufferin Street/Allen Road and is about 85 square kilometers in size. This area encloses major employers in all kinds of industries, huge transportation and warehousing operations, York University - Canada's third-largest - the large-scale legacy of 1960s modernism of the Jane-Finch district and twenty-first century New Urbanist development, various shopping malls and supra-regional places of worship. In addition to these places of everyday life, attractions like Canada's Wonderland, Downsview Park, Black Creek Pioneer Village and IKEA draw super-regional visitors. The study area is extremely diverse in terms of the income and ethnicity of its residents, and also in its built form. It is a place of intense contrasts where residents walk to local variety stores to purchase small household items in sight of inter-city transport trucks hauling goods on the busiest stretches of expressway in the country. Despite the uniqueness of the study area, we believe that it has significant similarities with such areas in other Canadian urban regions. These “in-between cities” present a mounting challenge: their infrastructure has to be better understood and ultimately improved considerably. This paper is a conceptual approximation towards a better understanding of this kind (see also Young, Wood and Keil, 2011).

Our research approach is guided by newer work on urban infrastructures in the age of ‘splintered urbanism’ (Graham and Marvin 2001). While exploring the everyday movements of people, things and information through the infrastructure of our study area, we are also interested in questions that arise from the concept of urban vulnerability and risk. We are seeking to address risk and vulnerability related to the lack or inaccessibility of infrastructure both in the everyday lives of people living, working and playing in our study area and potential catastrophic situations such as the August 19, 2005 floods in the region that may have created more than \$100 million in damages. Our focus is on the relationships of infrastructure provision to the specific needs of the “in-between” city we see develop there. The reality of urban risk and vulnerability ‘on-the-ground’ is not well understood because urban regions are changing so rapidly under the influence of globalization, changing relations between market forces and governments, and newly generated built form and urban morphologies.

We are generally guided by global cities research (for an overview see Brenner and Keil, 2006; Taylor, 2004), and the newest insights into the understanding of multi-scalar connectivities that link the economic with the social and cultural (Keil and Mahon, 2009; Brenner, 2004; Herod and Wright, 2002; Sheppard and McMaster, 2004) as well as topological notions of the constitution of places (Amin, 2004; Amin and Thrift, 2002; Smith, 2003). Debates in this literature

resonate well with recent work on infrastructure, which has exposed the dramatic changes in the composition and purpose of today's infrastructure provision. Graham and Marvin (2001) have argued, for example, that we have now entered a period of "splintering urbanism", which sees infrastructure as both a mirror and a producer of highly unequal socio-spatial development in cities in the cyber-age. In particular, privatization of infrastructure and changing roles of governments and markets in their provision of telecommunications, highways, urban streets, energy and water are often cited as major influences here. Users are keenly aware of the potential limitation to their accessibility of infrastructures in their communities and beyond and they are "starting to pay considerable attention to how the whole of their networked urban infrastructures are configured beyond the end of the pipe, the plug, the wire or the street" (Graham, 2000: 185).

In addition, our project is related to a recent reorientation of urban studies towards the 'materiality' of urban geographies (after the cultural turn in the 1990s). Latham and McCormack have recently noted that this turns towards 'materiality' affords both a closer look at the 'concrete' structures of urban life and the immaterialities that govern and influence their use (Latham and McCormack, 2004). Transportation and other infrastructures are now often perceived as the bottlenecks of regional success in a world of globalized territorial competition (Erie, 2004; Keil and Young, 2008).

The Globalized Infrastructure-Region

Today urban regions are constituted by globalization. As we re-scale our view from the local to the global constitution of 'the urban', we simultaneously need to invoke the urban region (bioregion, watersheds, learning region, the global city region, the commuter shed) as the actual geo-political unit of much of our research and practice in urban environments today. As national jurisdictions are being re-regulated and boundaries are being redrawn, the urban region has seen a marked increase in significance as a scale of regulation and governance. This is, perhaps, most visible in the regulation of urban and regional natural environments: urban sprawl, peri-urban growth, regional water safety, transportation and transit, etc. are inevitably regional problematics. Creating the structures and processes of a 'new regionalism' is a challenge facing urban regions throughout North America (Sancton, 2001). The "in-between" city is a central part of these developments.

Increasingly, over the past generation, neo-liberal, market-oriented policy regimes have come to characterize urban governance in most urban areas (Brenner and Theodore, 2002; Marcuse and van Kempen, 2001). The combination of these two macro-processes has led to an acceleration of urban life and a de-stabilization of the human condition. New risks and vulnerabilities have appeared, replacing the complacency with which urban dwellers and decision-makers had lived through the 20th century regarding the existence and use of Large Technological Systems (LTS), which underlie the modern city (Hughes, 1987; Monstadt, xxxx; yyyy). Most cities developed comprehensive

urban sanitation systems, transportation infrastructure, water and wastewater services, urban health services, stable food supplies, energy supply networks etc. (Gandy, 2002; Kaika and Swyngedouw, 2000). The recurrence of unhealthy urban living conditions in our cities is partly the consequence of neo-liberal urban policies and their reliance on the market and the consequence of the privatization of urban infrastructure, like water and electricity. Urban services have deteriorated and urban neighbourhoods have tended to become more unequal. Welfare regimes have been replaced by workfare states (Peck, 2001). Inequalities in access to urban infrastructures in urban neighbourhoods are related to inequalities of health, well being, and socio-economic opportunity.

Compared with the often polarized social and environmental realities in US cities throughout the 20th century, Canadian cities have looked ‘healthy’, ‘clean’, well-run, just and environmentally rather safe. Much of this has been changing in Canada, too. There is now a need to reassess social and material infrastructure needs in a rapidly changing environment. In this country, globalization has increased the risk of exposure to infectious disease both in humans (e.g. Severe Acute Respiratory Syndrome -- SARS) and animals (e.g. BSE) (Ali and Keil, 2008; Garrett, 1994; Haggett 1994). New pests have been introduced into urban areas from faraway ecosystems and are threatening local ecological balances. Infrastructure provision, long thought of as contributing to the health of cities, is now not so clear-cut as issues of more generalized risk are resurfacing around water supply (e.g. Walkerton), energy (eg. the 2003 blackout), river pollution, and food security. It is imperative that both analysis and remediation of urban risks and vulnerability are now seen as globally constituted processes and events that defy insular local solutions.

In-between Infrastructures

Let us first have a theoretical look at the notion of *in-between infrastructures*. One path into thinking about such infrastructures comes via the French (actor) networks theoretician, Bruno Latour. The British geographer Doreen Massey recounts where Latour asks if a railway is *local or global*.¹ Latour’s reply, Massey indicates, is that a railway -- and by implication, many other infrastructures -- is neither. Massey then goes on to indicate some of the nuances of an increasingly influential, “relational” view of space:

[The railway] is global in that in some sense it goes around the world; you may travel on it from Paris to Vladivostok ... However, and this is the crucial point here, [it] is also everywhere local in the form of local railway workers, signals, tracks, points, stations. What Latour emphasizes here is the groundedness, the emplacement, even of so-called ‘global’ phenomena (Massey 2004: 8).

¹ See Latour’s contemporary classic *We Have Never Been Modern* 1993: 117.

And in this understanding of spatial relations, thinking about infrastructure can help us to better position ourselves in the world. It can help us get beyond the still common counter position of global `space' and local `place':

If space is really to be thought relationally [where “we sign up to the mutual constitution of the local and the global”], and also if Latour’s proposition is to be taken seriously, then `global space' is no more than the sum of relations, connections, embodiments and practices. These things are utterly everyday and grounded at the same time as they may, when linked together, go around the world. Space is not the outside of place; it is not abstract, it is not somehow `up there' or disembodied. Yet that still leaves the question in its turn: How can that kind of groundedness be made meaningful across distance? (Massey 2004: 8)

Or, as Massey puts the matter elsewhere: how might the urban community come to entail more of a “global sense of place” (Massey 2002: 294)? And here Massey’s questions regarding the meaning and potentials of metropolitan life today is also, implicitly, a question of regional politics that Sieverts (2003) and other European commentators (e.g. Hajer and Reijndorp, 2002) take up. Their visions of change line up with what the British geographer Ash Amin speaks of as “Regions Unbound” (2004: 34):

If we are to see cities and regions as spatial formations, they must be summoned up as temporary placements of ever moving material and immanent geographies, as `hauntings' of things that have moved on but left their mark .. as situated moments in distantiated networks that cross a given place. The sum is cities and regions without prescribed or proscribed boundaries.

Moving towards what Amin goes on to dub “a New Politics of Place” does not imply denying the merits of older conceptualizations (e.g., Jacobs 1961). Nor is it to ignore old fashion urban growth boundaries combined with newer green infrastructures to enhance flows of human and non-human life (from rivers to endangered species) into, through and around our built environments. But it is to bring into play new vocabularies of connectivity and movement which open up possibilities for questioning that which is assumed to be bounded and fixed in place. We will briefly take up these questions and their relationships to matters of technology and infrastructure, again by way of Gibson and Jacobs (see introduction).

Gibson imagined Skinners Room as a quasi-organic structure built into an earthquake damaged, San Francisco Bay Bridge. Jane Jacobs might have appreciated Skinners Room – not only because it entailed some of the darkness with which she would grapple in her last years (*Dark Age Ahead* 2004) – but also because it is the story of the transformation of a car-oriented “non-place” (Webber, 1964) into a distinctive if non-traditional urban “place” (Casey, 1997).

But moving beyond Jacobs and the sense of urban place that her most famous work (Jacobs, 1961) helped define, Skinners Room is also a part of one of the gritty and fantastic infrastructure assemblages that helped attract a generation of disaffected suburban youth, first to Gibson's writing, then to cybercities with their intensification of the foldings of global spaces and local places into one another. The latter cities comprise a world of technologically mediated mobilities and connectivities about which Jacob's work has little to say, despite the significance of each to some of the key themes of her collected works. Beyond issues of place, these themes include the economic positioning of cities in a world of uneven development (Jacobs, 1970), along with the role of cities relative to states in the wealth of nations (Jacobs, 1984). Jacobs was a front-runner in signaling the vital role of cities in wealth creation, with a good many of the rest of us only now catching up (see e.g., Bradford, 2002). One of Jacob's weaknesses, however, is to not have drawn out the forms of connectivity between cities – forms of infrastructural connectivity that augment wealth creation on cultural and other fronts (see e.g., Taylor, 2006).

Finally – to give Jacobs something of a last word – her *Dark Age Ahead* (2004) may already be here. By many counts we live in a *Risk Society* (Beck, 1992) where the risks, “imbroglios” (Latour, 1993,1996) and “normal accidents” (Perrow, 1999) are now firmly entrenched in institutional and other ways. On the environmental and urban fronts, such risks are integral to ‘business as usual,’ or what Gibson otherwise dubs “the sprawl” (Gibson, 1984). But the very form of our cities – global and otherwise - entails social risks in addition to a piling up of environmental ones. And here the notion of in-between spaces and infrastructures comes into play once again.

In conventional geographic terms, “the sprawl” might be thought of as the space that rests between the old City of Toronto neighborhood where Jane Jacobs ended her days, and the more globalized spaces of our time.² Breaking from convention, however, this in-between realm can be seen as one that is penetrated by green and gray infrastructures that entail the production of multiple spaces and times. Flows of information, water, people, commodities, animal life, energy and money are all mediated by infrastructures, the architecture of which

² The extent of “the sprawl” in Northeastern North America is of course open to question. In the mid-1960s the Canadian geographer Maurice Yeates wrote of a Main Street centred on a “Quebec City to Windsor Urban Axis” (Yeates 1964). While the University of Toronto's Bourne and Simmons do not talk of this “axis” in their more recent work, they do argue that the Toronto Census Metropolitan Area (population 4.7 million) is “underbounded” (Bourne and Simmons 2003). For them the Toronto CMA is more aptly seen to be one of the three core metropolitan entities (along with Oshawa and Hamilton) at the heart of a “so-called Golden Horseshoe.” The latter sprawling entity stretches around the western end of Lake Ontario, towards Buffalo New York. By Bourne and Simmon's count, this sprawling entity has a population of “over 7.5 million [inclusive of the old City of Toronto: population circa 700,000], making it one of the five largest metropolitan regions in North America” (Bourne and Simmons 2003: 28).

can make the difference between whether connections are fast or slow, or, indeed, whether they are made at all. In a world of rapid technological change, political (neo)liberalization and now (re)militarization, growing connections for some have gone hand in hand with disconnections (relative and absolute) for others. Some of Canada's most established geographers are now speaking tentatively of "fault lines" (Bourne and Simmons 2003) within the Canadian urban fabric. In turn there is an ongoing need for the development and elaboration of frameworks within which to situate and better understand such fault lines: social, environmental and otherwise.

Graham and Marvin's *Splintering Urbanism* (2001) suggests, among other things, that the sprawl---rather than being an amorphous zone---is in fact structured by planning and other more physical infrastructures that have helped transform it into an "archipelago of enclaves" (Hajer and Reijndorp 2001). In terms of the issues of risk and vulnerability, the big question in all this becomes one of whether the multi-nodal structuring of global cities will be for better or for worse. To Marvin's and especially Graham's (2004b) dark age ahead, Sieverts (2003) and Hajer and Reijndorp (2001) highlight an alternative orientation. Along with a good many others (see, e.g., Zounazi 2002), they speak of the need to actively search out spaces of hope. In their different ways, these writers argue that these spaces can potentially be found within "the sprawl" itself, in nodes running from expressway interchanges to abandoned yet still connected industrial brown fields. This may ultimately reveal the unrealized opportunities of these spaces.

Infrastructure, Networks and the Fractured City Region

Graham and Marvin's (2001) advance the thesis that the past half century of infrastructure history has entailed a move from the western ideal of universal, modern infrastructure systems accessible to all, to older and newer infrastructure futures (from privatized water services to telecoms, the latter phrase belying the British base to Graham's and Marvin's work) that entail high degrees of unequal access, connectivity and risk.

Three key themes running through this analysis can be synopsized, as follows. First, infrastructure systems are bound up with and stand to reinforce sociospatial tendencies within the contemporary metropolitan landscape. A summary phrase for the latter tendencies is Hajer's and Reijndorp's (2002) "the archipelago of enclaves." Second and elaborating on the theme of sociospatial differentiation and splintering, we come to the underside of what Graham otherwise dubs "premium networked spaces" (2000). If the enclave-type formations spoken to and depicted in the book's opening point to a globalized landscape of elite nodes of capitalist work and privileged consumption, the reverse side of this picture is found in the more amorphous spaces that have grown up between these and other enclaves.³ Of course, it is not inconceivable that the tendential rise of

³ On the residential front, enclaves often can take the form of walled subdivisions when designed with reversed frontages (miles and miles of which can be found in the 905 area code zone around Toronto), or, more insidiously, as gated "communities." For the latter,

“premium” networked spaces could very well give rise to resistance from those who have been left out of the loop.

Third and not incidentally, Graham and Marvin take note of the significance of information and communications technologies (ICTs). From the early 1990s a “virtual systems of computer networks .. match[ed] very closely the `real’ hard networks of information, energy and water flows” (Graham and Marvin 1994: 186) began to be realized. They note that

The previously separate technologies of telecommunications, computing and broadcasting are now converging into an integrated set of `telematics’ technologies and services – based on a core group of “digital technologies.” Central to these are communications, information and transactions flows between microcomputers and computerized equipment. The new capabilities of telematics are helping to support the liberalization and globalisation of utility markets by making possible a revolution in the degree to which global infrastructure networks and their management can be controlled in detail. Telematics help undermine the `natural monopoly’ characteristics of urban infrastructures, so allowing private firms to operate them profitably. What were previously public goods --- because it was difficult to monitor and measure the exact consumption of specialized services – are now made private because of the new control techniques of telematics. So, combined with the political movement towards liberalization, the movement from public monopoly to private marketplace can be seen to have both a technological and a political dimension” (Graham and Marvin 1994: 183)

The Politics of Infrastructure

In this section, we will speak explicitly to the politics of infrastructure, starting with some of the current-day underpinnings for what the urban planner Thomas Sieverts, along with others, has dubbed a politics of hope. This politics might be deemed to be part of a larger dialectic, to the degree that:

... rationally there really isn’t much room for hope. Globally it’s a very pessimistic affair, with economic inequalities increasing year to year, with health and sanitation levels steadily decreasing in many regions, with the global effects of environmental deterioration already being felt ... It seems such a mess that I think it can be paralyzing (Montreal’s Brian Massumi in conversation with Mary Zournazi, 2002: 211)

This is a statement with which Bruno Latour might very well concur, one of the chief differences in his work being that the language of critique is supplanted by a more friendly (if still polemical) engagement with issues of modernity (Latour,

see Nan Ellin’s edited collection (1997) *Architecture of Fear*. New York: Princeton Architectural Press.

1987). And here the capitalist machine is seen to move on – for better and now perhaps worse – all too rapidly (Latour 2009). From the late 1990s Latour began to celebrate the work (if not theorizations of the work) of ecological militants, precisely because they helped slow the machine down (Latour 1998). More recently he has promoted a politics of *Making Things Public* (Latour and Wiebel, 2005), starting with the process of bringing scientists and engineers into democracy (Latour 2004). Democratization (or what Timothy Luke speaks of as “public ecology” – Luke, 2003) is a good part of what is needed, if we are to collectively engage the risk society on its multiple fronts.

Infrastructure planning in Toronto, for the most part, had a different history. Let us time-travel briefly to the planning of large-scale infrastructure in the Greater Toronto Area, circa 1950. A new regional government (which would come to be known as the Municipality of Metropolitan Toronto -- forerunner of today’s post-amalgamation City of Toronto) was being discussed. But area residents, rather than being brought into the planning and production of new infrastructures, were in the process of being shut out. Attitudes of some of Toronto’s most prominent engineers were revealed, as follows:

Public health engineering is the art of directing the forces of nature to the protection and improvement of public health. The individual either through lack of understanding, indifference or carelessness cannot be relied upon to apply the necessary preventative measures and his relation to the public in matters of infectious diseases makes it a matter of public concern that he be protected as far as may be by public or common efforts (Gore and Storrie 1949)

Can these less than fully democratic sentiments and related practices be relegated to the past? Or do they relate to the present-day lay of the land of the sprawling, Greater Toronto Area?

Erik Swyngedouw’s review of *Splintering Urbanism* evokes this political context:

When I was a student of planning and geography in the late 1970s, political-economic studies of (urban) infrastructure were among the hottest things around. The tensions between state and economy and the contradictions of capitalisms were expressed, *so the argument went*, in the apparent anomaly that much of the fixed urban infrastructure in capitalist cities were provided free, financed by the state and, thus, the collective, while much of the rest of the urban economy was privately organized. The materiality of urban infrastructures was one of the entry points into excavating the role of the state therein (Swyngedouw 2003: 130-31, italics added).

The political economy to which Swyngedouw alludes was embedded in the Keynesian economic crisis of the post-Vietnam, post Bretton-Woods, post-1973

era. Within it the fiscal crisis of the state (O Connor, 1976) would, *or so the argument went*, give rise to ever-widening social struggles to defend the means of collective consumption (Castells, 1975). Initially seen to involve old (working class) and new left social movements (from students to many others), the outcomes suggested by this analysis – widening social struggles and the transition to socialism – has not yet come to pass (the accelerating socialization of nature being another story). During the 1980s, political alliances to defend collective infrastructures were relatively weak and ephemeral, if they got off the ground at all. Where urban infrastructure was concerned the fiscal crisis, rather than giving rise to a widening and deepening of urban social movement politics, gave way to the well known privatizations and deregulations of basic services (from water to rail and air travel, followed by electricity) in the time of Thatcher, Reagan and their followers. In turn Swyngedouw notes a “strange silencing of infrastructural studies ... Critical studies of networked infrastructures became an almost extinct species, exactly at the time that all sorts of new technological networks emerged and traditional ones were fundamentally revamped” (Swyngedouw, 2003: 130).

In the face of this somewhat narrow reading of the recent history of infrastructure ideas⁴, Swyngedouw proclaims *Splintering Urbanism* “a long overdue correction” and “a truly comprehensive analysis of the triumph of new networked large technological infrastructures” (ibid.). What is this “triumph”? Swyngedouw does not say. But one between-the-lines message can be discerned, especially if Swyngedouw’s review is read in conjunction with his *Social Power and the Urbanization of Water* and Graham’s edited collection *Cities, War and Terrorism* (both 2004). That is that the world is going to hell in a capitalist -constructed hand basket, “the triumph” perhaps being that the staggering and often un-quantifiable costs of this downward spiral may be a wake up call for us all. But then again, overplaying Apocalypse Now might exacerbate states of fearfulness (or induce numbness), which is not good for thinking and action.

To help frame further thinking about what we have spoken of above as in-between infrastructures, let’s move on with the help of three vignettes that relate to the now well-known question (in science and technology studies circles, at least) “Do Artifacts have Politics” (Winner 1985)⁵?

⁴ In his own work Swyngedouw (e.g., 2004) takes on board the work of Bruno Latour, whose book (*The Pasteurization of France* [originally published as *Les Microbes* in 1984) on Pasteur and global public health infrastructures shared considerable ground with the work of large technical systems writer Thomas Hughes. Hugh’s *Networks of Power* (1983) -- along with follow-up essays and books from Bernward Joerges and many others --- emerged in the time of the Swyngedouw’s “silencing” (see footnote 5 for some additional key articles pertaining to infrastructural influences).

⁵ This is the title of the widely cited 1980 article by the American-based science and technologies studies scholar, Langdon Winner. We caught up with it, as many others apparently have too (see Joerges 1999), in MacKenzie’s and Wajcman’s edited collection (1985) *The Social Shaping of Technology*.

1. In *Paris: The Invisible City*, Latour and Hermant (1998[2006]) comment that regular travelers into the City of Light's Gare du Nord know well the sound that goes with entry into that railway station: a "violent noise caused as pantographs⁶ are folded back to prevent them from melting". "This is the point of transition from 1,500 volts used by the RATP [the from out-of-Paris railway lines] to the 25,000 volts of the SNCF [the inner-Paris Metro]." And it is Latour's entre to his main points regarding the way political performances can take on an extended, material lives:

from metro. Once the tunnels had been dug no turnaround was possible Bi-current trains still show traces of one of the most amazing performances that have marked the subterranean face of Paris. At the turn of the nineteenth century, to avoid the nasty railway companies invading the city and linking up their stations by means of tunnels that had already defied its jurisdiction, the left-leaning *Conseil municipal* insisted on the new metro resembling the railways in no way whatsoever. The size of the tunnels had to be such that no carriage could ever enter them, and there was even talk of modifying the rail gauge until the defence ministry refused. A debate on the plans, a vote at the municipality, a switch of alliances, a surprise election: any one of these tiny actions may have sufficed to disrupt this strange Yalta alliance that was permanently to separate railways. Fifty years later the engineers responsible for linking up the train operator (nationalized since then) and the subway operator had ample time to measure up what the word performative meant. It cost them billions to undo the incompatibility between the two networks ... (Latour and Hermant, (1998 [2006]): 74)

By every indication, this is not an apocryphal story. In addition to the clear suggestion of a particular politics of infrastructure, it also points to a fundamental of large-scale infrastructure investments: once in place they are difficult and expensive to undo. In turn the politics of infrastructure, whatever they may be, tend to have long legacies. Or, as Latour and Hermant state with some irony: "Perhaps we're right to talk of the "weight of the structures", provided we take the word "weight" literally and not figuratively" (1998 [2006]: 74)

2. Langdon Winner answers his question – Do Artifacts Have Politics? – in the affirmative. The article under the cover of this title (Winner, 1985) is compelling and nuanced. One of its centrepieces is Robert Moses, the master builder of roads, parks, bridges and other public works from the 1920s to the

⁶ A "pantograph" is the name for both a 16th century writing machine and the 20th century device that hooks railway vehicles to overhead electrical lines, resembling the earlier device in its various armatures. This is but a hint at some of the material specificity called for by Joerges (1988). For some complex materiality on this front regarding advanced transportation systems and the politics thereof, see Latour's *Aramis* (1996 [1993]).

1970s in New York. Linked points from Winner on the politics of infrastructure run as follows:

In our accustomed way of looking at things like roads and bridges we see details of form as innocuous, and seldom give them a second thought. It turns out, however, that the two hundred or so low-hanging overpasses on Long Island were deliberately designed to achieve a particular social effect. Robert Moses .. had these overpasses built to specifications that would discourage the presence of buses on his parkways. According to evidence provided by Robert A Caro in his biography of Moses, the reasons reflect Moses's social-class bias and racial prejudice. Automobile-loving whites of 'upper' and 'comfortable middle' classes, as he called them, would be free to use the parkways for recreation and commuting. Poor people and blacks, who normally used public transit, were kept off the roads because the twelve-foot tall buses could not get through the overpasses. One consequence was to limit access of racial minorities and low-income groups to Jones Beach, Moses's widely acclaimed public park. Moses made doubly sure of this result by vetoing a proposed extension of the Long Island Railroad to Jones Beach (Winner 1985: 28)

Extracted from Robert Caro's 1000-page tome of the mid-1970s (*The Power Broker: Robert Moses and the fall of New York*), the latter story has taken on the proportions of an urban myth. Its veracity, apparently reinforced with the concrete of those "two hundred .. low-hanging overpasses" was given an added edge by Jane Jacobs, a figure whose myth may one day outgrow Moses, if it has not already. Writing from Toronto to her mother in 1974, Jacobs would report that "A stupendous book has been written about Robert Moses, to come out this fall ... We always knew Moses was an awful man, doing awful things, but even this book is a shocking revelation ... The things he did – the corruption, the brutality, the sheer seizure and misuse of power – make Watergate seem rather tame. I think the big difference is that the press did not expose Moses, in fact [it] (particularly *The New York Times*) aided and abetted him in every way" (Letter from Jane Jacobs to her mother," June 12, 1974 as reproduced in Allen 1997: 98).

3. Our third story brings us to Toronto in the mid-to-late-1990s. This was the time of the Province of Ontario's forced amalgamation of the City of Toronto (seven municipal entities into one), related 'downloading' of responsibilities to the municipal level without compensating fiscal capacity, and general anger and mobilization on the part of a populace that included thousands of inner city residents, a former city major, raging grannies and environmental and labour organizations. This was a local matter mediated through a more global layer of neoliberal ideology (see Boudreau 2000). Yet a quarter century on from James O'Connor's and Manuel Castell's mid-70s publications, a small silver lining appeared in the dark clouds of this capitalist-inflected ideology. Downloading produced a local fiscal crisis (even as budget surpluses were beginning to

appear at senior levels of government) that grew in the face of the perceived neglect of long-term investments in the city's largely-invisible, water and sewage infrastructures.⁷ In turn one might have expected, as some on the Toronto left certainly did, that privatizations of such infrastructures would ensue. But despite a compliant megacity council majority, this did not happen. Mediated through layer upon layer of complexity, some of the predictions of Castells and others from the mid-70s came true, belatedly if in modest ways, in Toronto circa the year 2000. A major labour organization (the Canadian Union of Public Employees) effectively joined forces with its local allies (prominently the Toronto and District Labour Council) and local citizens, civil society and environmental organizations (the Council of Canadians and the Canadian Environmental Law Association), together with a skeptical press and the Toronto City Council's social-democratic (NDP) caucus, to defeat moves to put water under the management of an arms length organization. In turn the status quo prevailed, with at least two surprising historical twists. In October of 1999 (i.e., in the first year of the new Lastman megacity administration) City of Toronto councilors had passed a motion 37-0 to defend the headwaters of Toronto rivers from pipe-driven sprawl. Then, after the Council vote in 2000 to maintain direct public control of city water and sewer infrastructure, water revenue account funds began to be used (to the tune of more than one million dollars) to fund the fights of civil society groups against major private developments on the Oak Ridges Moraine (the so-called `rain barrel of southern Ontario). All suggestions of a neoliberal steamroller would not have predicted this multi-chapter story.

Around what lessons and analytic directions might a politics of the possible be encouraged, then? We would like to formulate the beginning of some tentative answers to this question, with the help of the life and times of Jane Jacobs. If the life of Robert Moses presents one obvious way to suggest that the personal is political where urban and regional infrastructure is concerned, Jane Jacobs' life and times, along with their many biographical and related representations, presents another. As is now known to many a Torontonians, Jacobs' activist successes in New York, on top of her renowned publications from the early 1960s on, were followed by her work to help stop the intrusion of the Spadina expressway into the center-city neighbourhoods of old Toronto. But what explains these respective successes? With respect to the New York chapter of her life, how did she develop the nerve to take on power brokers of the magnitude of Robert Moses? One lesson here is this: in the company of others, Jacobs started small, proving that people together can fight city hall. As Jacobs would herself say in the wake of her leadership role in "burying Robert Moses's multi-million dollar Broome Street [Lower Manhattan] expressway plan"⁸, it all began with a fight to save West Greenwich Village sidewalks and a tree from arterial roadway widenings. "It turned out to be a great lesson," Jacobs would

⁷ On some of the complex politics of infrastructure visibility and invisibility, see Latour 1988, Kaika and Swyngedouw 2000, and Gandy 2002.

⁸ These lines (reproduced in Allen 1997: 69) originally appeared under the story title `All the Ranks and Rungs of Mrs Jacobs' Ladder', *Village Voice*, December 20, 1962.

recount in 1997 – a lesson “that we could win .. I can’t tell you how many people said, ‘We beat them on the sidewalks, we’ll beat them on this’ bigger matter of expressway infrastructure (as recounted in Allen 1997: 71).

As to the ingredients of later anti-expressway ‘wins’, first in New York then in Toronto, they involved huge outputs of citizen energy and even citizen arrests (two times for Jacobs in New York), related press attention and exposure of abuses of power, in conjunction with the evolution of its various mechanisms (see below). A further element was the very contents of Jacob’s *The Death and Life of Great American Cities*. If the 1950s was the iconic decade of the suburbs in North America (see Peter Rowe’s *Making a Middle Landscape* 1991), Jacob’s landmark work might be seen as part of the long march back to recognition of the importance of inner cities. In other words, Jacob’s 1961 attack on modern town planning and ‘urban renewal’ entailing the outright destruction of inner city neighbourhoods, was part of something bigger. The mainstream press of the time, in reporting on the emerging anti-expressway struggles, would speak of the dangers of moves “back to the dark ages of Robert Moses”.⁹ What were these dark ages? Was Moses the prince of darkness to Jacobs’ shining light?

Nearly two-decades after the publication of the American-based think piece ‘Do artifacts have politics?’, a multi-voiced European “comment” titled ‘Do Politics Have Artefacts?’ appeared (Joerges 1999). In it a German historian of large technical systems builds on the work of two New Yorkers: Kenneth Jackson and Robert Fitch.¹⁰ With them he traces issues of public access to parks such as Jones Beach, “not to Moses himself, but rather to the Regional Plan Association’s 1929 plan for New York and its corporate backers” (Joerges 1999: 427). Says Fitch: “just about every highway and bridge credited to Robert Moses was conceived and planned by the RPA. Moses simply poured the concrete on the dotted lines indicated in the plan” (Fitch as quoted in Joerges: *ibid*). In turn the question is begged: What were some of the ingredients of this regional plan, in addition to not-to-be-dismissed corporate backers (inclusive of the Sage Foundation and the Rockefellers)? One of them was a bias against various forms of commercialization in the extended age of what Robert Fishman, a historian of Anglo-American suburbanization, has dubbed “bourgeois utopias” (Fishman 1987). The bridges over the new limited access roadways were made low, as was the emerging norm in early-20th century “parkway” design, so as to exclude commercial truck traffic. And in so far as the 1920s was the first decade of mass motoring in the United States, we can reasonably speculate that Moses, as a progressive modernist, assumed a future built on the further democratization of

⁹ This line appeared in the *New York Herald Tribune* in October 1961 (under cover of a story titled “Villagers’ Near Riot Jars City Plan” (see Allen 1997: 68)), at a time when Moses was still very much entrenched as New York City’s infrastructure power broker.

¹⁰ Kenneth Jackson’s work of the 1990s has recently been mobilized and updated (see Ballon and Jackson 2007) as part of a public, exhibit and exhibit-catalogue-based reassessment and appreciation of Moss’s work. One of Fitch’s harder-hitting legacies remains his *The Assassination of New York* (1993).

car ownership. In turn his conscience would not have been disturbed by the implementation of this part of the RPA plan, inclusive of its built in barriers to buses to Jones Beach.

The above historical reassessments do not exonerate Moses of his sins. But they do point to the obvious: large metropolitan areas, while they are open to the influence of exceptional (Faustian and Saintly) individuals, are not the products of any one of them. With respect to the development of large technical systems, the work of a Pasteur, an Edison or a Moses needs to be seen along side that of a complex array of human and non-human forces, from microbes to electrons to desires for urban nature. Alternatively, and this is perhaps a second lesson for citizen activists, the paths of infrastructure development, in being complex, are often open to multiple points of entry and potential change. With respect to the Moses story, some of his more notorious words and actions ¹¹ helped beget counter actions that Jacobs and others were able to use to their advantage. By the late-60s moves out of the above-mentioned “dark ages” entailed environmental-assessment-type criteria for projects involving federal funds. Jacobs, in the thick of the action, would show here subtlety and smarts in combining knowledge of these emerging developments, with considered action. On April 11 1968, the day after she was arrested on charges of riot, inciting to riot, criminal mischief and obstruction of government administration in conjunction with the revival of less-than-fully-considered plans for the Lower Manhattan expressway, she would begin to ‘deconstruct’ the official hearing proceedings, as follows: “Next month new regulations about hearings on the highways using Fed. Funds go into effect, requiring more stringent studies and information than were done on this one. The object is to prevent such blatant mistakes as the Lower Manhattan Expressway. So what do you know – this hearing was rushed so the new regulations could be evaded. Not only that, it does not even meet the law for present hearings! They don’t care. They count on us not having the money for a legal case, and they are right” (Jacobs, in a further letter to her Mother, reprinted in Allen: 1997 pp. 72-73)

A third lesson of Jacobs’ life and work might be summarized with the help of Amin and Thrift (2002), to the effect that the capitalist machine moves on and we need to follow it and be aware of its complexity and contradictory machinations. In New York in the 1980s and 1990s it became clear that actions such as Jacobs’, followed by a long line of others of an equally creative bent (a generation of artists in their illegal then legal lofts – see Zukin 1982), helped create the conditions for gentrification and subsequent heritage theme-ing of Greenwich Village, SoHo and other areas such as TriBeca in Lower Manhattan. Had the Cross-Town Expressway been built and had the remaining lofts remained illegal (i.e., designated for non-residential, industrial use), the histories

¹¹ “When you operate in an overbuilt metropolis, you have to hack your way with a meat axe” – this line is attributed to Moses. It was very likely uttered at the time of his ‘successful’ push to develop the cross-town Bronx expressway in the late 1950s/early 1960s. For more see Berman 1982: 290-312.

of these areas would have been different. To say this is not to dismiss *The Death and* [or the particular] *Life of Great American Cities*, but it is to set the scene for recounting a recent op-ed piece in *The New York Times*. On the occasion of Jane Jacobs' death at 90 in 2006, her old pre-Toronto stomping grounds were revisited, leading to this observation: "The old buildings are still there, the streets once again paved with cobble-stone, but the rich mix of manufacturers, artists and gallery owners has been replaced by homogenous crowds of lemming-like shoppers. Nothing is produced there anymore. It is a corner of the city that is nearly as soulless, in its way, as the superblocks that Ms Jacobs so reviled " (Ouroussoff *New York Times*, April 30 2006, Section 4, p. 4)

If infrastructure is to be part of the building of new forms of community to surpass aspects of Moses's (and our very own) dark age, how might we better approach it as a research subject?

Towards a New Materiality and a New Urbanity

Objects are back in strength in contemporary social theory. Whether in the shape of commodities, machines, communication technologies, foodstuffs, artworks, urban spaces, or risk phenomena in a thoroughly socialized nature, a new world of materialities and objectivities has emerged with an urgency which has turned them into new sites of perplexity and controversy. After poststructuralism .. had melted everything that was solid into air, it was perhaps time that we noticed again the sensuous immediacy of the objects we live, work and converse with .. which bind us as much as we bind them (Pels, Hetherington, Vandenberghe 2002:1)

This clarion call is one that Jane Jacobs may have appreciated (along with the inhabited bridges of William Gibson's topological imagination) given her history with sidewalks and the everyday objects of street life in New York and Toronto. With respect to the Paris of Bruno Latour's recent research and rambles, that city is said to have "approximately 400 newsstands, 700 billboards, 2,000 information stands, 400 public toilets, 1,800 bus shelters, 9,000 parking metres, 10,000 traffic lights, 2,300 post boxes, 2,500 telephone booths, 20,000 bins, and 9,000 benches" (Latour and Hermant 1998 [2006]: 64). This might all appear very mundane, and it of course is, albeit in ways that includes all sorts of challenges.¹² "Street furniture" has become the subject of a new politics of public space in Toronto – a politics that now goes far beyond the center city of old.¹³

¹² On some of the intellectual challenges and excitement regarding the new materiality, see the above article by Pels et. al., in addition to Clarke (2000) Latham and McCormack (2004) and Braun (2006).

¹³ In the context of the newly amalgamated City of Toronto, a new and currently vital civil society organization known as the Committee for Public Space has taken up the furnishing of the metropolitan realm with the help of regular interventions at City Hall, street happening, and tri-annual issues of that collective's magazine, *Spacing*.

Furthermore, this politics might be seen to bridge into what recent infrastructure thinkers speak of as a “Latourian public realm” (Gandy 2005). Whatever the labels, the public domain is on the agenda once again too. But this time around, far from a place that is being pronounced dead, it is being looked to as one which we need to work to actively see and build.

The above Latourian list is more than a list. Objects of everyday life help choreograph the art of the possible for (sub)urban citizens. In the course of his depictions of walks through his beloved Paris, Bruno Latour writes of “the silent influence of hidden forms” (Latour and Hermant 1998 [2006]: 68). They include the above-mentioned, taken-for-granted and often-unseen *objects*, and then some. In his interactions with an ATM bank machine and city streets with their stationary and more active, computer controlled furnishings, Latour projects the image of a man who feels lucky to be alive and able to share his enchantment with the city he calls home. At the same time, he chokes on the bad air while recognizing that all are not so lucky in their class (that of a successful academic) or bodily histories. Of the object world alluded to above, Latour states that “if you doubt the immensity of prohibitions and permissions, the obstinate distribution and segregations and selections that this multitude of objects practices night and day, equip yourself with a pushcart [as a homeless person does] or sit down in a wheelchair. Other than exceptionally, you won’t go further than a hundred meters without being blocked. Anyone who moves about comfortably and takes obstacles in their stride is clearly *authorized* by these objects to live in Paris (ibid: 65).

Latour’s extended analysis (1991, 2005b) of how society *comes to be made durable* points to some of the materiality that shapes these and other inequalities. Yet this materiality is one where there are no simple determinisms, technological or social. Furthermore, the bourgeois public realm that it shapes is subject to amendment. Liberal versions of autonomous individuality are overtaken by a collective realm that includes “teeming devices scattered through the city” (Latour and Hermant 2006: 68). While these infrastructures afford “possibilities for existence” (op. cit.), they also help “format” our everyday lives in cities -- for better or worse.

Following Matthew Gandy and some of the passages we have seen from *Paris: The Invisible City*, the Latourian public realm is both “metabolic” and “post-metabolic” (Gandy 2005). It contains both real and virtual flows as well as ongoing and new intersections between them. These complementary flows now embrace one of the more recent infrastructure issues to be made public in Toronto. The “teeming devices” of which Latour speaks have come to include wireless telecom services (see Thrift 2004, Mackenzie 2006). As they are presently being constituted with the help of Toronto Hydro Corporation (an arms length public agency of the City of Toronto), these local services entail new opportunities for global connectivity, as well as new grounds for Graham’s and Marvin’s splintering urbanism. The upside is that anyone who can afford a

computer laptop along with the related hardware and software to go wireless will be able to receive free internet services *in the downtown Toronto core*, courtesy of a municipally owned, public corporation. The downsides are that while the coverage of this already well-networked space may grow over time, so too may the price of access for people on the move.¹⁴ Issues such as these remain fairly marginal in Toronto today.¹⁵ But these issues of the public domain could grow with the help of actions oriented to issues of equality, regarding infrastructures that are still new and not fully fixed in place. Furthermore, these actions could be informed by the objective of developing a global sense of place for all, in this and other cities.

Conclusion: “All kinds of things happen at expressway interchanges”

The multiplication of what we may call empirical non-places is characteristic of the contemporary world. Spaces of circulation (freeways, airways), consumption (departments stores, supermarkets [malls]), and communication (telephones, faxes, cable networks [Wi-Fi]) are taking up more room over the earth today. They are spaces where people coexist or cohabit without living together (Marc Auge as quoted in Crang 2002: 569).

A number of geographers and urbanists have recently taken issue with this ongoing adherence to liberal versions (inclusive of a particular notions of contractually mediated social relations) of what the American urban planner Melvin Webber once dubbed the “non-place urban realm” (Webber 1964). These contrarians include Timothy Luke and Mike Crang with his talk of “Between places: producing hubs, flows, and networks”, as well as a few others who have begun to write from within the so-called “new mobilities paradigm” (Shelley and Urry 2006b). Like the Latourian public realm, this paradigm is filled with all types of possibilities. It even includes the *counter-intuitive* notion (counter-intuitive *if* the extended production of non-places is deemed to be inevitable) that “all kinds of things happen at motorway interchanges” (Hajer and Reijndorp 2001:32). That these things might be beneficial to the building of a common world is the hope of

¹⁴ The currently projected price structure for WiFi (wireless-fidelity) services from Toronto Hydro Telecom, while now a subject of some debate, is slated to run at \$29 (Cdn) a month by the end of the year. Currently on offer free of charge in the city’s financial district, the coverage zone of the latter service is slated to expand (along with the price) from Front Street to Bloor Street between Spadina and Church, by Nov. 2006.

¹⁵ With respect to the latter pricing issue, see the op.ed. intervention of Graham Longford and Andrew Clement (*The Toronto Star*, Sept 7, 2006 A21) of the University of Toronto’s Community Wireless Infrastructure Research Group. For news of civil society initiated experiments in sustainable transportation that integrate wireless internet access with public transit and bicycle riding and car rentals in Toronto, look for stories concerning the Mobility HUB partnership between Moving the Economy, BikeShare, TTC, GO Transit and AutoShare. This project was inspired by various infrastructure convergences in Bremen, Germany, according to *The Liberty Gleaner* (a local community newspaper in Toronto) May/June 2006 p. 1 (article by Nadja Sayej).

Maarten Hajer and Arnold Reijndorp, two European-based authors *In Search of New Public Domain* (2001).

The “analysis and strategy” sections of Hajer and Reijndorp’s work is provocative in so far as it disturbs easy assumptions. They suggest, for example, that there might very well be more social diversity (in terms of class and race) in suburban malls than one might find in the gentrified sections of North American inner cities. Furthermore, their work is provocative and polemical in that it suggests the subversion of a variety of what we might dub capitalist-state practices. To Neil Smith’s condemnation of security practices in the post-riot Tomkins Square of Lower Manhattan, they speak of “fences for public access” (p. 120). In response to the theming of both private and public space, they advocate “[counter]theming, compressing, and connecting” (from p. 117). In terms of their related concerns with land use, Hajer and Reijndorp move us from the places where those with Jacobean “eyes on the street” help in the friendly policing of strangers, to a world where we all tend to be strangers in transit. This certainly goes for the multitude of spaces in and around Canada’s largest expressway interchange (the-called “Turbo-leaf” interchange which weaves together the W. R. Allen Expressway with the 16-lane Highway 401, a major mall and Canada’s largest urban park to be, in addition to arterial roadways and number of subway-bus-pedestrian exchanges). There one finds an intensity of intersecting urban flows – flows that could indeed benefit from further study and innovative thinking and action.

If the Latourian public realm recalls the figure of a 19th century Paris *flaneur* crossed with a 21st century post-human subject (or what Gandy and others have taken to speaking of as “cyborg urbanism”), the new public domain referenced immediately above very much entails the contradictory problematic of so-called “automobility” (see e.g., Latham and McCormack 2004). This redirects us to the imperative of the “inbetween city”:

The burden of the Old City as the identity bearer for the entire city region increases to the same extent as the balance between core and city region shifts more and more in the direction of the city region. The identity structure of the Old City is overloaded and collapsing (Sieverts, 2003: 18)

The effects of urbanization today [include] the rise of new kinds of urban site. These are the ambiguous areas that are caught between the enclaves (Wall, 1999: 234)

These statements can be interpreted in various ways in relation to Toronto. On the one hand this city, like so many others in recent years, has focused a good part of its energies on the post-industrial remaking of its central city waterfront. On the other hand--from the late-1980s--growing numbers of regional residents began to look upstream to the headwaters of the rivers that feed this waterfront. And here the “identity structure” of the city-region began to be built in a new way:

highly publicized struggles to preserve a 10,000 year old landform known as the Oak Ridges Moraine nudged city-regional identity formation in a bioregional direction. But between the new greenbelt and the old inner city, we are left with “in-between” spaces of the sort with which both Wall and Sieverts are concerned. Let’s leave the last word to Thomas Sieverts. A highly experienced planner with successes of the sort found in the Emscher project in Germany, he also writes of the challenges of today’s city. He thinks of this city as one that “is in an ‘in between’ state, a state between place and world, space and time, city and countryside” (Sieverts 2003:x). With respect to the ongoing development of this city, Sievert’s follows with this:

Conceptual models and planning concepts are necessary, but what will be decisive for a more human development of the *Zwischenstadt* [i.e., the in-between city], will be the relationship of people to their fellow human beings, to the cultural quality of their city and to the nature of their environment. Without ‘ploughing’ the field of the [in-between city] .. in respect to social, cultural and ecological quality, all technical and economic efforts – of this I am convinced – will at the end of the day remain fruitless” (Sieverts 2003: 126)

Sieverts means it. So too should we as we attempt to ground some of his and others thinking in the in-between infrastructures we have introduced above. Perception is crucial to this enterprise as it can be “conceived as a process that can be built up from the superficial impression of the short-term memory through to image concepts which will build on each other to any depth of long-term memory. For the legibility of the city region, this could mean building up perceptual concepts of different types and intensities which mutually supplement one another” (Sieverts, 2003: 108). The innovation that would be needed here is institutional – creating new forms of consensual, democratic governance not yet tried for a complex yet elusive space like this one; and it needs to be one of design. These efforts come together in an infrastructurally based new model of in-between urbanism.

Education and transparency of public decision-making is crucial in democratizing urban infrastructure governance. It is necessary for citizens to understand the socio-environmental infrastructural fabric of the city in which they live and to participate in the process of enhancing living conditions. On the one hand, this will entail knowledge about qualities of life in certain places; on the other hand, it will raise the question about what can be done to remedy the situation: the classical exit, voice or loyalty options will apply (Hirschman, 1970). Thinking about infrastructure must be liberated from arcane sub-political areas of laboratories and technical departments of municipalities, transit commissions and waterworks. They need to be drawn into the public space, into what American political scientist Tim Luke has called a ‘public ecology’ (Luke, 2003) and what Hajer and Reijndorp have called the “new public domain” (Hajer and Reijndorp,

2001). Infrastructure is now more than ever appreciated as both a target of and a safeguard against catastrophe, terrorism, etc. on one hand and the necessary backbone of urban everyday life.

Returning, finally, to Gibson's fiction that inspired our thinking in the beginning, we can conclude now that spaces of the contemporary metropolis may not be cyberspaces in the science fiction sense but rather metaphorical cyborgs that mediate various infrastructural realities -- biophysical, machinic, social -- to create a new form of urbanism. Heeding the manifold advice from Jane Jacobs on how to build good cities, we can then hope that the spaces of the "in-between city" are recognized as important structural elements and sites of everyday life in urban region.

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