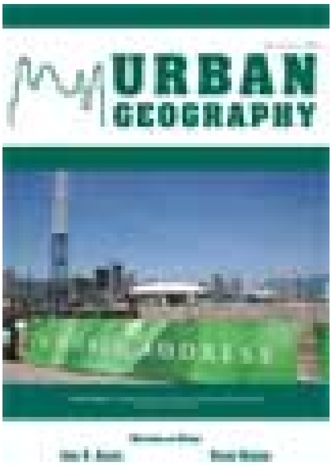

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Trouble in paradise: resilience and Vancouver's second life in the "new economy"

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Resilience is an increasingly important concept within urban studies, economic geography, and evolutionary economics for measuring the capacity of city-regions to respond to economic shocks. In this article, we provide a sympathetic critique of the resilience metaphor in urban studies, which we explicate through an analysis of the recent history of the Vancouver economy. On the surface, Vancouver seemingly showed resilience when it overcame the abrupt decline of its resource-based economy in the 1980s, and established an alternative flourishing "new economy" by the 1990s. But over the last five years, the key local "creative" industries such as video game development and film production have suffered, with a number of large firms leaving Vancouver, and industry employment declining sharply. Drawing on more than 40 interviews conducted over a five-year period with members of the local video game community, our paper documents the rise and more recent decline of Vancouver's "new economy" sector. Our research raises questions about the value of the resilience metaphor in urban studies and highlights the difficulties facing city-regions reliant on highly mobile "new economy" industries.

Keywords: regional resilience; Vancouver; new economy; metaphor

Introduction

At first blush, Vancouver has everything going for it. It topped the league tables as the world's most livable city for nearly a decade, falling slightly to third place these last two years (The Economist Intelligence Unit, 2014). Its February 2010 Winter Olympics drew praise as one of the best ever not only from IOC President Jacques Rogge (hardly unexpected), but even from a chronically dyspeptic British journalist corps (Pearce, 2010). It claims to be the greenest big city in North America, with perhaps the smallest per capita carbon footprint, and aims to be the greenest city globally by 2020 (City of Vancouver, 2013). And finally, through the efforts of the former Vancouver planning director, Larry Beasley, the city's landscapes and lifestyles are exported around the world as "Vancouverism," with simulacra of itself now found from Dubai to Beijing (Sin, 2011). Of course it wasn't always like that, and there are currently signs, and a central argument of this paper, that it may not remain like that.

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In its First Life, lasting about a century, Vancouver was primarily a regional processing, distribution, and control center (a local metropole in Harold Innis's 1956 vocabulary) for one of Canada's staples resource peripheries, British Columbia. Since European colonization in the nineteenth century, the province's prosperity rested more or less on exploiting a range of natural resources, especially the "green gold" of lumber (Hayter, 2000; Marchak, 1983). In that system, Vancouver functioned as the location of business control, and to a lesser extent ownership, as well as storage and distribution—while the rest of the province performed the grunt work of extraction. To use Ann Markusen's (1996, 294) well-known phrase, Vancouver was a "sticky place," stuck "like fly tape" to the province's resource hinterland.

Sometime in the late 1970s and early 1980s, as a result of both internal and external factors, the old staples system broke down. There was a severe economic downturn.

Many resource corporations disinvested, left the province, or went bankrupt. The provincial resource economy was radically restructured and, along with it, the old relationship between Vancouver and the rest of the province. It was then that Vancouver began to "decouple" from the rest of the province, as Davis and Hutton (1989) put it. As it did, all that was solid melted into air (Marx & Engels, 1998, p. 54). Vancouver's resource processing facilities, spaces, and accompanying industrial infrastructure were progressively abandoned, with resource corporations and even their office towers gutted, hollowed out, refurbished, and transformed from palaces of resource capitalism to "palazzos" for the creative class.[1]

Breaking out of its old "sticky place," becoming a global "slippery space" (Markusen, 1996), Vancouver reinvented itself. It attracted multinational capital to develop a new media sector with film, television, and—our main concern in this paper—a video game industry (Hutton, 2008).[2] Initially, Vancouver's video game industry burgeoned, growing at more than 20% annually during the 1990s and into the first part of the new millennium. At its peak, the sector employed more than 5,000 workers, with average wages twice as high as other British Columbian industries (DigiBC and BC Interactive Task Force, 2012). By the mid-2000s, the business magazine *Fast Company* rated Vancouver amongst its "Hot 15 cities," calling it "the Hollywood of the video-game industry" (Salter, 2005). Vancouver went from a slumping resource town to a Floridian creative city. Ostensibly, it had pulled itself back from the brink, showed grit, and left behind its First Life as a staples metropole to inhabit its Second Life as a global new economy hub for digital media production.[3]

In terms of the literature we review below, Vancouver displayed regional resilience. As an idea, resilience was first deployed in the physical sciences over 300 years ago, and referred to a material's capacity to recover its original properties after being subjected to external deformatory forces. Subsequently, resilience as a metaphor was brought into the life sciences (particularly ecology), and later still into the social sciences (Christopherson, Michie, & Tyler, 2010; Hudson, 2010). As Martin and Sunley (2015, p. 35) conclude in their long review, "there is little doubt that the idea of resilience is one of those concepts that has become 'of the moment.'" Within geography, urban studies and planning resilience has come to denote how "some regions manage to overcome short term or long term economic adversity to maintain a high quality of life" (Christopherson et al., 2010, p. 3). On the face of it, that seems exactly the Vancouver story. When BC's resource industries were pummeled by various external shocks in the first part of the early 1980s, the local metropole of Vancouver suffered accordingly. Unemployment rose to over 14%, there was significant disinvestment, and even house prices in the city's historically buoyant housing market fell. But within five years or so of those shocks the city ostensibly pulled up its socks, showed resilience, reconstituting itself as an urban "new economy."

Recently, though, there has been trouble in paradise, casting doubt on Vancouver's supposed resilience, and maybe on the very use of the resilience metaphor itself. Both jewels in the crown of Vancouver's new economy—film/television and the video game industry—have suffered significantly over the last five years. The video game industry on which we focus has lost at least 1,200 jobs since 2008 (approximately 20% of total industry employment), and has seen the closure of a number of high-profile studios which (like the staples industry corporations of the 1980s) have upped and left, or gone bankrupt. As we will report from our interviews, the problem is that compared to the old staples economy based on quotidian fixed, primary resources close-by—trees and ores—there was little to hold the gaming industry in place.

We recognize that agglomeration economies can potentially provide locational stickiness such as in the paragon example of the new economy, Silicon Valley (Saxenian, 1996). Such forces, though, appear not to have gained purchase within Vancouver's video game industry, possibly because the agglomeration was never large enough, and has been relatively recent—or perhaps because there was nothing in the city's economic history on which the industry could gain lasting traction. The prime "resource" for Vancouver's video game industry was its labor force, and unlike trees and ore, it was not rooted to the ground. Moreover, as Vancouver became a "new economy" success story, other city-regions took notice and built their own video game sectors, often using government subsidies to lure multinational companies to their jurisdictions.

The geographical resilience literature suggests that certain inherent characteristics of place, in combination with the organic relation that develops among them, allow locations to generate compensating economic activity following an economic shock. As Christopherson et al. (2010, 8) put it, regional resilience derives from "the innate characteristics of a place," and their "holistic" relation. Or in Martin and Sunley's (2015, p. 25) version: "regional economic resilience is produced by a complex interplay of compositional, collective and contextual processes." In both cases, there is the suggestion that resiliency derives from qualities inside the place, and the intricate relations that inhere among them.[4]

In contrast, we argue that resilience is much more complicated—because contemporary capitalism is so much more complicated than the stereotype portrayed in the resilience literature. Capitalism is full of surprises, which can mean it may neither respect the "innate" characteristics of place, nor their sedimented holistic relation. This is not to deny the importance of place, but it is to say that place does not always behave within capitalism, in accordance with the metaphor of resilience. We argue in the paper that the resilience metaphor brings with it problematic assumptions that undermine its utility—at least for understanding the Vancouver case.[5] The metaphor does not capture, nor given its semantic construction can it capture, the contingent forces operating at different spatial scales and for different lengths of time that both produced Vancouver's new economy and later went into reverse, causing the current decline. There is a need for a different approach, one more sensitive to the contingencies of global capitalism. This is especially true with regards to "new economy" sectors such as IT and digital media, where capital appears to be increasingly mobile and spatial fixes need not be "fixed" for long periods of time.[6] Talk of Vancouver's Second Life, therefore, may well prove as much a fantasy as the virtual world that goes by the same name.

We present our analysis in three main sections. The first reviews the meaning and use of the term "resilience." Originating in material science, resilience was later metaphorically transferred to other fields including, most recently, geography, planning, and urban studies. We critically examine the assumptions of the resilience metaphor, questioning their explanatory applicability to the regional and urban cases. In the second section, we briefly review our research methods before trying to make good on our conceptual argument by presenting the empirical case of Vancouver. After setting out the origins of the industry in Vancouver, we examine the industry's rise and subsequent decline. We argue that in both these periods, the trajectories of growth and decline do not fit the resilience metaphor. In the conclusion, we discuss the usefulness of resilience as a theoretical conception in urban and economic geography while suggesting why "new economy" clusters might be particularly unreliable as foundations for local economies.

Resilience

The Latin root of resilience, *resilīre*, meant to spring back or rebound. As a term, it was first used in seventeenth-century physical sciences and engineering to refer to the capacity of materials to return to their original form after being subjected to external forces of deformation such as bending, compressing, or stretching. In the early 1970s, the same idea was taken up and applied in the very different disciplinary contexts of psychology (the ability of individual psyches to recover after trauma) and ecology (the restorative facility of ecosystems following environmental disruption). Later still, resilience was introduced into the social sciences, particularly economics, and even more recently in human geography, planning, and urban studies (Boschma, 2014; Bristow & Healy, 2014; Christopherson et al., 2010; MacKinnon & Derickson, 2013; Martin & Sunley, 2015). While these disciplinary settings were radically different, a common core idea was retained: resilience as a gauge of the recovery of an object following its exposure to debilitating forces of change. Objects that recovered were resilient. Those that didn't were not.

Within the social sciences, there are two main approaches to resilience that differ because of contrasting definitions of recovery (Boschma, 2014; Martin & Sunley, 2015; Simmie & Martin, 2010). Neoclassical economics defines recovery as either a return to the original (single) equilibrium state from which the economy deviated, or to a different (multiple) equilibrium state. Known as the "engineering" definition, this form of resilience emphasizes "the capacity of a system to experience shocks while retaining essentially the same function, structure, feedbacks, and therefore identity" (cf. Hassink, 2010; Walker et al., 2006, p. 2). This meaning of resilience implies that, after an interruption, an economy will always return to an equilibrium path (either the original or a new one; see Martin & Sunley, 2015, pp. 4–5).

The second approach, the "adaptive" (following Bristow & Healy, 2014, p. 924; and; Martin & Sunley, 2015, p. 5), is associated with heterodox economists as well as geographers, urbanists, and planners. It takes issue with the assumption of equilibrium, proposing a different definition of recovery (Pendall, Foster, & Cowell, 2010, p. 76). The problem with equilibrium is that it sets aside history. Such an assumption denies one of capitalism's most obvious characteristics: its historical volatility, its fundamental character of *dis*equilibrium. Instead, the adaptive approach defines recovery not as a knee-jerk return to equilibrium (the engineering definition), but as an ability to change and to adapt to whatever capitalism historically throws up. "Resilience," as Boschma (2014, p. 1) writes, "is the long-term capacity of regions to reconfigure their socio-economic structure." It is about "reorientation" and "renewal" (Bristow & Healy, 2014, p. 924).

If the engineering approach envisions a resilient regional economy "bouncing back" to equilibrium from a shock, the adaptive approach expects resilient regions to "bounce forward" (Martin & Sunley, 2015, p. 4). Economic geographers have been particularly drawn to this adaptive version of recovery, partly because disciplinary critiques of neoclassical economics and market equilibrium are so well rehearsed and accepted, prejudicing the "engineering" version[7]; and partly because of the now-strong interest in evolutionary economics within economic geography, and into which the idea of adaptability fits so well (Boschma & Lambooy, 1999; Martin & Sunley, 2006; Martin, 2009).

Recovery within the adaptive/ecological approach, then, should not be conceived as returning to, or finding a new equilibrium, but as just another historical moment in which anything might happen, and sometimes will. Simmie and Martin (2010, p. 30), both proponents of an adaptive form of resilience and also adherents of evolutionary economics, emphasize that "economies are never in equilibrium; … capitalism is inherently a restless process." Within that turmoil, resilience—a place's ability to adapt—can provide the edge, allowing it success, or at least to fail less badly compared to other places. But what is it that gives resilience? There is as yet "no theory of regional economic resilience" (Martin & Sunley, 2015, p. 3), but many researchers believe that key qualities reside within the place itself. Christopherson et al. (2010, p. 7), for example, rework a famous sentence from Marx's (2008, p. 1) *Eighteenth Brumaire*: "regions make their own resilience, but they do not make it as they please; they do not make it under self-selected circumstances, but under circumstances existing already, given and transmitted from the past." In this interpretation, places cultivate their own resilience. It is not made up on the spot, *de novo*, but derives from what the place has been. As Boschma (2014, p. 9) adds, "resilience of regions depends to a considerable degree on their industrial history."

There are a number of suggestions about what a place must have handed to it from the past in order to adapt successfully (Christopherson et al., 2010, pp. 6–7, provide a good list; see also Boschma, 2014). They include a history of innovation, a past capacity to learn along with apt educational institutions, a spirit of entrepreneurship, an appropriate infrastructure, available investors and investment capital, and thick interlacing networks of formal and informal civic institutions. In turn, analyses of these kinds of factors have been worked through empirically to account for the resilience (or lack thereof) of such places as Swansea and Cambridge in the United Kingdom (Simmie & Martin, 2010), Waterloo and Ottawa in Canada (Wolfe, 2010), and Pittsburgh in the United States (Treado, 2010). In each case, the different attributes contributing to a place's adaptability are conceived as holistically related, over time entering into the very definition of a place.

The notion of resilience has clearly spurred empirical work, usefully extending evolutionary economics within economic geography. But there remain unresolved issues. One of them stems from the metaphorical redescription of regions as resilient. Metaphorical redescription means taking characteristics and processes associated with one set of phenomena and transferring them to very different phenomena (Barnes, 1996). Furthermore, metaphorical redescription operates both positively and negatively. It operates positively by indicating the particular relationships found in one phenomenon that should be applied to another. In the case of regional resilience, positive metaphorical redescription means taking the central characteristics and processes of physical resilience, such as deformatory external forces, or an entity's intrinsic qualities that resist or absorb those forces, and transferring them to another object—in this case, to the region or city. That is what the work reviewed above indeed does. But metaphorical redescription also operates negatively, in that it hides or obscures from the researcher relationships *not* contained in the metaphor. They are ignored not because they are unimportant, but because they are not part of the architecture of the core metaphor. Metaphorical redescription is consequently always partial: revealing some relationships, but necessarily rendering others invisible.

What relationships are concealed by the resilience metaphor? And are they important? We argue that the resilience metaphor negatively obscures three relationships, each of which is important for understanding the trajectory of Vancouver's video game industry and broader economy. The empirical section that follows is structured according to these three themes.

First, the innate physical properties that make a material resilient are metaphorically transposed within the geographical version of resilience as a set of historically entrenched place characteristics. These characteristics determine adaptability and hence the level of resilience. But as we will argue, there was little in Vancouver's First Life that prepared it for its Second Life. The footloose video game industry that entered Vancouver in the 1980s was radically different and disconnected from what went before. It is unclear how Vancouver's past mattered. But the explanatory use of resilience implies that a place's past matters, that its history enters and shapes its future powers of adaptability. We will argue that for Vancouver, there was little connection between the rise of the video game industry and the city's past, and consequently Vancouver's shift from its First to its Second life cannot be interpreted as resilience. The process was serendipitous, yet another unpredictable turn in the workings of capitalism.

Second, the resilience metaphor gives an inappropriately simplistic conception of geography. On the one hand, resilience originates internally, from inside the geography of the place or region. On the other hand, shocks that disturb the region, inducing adaptation, are external, originating from outside the place. Even in the more sophisticated resilience literature that conceives place as a constructed entity embedded in wider markets, networks, and political landscapes, this internal/external dualistic geography is maintained. It has to be for the metaphor to retain its meaning. In physical science, forces of deformation are always external, and the resisting force of resilience is always internal, derived from the inherent properties of the material. We will argue that these assumptions are less applicable for regions and cities, undermining the metaphorical transference of resilience. In the Vancouver case, we suggest that an internal/external geographical duality is inadequate to explain the rise of the city's video game industry as a form of adaptation, and its subsequent decline.

Finally, history within the resilience metaphor is presented as a set of discrete and abrupt states. There is a shock from outside that induces within the region an adaptation that then mitigates the shock. But there is also history as "slow burn." This means that a shock can be attenuated and continuous. Moreover, attempts to establish resilience can provoke forces that undermine that very adaptation. The larger point is that adaptation is not a once-and-for-all isolated change that guarantees success. Instead, it is historically shifting. This will be shown for the Vancouver case, again raising questions about the relevance and utility of the resilience metaphor.

The Vancouver video game industry and resilience

Over the past decade, there has been increasing interest in the geography of the video game sector. In an early paper on the subject, Johns (2006) analyzed the global structure of the industry, its competitive dynamics, and the changing formats of game play (see Table 1). More recent research has examined the spatial evolution of gaming clusters in specific cities, as well as the causes of urban agglomeration and the longevity of leading

Table 1. Top 10 video game publishers by global market share of boxed games, 2012.

Video game publisher	Share of global market (2012)
Activision (USA)	19.5%
Electronic Arts (USA)	18.4%
Ubisoft (France)	11.2%
Nintendo (Japan)	10.8%
Take-two (USA)	6.4%
Microsoft (USA)	5%
Sony (Japan)	3.5%
THQ (USA)	3.3%
Warner Bros (USA)	3.3%
Capcom (Japan)	2.4%

Source: http://www.gamesindustry.biz/articles/2013-05-16-activisions-market-share-climbed-to-almost-20-percent-in-2012.

firms (Barnes & Coe, 2011; Darchen & Tremblay, 2015; De Vaan, Boschma, & Frenken, 2013). Our research is oriented toward these same questions of genesis, evolution, clustering, and the mobility of firms, drawing on our interviews with key actors in the Vancouver video game industry.

Between 2007 and 2012, we carried out 43 semi-structured interviews with Vancouver video game industry software developers, designers, artists, executives, and assorted workers and industry experts.[8] The sampling method was nonstatistical and purposeful, intended to reflect the wide range of institutional segments within the local industry: large established as well as small niche firms; both international and domestic studios; venture capitalists; employment agencies; technology incubators; and industry associations. Interviews generally lasted approximately two hours and were transcribed.

While not an exhaustive survey, the interviews covered a broad set of industry players during a key moment of transition as the industry moved from the heights of success to decline and fall. This was entirely coincidental. We began the research believing we were studying an ascending industry that showcased Vancouver's resiliency and its ability to remake itself. Our original questions were about the origin and growth of the industry, the changing mix of local video game studios, its strategies for attracting talent, and the rising use of state subsidies to lure video game firms to other jurisdictions. But from 2009 onwards, the predominant narrative from our interviewees of industry insiders abruptly shifted. The talk was of an increasingly troubled industry, rapidly spiraling downward. It was this shift that made us rethink Vancouver's supposed resilience and question the appropriateness of the root metaphor.

Start the game

Paul Krugman (1991, p. 35) writes that "when one tries to understand the reasons for the localization [of an emergent industry], one finds that it can be traced back to some seemingly trivial historical accident." In our case, as one industry expert told us, "when you go back to the true genesis of the video game industry in Vancouver you ask 'why did this happen here?' And the semi-cynical answer is 'because that's where Don Mattrick's parents chose to live.'" In the early 1980s, high school students Don Mattrick and Jeff Sember began designing and selling digital computer games from the basement of

Mattrick's parent's house in Burnaby, an inner suburb of Metro Vancouver. The two subsequently formed Digital Software Incorporated (DSI) in 1985, developing and distributing a series of racing and sports games such as the *Test Drive* series. In 1988, Mattrick bought out Sember's ownership share, and moved the firm to an old warehouse in the gentrifying inner-city Yaletown district of Vancouver. Rents were cheap, the warehouse provided ample room for studio space, and the neighborhood was rapidly acquiring "chicness" and "cool."

DSI's success—it produced 20 games between 1985 and 1991—led Electronic Arts (EA), a California-based multinational producer and publisher of video games, to purchase DSI for $11 m in 1991. Mattrick was hired as the Creative Director of the new company, EA Canada, later moving to a state-of-the-art facility back in Burnaby ("the magic factory"). Not all the former DSI employees were happy with the new arrangement, however. That same year, 1991, a disgruntled group of them created a new firm, Radical Entertainment. And within six years, some of those same employees moved again, starting two other companies, Barking Dog and Relic. The general process of new firm creation through this kind of splitting has been termed "firm fission" by Barnes and Coe (2011): one firm begetting another firm through the mechanism of employees leaving to spin off a new company. A local Vancouver journalist, Kyllo (2009), has documented the entire "family tree" of Vancouver game firms and developers produced by firm fission. By 2009, the city was on its fifth generation of firms having originated from just the one, DSI (see Figure 1).

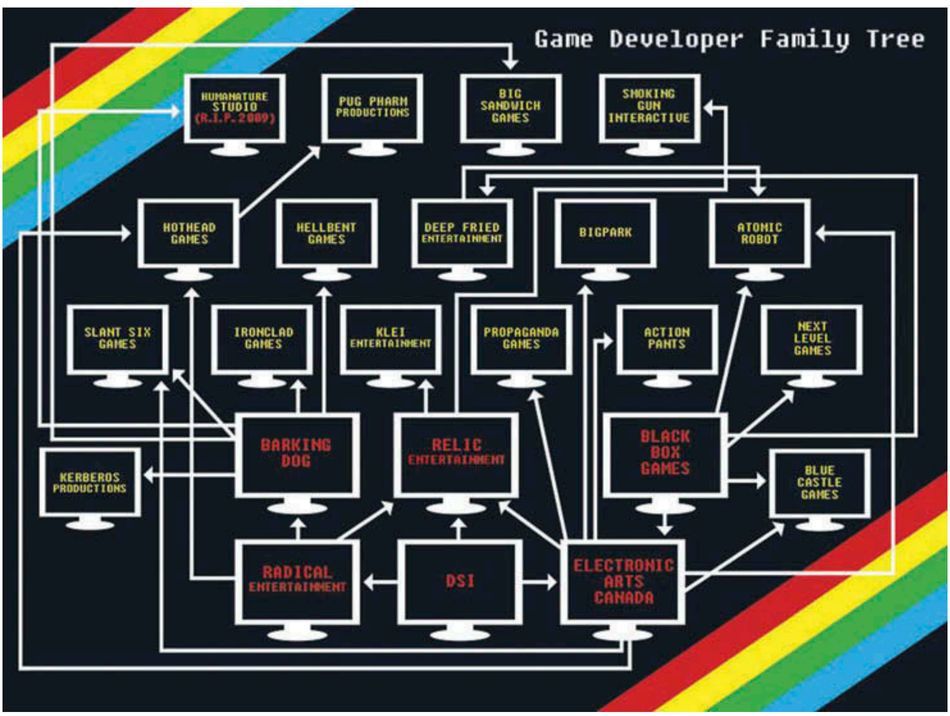

Figure 1. Game developer family tree for Vancouver's video game industry. Source: Kyllo, B. (2009) Vancouver's video game family tree. *The Georgia Strait*, January 29. http://www.straight.com/article-198534/video-game-family-tree.

A version of this same origin story is found in other cities as well: the acquisition of a smaller local developer by a major publisher catalyzes firm fission and cluster formation. Major publishers are constantly looking to acquire independent studios, either to own the intellectual property of a popular game, or to obtain the services of a creative production team that can deliver high-quality games in a timely fashion.[9] In this sense, within the hierarchy of the global gaming industry, Vancouver's story is typical. Its emergence was in no way preordained, but once DSI was bought by EA, and the anchor firm of EA Canada was created, firm fission began, with spin-off studios producing games on contract to international publishers.

A winning game

The literature on resilience would interpret the emergence and then initial success of Vancouver's video game industry as a result of Vancouver's character as a place, and the peculiar relation among its constituent elements. Our interviewees, at least, suggested that this was true. Studio executives told us that the city's key advantage was its location on the West Coast (Barnes & Coe, 2011). It was close to the heart of the North American video game industry in California (2.5 hours' flying time from Los Angeles), and in the same time zone. Those same executives said another local advantage was the city's higher education institutions that provided appropriate training for workers in the industry. They included the British Columbia Institute of Technology, the Vancouver Film School and Emily Carr University of Art and Design. All of them offered suitable training programs for workers interested in new media sectors such as video game development.

These two apparently Vancouver placed-based advantages—its relative location and training institutions—were advantages, however, only once there was investment in the industry from outside the city, and which in particular EA provided. That Vancouver was home to Mattrick and Sember, that it was relatively close to California, and that it developed training institutions were only necessary conditions for the industry's growth—not sufficient conditions. Indeed, training programs in video game design did not predate the industry, but were instead a response to its emergence and growth. The catalyst for the early growth of Vancouver's video game industry was incoming investment—and, getting us to the first of the problems with the resilience metaphor, support from advantageous currency exchange conditions.

In particular, investment in the video game industry was drawn to Vancouver from the late 1980s by the precipitous fall in the value of the Canadian dollar vis-à-vis the US dollar. Between 1991 and 2002, the Canadian dollar fell from trading at $US 90 cents to just over $US 60 cents (Figure 2). This gave Canadian game development studios a significant cost advantage over their United States counterparts, propelling large-scale investment in the video game industry within the city.

As one former senior executive at a local development studio told us:

> The broad picture for me is that we were the backyard of Silicon Valley and the growth in console game development was just enormous, especially in that 1997 to 2004 period. The business model was very simple: charge the Americans 4 million bucks to make a game, pay our people 4 million Canadian dollars, and then take the 30% and subsequently 27% and subsequently 22% exchange rate or whatever it was and that was our profit margin. It was just that simple.

All this suggests that the forces restoring Vancouver's fortune during the late 1980s, after its crash earlier the same decade, were not the city's entrenched internal urban

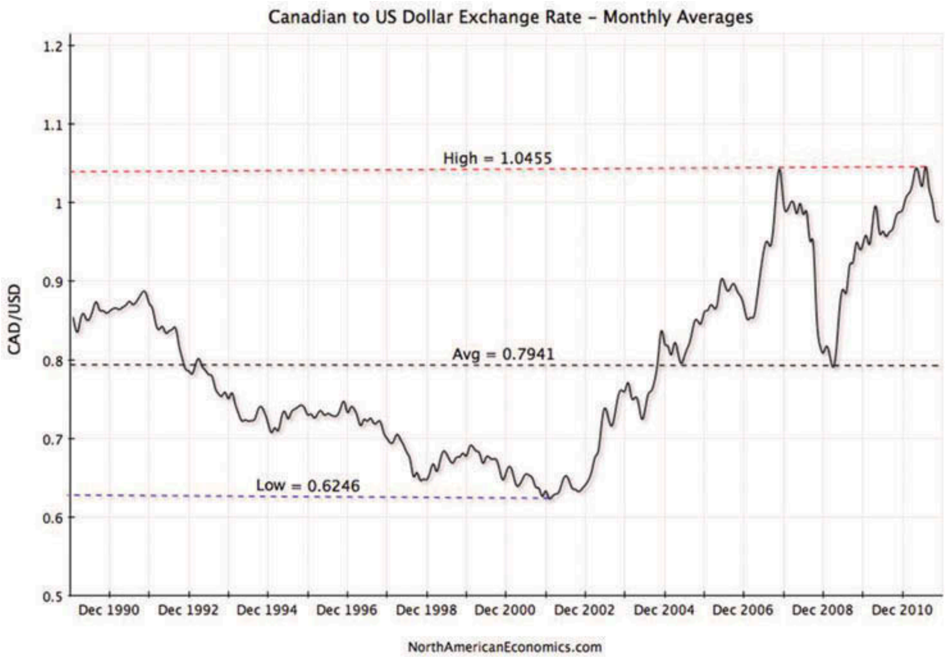

Figure 2. Canada–US dollar monthly exchange rates, July 1989—July 2011. Source: http://northamericaneconomics.com/2011/12/12/canadaus-exchange-rate/.

characteristics, as the metaphor of resilience would suggest. It was the opposite. They were forces that primarily lay outside the city. Such forces, though, as we suggested above when discussing the first of the features of the resilience metaphor, are necessarily ignored by that metaphor because they are not part of its internal construction. Yet, in Vancouver's case, they are crucial to understanding the city's recent history.

This takes us to the second feature of the metaphor discussed above—the presumed separation of internal and external geographical processes. Again, we want to suggest that such a clear-cut division implied by the metaphor actually obscures the processes at work in Vancouver's case, and which we will argue were blurred rather than separate.

The blurring of internal and external processes is seen in the dynamics affecting Vancouver's built environment from the late 1980s, when the city underwent significant transformation. While other North American cities had downtown cores that were either abandoned or colonized by office towers, Vancouver's downtown became a lively site for residential living (Ley, 1987). "Vancouverism"—the name given to Vancouver's urban development model—has consisted of dense condominium towers twinned with street-level and accessible amenities such as shops, parks and recreational spaces, community centers, and public transit hubs (Berelowitz, 2005). Embodied in Vancouver's Central Area Plan during the 1980s–90s (Hutton, 2008), the genius of this planning strategy was that it leveraged the city's environmental assets—mountain and ocean views, beaches, temperate rain forests—with human-made sites such as a seawall winding around the city's downtown peninsula, and a growing, dense cluster of condominium towers. Vancouver ostensibly anticipated, and built for, the "creative" city before Richard Florida discovered the creative class.

If any part of the Vancouver story seems to fit the resilience narrative, it may be this part in which local amenities and social conditions attract and retain skilled talent. For example, one video game designer from an international firm told us:

> Vancouver has many of the qualities of a creative powerhouse. All of the things that Richard Florida talks about are here. I would leave the studio with team members and be on a chair lift in half an hour. I mean how awesome is that! (Video game designer, 2012)

Or again, and from an HR manager at a medium-sized local development studio:

> It's just a liberal environment, right? We have a high tolerance for smoking pot. Which I think actually matters. We have a high tolerance for homosexuality—gay marriages, etc. So it's a very embracive environment for diverse groups of people. And games people are usually, you know, different. So it's a very hospitable environment for people who are creative and maybe a little bit different. In the same way that San Francisco is. (HR manager, 2008)[10]

Here, it seems as if there might be a separate set of internal geographical processes explaining Vancouver's successful economic transformation. It was not that straightforward, however. Those seemingly internal geographical processes responsible for the changing built environment of Vancouver were partly produced by an external geography. Specifically, large-scale infusions of capital and immigrants from Hong Kong introduced a new factor of social demand for upscale property in Vancouver from the late 1980s. In anticipation of the reversion of Hong Kong to the PRC in 1997, circuits of outside Asian capital, along with migration, joined and fused with existing city processes to create the "Vancouverism" built environment. It was impossible to separate the originating geographical processes involved in its creation into internal and external (Olds, 2001).

In sum, what we have suggested in this section is that the resilience metaphor, by emphasizing the strength of a place's character and the separateness of internal and external forces, has obscured in Vancouver's case the complicated mix of factors that catalyzed its Second Life as a digital media hub. We suggested first that key forces behind the city's broader recovery after its staples crash came from outside Vancouver. They were corporate decisions made by external international gaming firms, and reflecting in part yet other decisions made at national and international scales determining the relative value of the Canadian dollar. The decline of the Canadian dollar did not have to happen, but it did, and serendipitously coincided with the unraveling of Vancouver's former staples economy. Our second suggestion is that insofar as internal, place-based factors were important, they coalesced and braided with those from outside, as is clear from the emergence of "Vancouverism."

The upshot was that by 2005, Vancouver was the undisputed center of the Canadian video game industry—boasting over 50% of all industry employment (ESAC, 2007). That industry did not emerge from the kind of city Vancouver used to be; it was its anti-thesis. The factors influencing it came, as we have argued, from a complex combination of international, national, provincial, and local conditions. Operating in tandem, they created a radically different version of the city, and not a continuation of its old culture and sensibility. As one local industry analyst commented in 2007, perhaps the peak year for Vancouver's video game industry (Entertainment Software Association of Canada [ESAC] 2007):

> In Vancouver, I think we've just hit a critical mass…. Everybody has wanted to stay in Vancouver whether it's because they've got lives that they appreciate here…or it's the weather that they appreciate here. Some people have now left and gone to San Francisco or even Japan… and are now coming back to Vancouver because they just like it better… So, I think that it's a critical mass. (Local industry analyst, 2007)

A losing game

That last assertion has proved not to be true. Critical mass, however it is earned, is not static. Conditions change, and critical mass can be dissipated. In May 2012, DigiBC and the BC Interactive Task Force (2012) reported that since 2008 the province had lost 1,200 direct jobs in the video game sector; had failed to attract potential investment that would have brought in another 3,850 jobs; had foregone $0.9b in potential GDP; had lost its number-one ranking as the largest Canadian provincial producer of video games to Quebec (with Ontario close behind); and had seen its corporate anchor, EA, initially shelve plans for expansion, then close its downtown studio, and finally, lay off 10% of its employees. It is not that Vancouver's video game cluster disappeared, but it took a significant hit. Moreover, since the DigiBC and BC Interactive Task Force report was released, the economic woes have increased with four major international firms—Microsoft Studios, Ubisoft Vancouver, Rockstar Vancouver, and Activision Blizzard-owned Radical Entertainment—announcing that they would close or downsize their Vancouver operations (Crawford & Sherlock, 2012).

Such events speak to the third feature of the resilience metaphor we discussed above, and which we will argue, just like the other two, is inappropriate for understanding the Vancouver case. This is the supposition that once change occurs, that's the end of the story. Vancouver provides a fascinating case for evaluating the complicated historical dynamics underpinning resilience. Our position is that as Vancouver tried to adapt in the 1980s–90s, that is, to become resilient by developing a new form of industry, the very process of adaptation induced local-based changes that ultimately undermined continued growth. That local change weakened resilience rather than enhancing it, as the metaphor would suggest, again demonstrates its explanatory failings.

From the early part of the new millennium, outside forces that previously worked in the city's favor went into reverse. One was the now *increasing* value of the Canadian dollar, mounting an unprecedented rise between 2002 and 2011, reaching a high of over US$ 1.05 to CD$ 1.00 in May 2011. Just as export-oriented, automotive branch-plant operations in Ontario were adversely affected by the rising dollar over the past decade (Statistics Canada, 2011), so too were the export-oriented video game branch-plant operations found in Vancouver.

Another outside factor was a change in global demand in the type of platforms on which games were provided. Previously, the dominant platform for video game production and consumption was the console game. Console games sold on cartridges or CDs were expensive and could take years to produce. Vancouver's video game industry specialized in this platform. Consequently, it was unprepared when demand changed in favor of online games designed for mobile devices that were less grand, and continually updated often through feedback from players themselves. As a former Vancouver studio executive commented, Vancouver's specialization in console games became a problem as the industry shifted to online games for mobile devices, and further exacerbated by the appreciating value of the Canadian dollar:

> When that exchange rate advantage went away, it became a really difficult problem because we weren't as competitive a location as we had been. … [The] demand for console games collapsed, and a lot of studios in Vancouver lost their contracts…. Vancouver as a development community was slow to catch on to social and mobile [gaming] and all the new trends in the industry. We were still luxuriating in the console money and we were all loving it. There were already some people that had made the move into the smaller-scale social and mobile gaming, but I think in 2006–2007 and certainly after the massive layoffs of 2008, people from the console world were kind of forced to look at these new platforms more closely.

The larger point is that change did not stop after Vancouver supposedly showed resilience. While external forces of exchange rate movement and global demand changes fit within the resilience metaphor, there were other troublesome changes generated locally. Under the logic of the resilience metaphor, shocks should come from only outside, but in Vancouver's case, local internal factors began to undermine the industry by making costs of production higher. The local factors are of particular importance here because Vancouver's decline coincided with the rise of other Canadian video game production sites facing the same external forces. Vancouver did not so much lose a single-player game as much as it was transcended by other jurisdictional competitors in an intensifying multiplayer game to attract industry investment.

In explaining how firms arrive at locational decisions, one former executive at a major Vancouver game studio explained how the corporate strategy has changed since 2008: "when the recession hit and cost competitiveness became even more important, companies increasingly started to use cost as a primary decision-making factor, which they didn't really do before." This is the key. In the earlier growth period, cost was an important factor but it ranked below such considerations as the labor pool, managerial talent, educational institutions, and other factors such as language, culture, and ease of doing business. But now, cost is the first consideration. Our argument is that Vancouver suffers from two main cost disadvantages which are worsening, both of which originate from inside the city-region.

The first major disadvantage is its cost of living, especially housing. Vancouver has the highest cost of living of any city in North America, according to recent rankings by The Economist Intelligence Unit (2013). Moos and Skaburskis (2010) argue that Vancouver's housing market is decoupled from the local labor market because of major infusions of investment from recent immigrants arriving with established wealth. In most successful urban economies, the growth in the industrial base and local incomes produces increasing housing prices and urban revitalization efforts. In Vancouver, that relationship simply does not hold. Vancouver has the highest housing prices of any major city in Canada but the lowest median income levels (Metro Vancouver, 2012). Rather, the stimulus of incoming international and continental investment—much of it into the housing market—has driven housing costs to stratospheric highs.

Thus, during the period in which Vancouver's video game industry was emerging, local housing costs rose significantly without corresponding increases in local incomes. This issue of local housing costs has become a considerable challenge for the technology sector in Vancouver, and partly explains the industry downturn, according to a local industry expert (2012):

> In every aspect except for real estate, I think Vancouver is completely reasonable and competitive with other major markets in North America. But to have real estate as your major exception in terms of having reasonable costs as a city is not a very good sign, since

> this is pretty much the biggest and most important purchase in a person's life. The real estate market here is a business killer. It makes it difficult to attract the kind of talent you need and it makes office and production space more expensive.

The second disadvantage derives not from an increasing cost as such, but the lack of a compensating subsidy vis-à-vis other jurisdictions that provide inducements. It was precisely this issue that led to the formation of the DigiBC and BC interactive Task Force that wrote the 2012 report cited previously. An industry group, its report argued that while the potential growth and benefits of the industry were massive, it was hobbled by low provincial tax credits that made it uncompetitive.

Over the past decade, many Canadian provinces, foreign jurisdictions, and at least 21 states of the United States established tax inducement programs to attract major digital media firms. These are most commonly offered as refundable labor tax credits (Barnes & Coe, 2011). In Quebec and Ontario, these labor tax credits amount to 37.5% and 40%, respectively. For example, a studio locating in Quebec will receive 37.5 cents back from the government for every dollar the firm spends on its employees. This program cost the Quebec government $100 million in 2010 alone. But it has been a vital strategy for the economic development agency Invest Quebec, which contends the strategy has landed 86 companies and 8,236 jobs since 1998 (Baker, 2011).

The provincial government in BC—the centrist, market-oriented Liberals—remained steadfastly against competing with other jurisdictions on subsidies, arguing that such a path is financially unsustainable. On this issue, their thinking is very much in line with Richard Florida (2012), who has argued that "incentives do little to alter the locational calculus of most companies." Yet the evidence on the ground suggests otherwise: targeted subsidies are playing an increasingly important role in the locational decisions of firms, because companies have ever more places to choose from (Markusen, 2007). In this context of extreme locational competition, it only takes one jurisdiction offering targeted subsidies in order to change the "rules of the game."

Ironically, the foundational idea underlying resilience—that places can control their own adaptive powers—may be undermining the resilience of actually existing regional economies. The reason that such jurisdictional competition is possible is precisely because many of the local characteristics highlighted in the resilience literature as key to success—the emphasis on innovation and education, local amenities to attract a skilled labor force, the funding of infrastructure projects to support economic development, and the coherence of government and civic society institutions—are easily replicated in other places.

While most commentators (the authors included) agree that subsidies are a poor use of tax dollars (Markusen, 2007), rising jurisdictional competition appears to be making such incentives a "cost of doing business" in new economy sectors such as video game development. As a local industry expert stated (2012):

> Territories have always competed for jobs, especially as the digital media and creative arts sectors continue to gain prominence from economic development thinkers. So Ontario established a policy and then you have similar tax policies emerging in the US, and Singapore and France and Korea. The competition to land this activity is global and it is very intense. These are good jobs and tax credit policy definitely influences where those jobs go. I've estimated that Vancouver lost the opportunity to land 10,000 jobs which got sent elsewhere but were very likely candidates to come here. And in my opinion, the companies would have preferred to come here over Montreal, but the cost calculation overwhelmingly favored Montreal. And that is where government in British Columbia, at a variety of levels, has failed.

In summary, the assumption found in the resilience metaphor that change stops once resilience is asserted clearly does not hold for the Vancouver case. Both external and internal changes have continued, not buttressing the initial resilience, but undermining it. Our research on the local video game sector in Vancouver may have looked very different if it had been conducted even a year or two earlier, but this is partly the point of our argument. It is hard at any single moment in time to assess the health of a local economy, and it is even more difficult to project into the future an assertion that resilience has been achieved. Our interest in telling the story of Vancouver's Second Life as a "New Economy" city is to highlight inconsistencies in the resilience metaphor when making such claims.

Conclusion

The fall, rise, and fall again of Vancouver since 1980 raises many important questions about resilience, urbanism, and the nature of capitalist imperatives in the twenty-first century. It is not a coincidence that resilience has emerged in urban studies and economic geography at a moment of increasing global economic integration where people compete for jobs, cities compete for investment, and governments compete to provide the most "friendly" environment for economic growth. People, places, and governments need to be resilient because of the relentless competition promoted by globalizing markets. So, how useful is resilience as a metaphor to understand city-regional economic change?

Our suggestion is that resilience is most useful as a shorthand descriptive evaluation in comparing different cities and regions following an economic shock. Resilience could be useful in comparing, say, the differentiated experiences of Vancouver to Detroit. Both cities faced economic adversity in the 1980s but Vancouver was able to shift to a new economic platform, that is, to show resilience, while Detroit was never able to leverage its existing strengths and comparative advantages. Vancouver bounced forward, Detroit failed to bounce back.

That said, we are skeptical about using resilience as a causal factor in accounting for the differential success of cities and regions following a disturbance. This is often how the term is used despite the fact that there is, in fact, "no theory of regional economic resilience" (Martin & Sunley, 2015, p. 3). The important question, then, is not whether resilience is a metaphor or a theory, but rather whether the original metaphor can reasonably be transposed to its new explanatory setting. We believe that too much explanatory power is lost in that transposition.

We agree that capitalism is continually in disequilibrium, prone to various shocks, and we likewise agree that all places are subject to challenges of adaptation, given that change is part of the internal logic of capitalism. But as an explanation, resilience contains neither the geographical nor historical sophistication to understand fully the contingent processes of local economic change. It is these very contingencies that have caused us to jump from different scales of analysis as we try to explain the many factors at play in Vancouver's contemporary economic history.

Geographically, resilience offers a cartography based on a simplistic dualism: shocks are external to a region, while adaptation is internal to a region. As our account of Vancouver showed, reality is messier. Forces of change can originate internally (e.g., the effect of rising housing costs), and adaptation may be sparked externally. Recognition of only inside and outside spaces is not enough. The geographical world is more finely variegated. And that variegation, we suggested, is pivotal to understanding the Vancouver story. The ups and downs of the Vancouver economy have been defined by a complicated geography that cannot be forced into a crude spatial dualism.

Historically, resilience suggests three distinct temporal phases: before the adaptation, the adaptation, and after the adaptation. Such a well-ordered temporal process is not supported by our case study of Vancouver where these phases are blurred and muddied. The original adaptation to Vancouver's 1980s staples crisis, in effect, began before the crisis itself—going back to the 1970s, and associated with ideas of urban livability, grassroots progressive political change, and inner-city revitalization (Ley, 1987). However, the condo developments that define downtown Vancouver today—and "Vancouverism"—have been such a success that real estate prices now undermine other economic functions (Barnes & Hutton, 2009).[11] Higher housing costs make it more difficult to attract talent and find office or industrial space. In this sense, and in dialectical fashion, the original adaptation has become a fetter.

Finally, in the resilience metaphor, the past looms large, defining a set of innate characteristics that provide the resources for places to spring back from adversity. In contrast, the internal characteristics of Vancouver, laid down during a century-long past of staples control, distribution, and production, were, for the most part, irrelevant to any adaptation process—that is, irrelevant to resilience. Vancouver did not adapt to its resource-era crisis of the 1980s by drawing on existing local strengths as resilience theorists suggest. The new Vancouver required different kinds of workers, forms of expertise, educational facilities, institutions, business acumen, and forms of capital than previously existed. This might explain why Vancouver's "new economy" has been less "sticky" than desired. As the differential "stickiness" of various "new economy" clusters continues to be an ongoing topic of interest for urban and economic geographers, it is important to ask why the Silicon Valleys of the world are able to maintain (and grow) their economic status while other places face such uncertainty when trying to capture some of that "new economy" activity. What is clear is that as more jurisdictions develop the social, educational, and physical infrastructure to attract creative industry investment, the competition to land such investment will only intensify, and leave branch-plant locations such as Vancouver even more insecure about their future.

In this light, Vancouver should perhaps focus on another seeming comparative advantage: its beautiful natural surroundings. Increasingly, it is doing just that. Some commentators have argued that Vancouver is moving into an urban era defined by consumption where the city sells itself to the world in the form of luxury condos, travel packages, and educational tourism (Siemiatycki, 2013). If Vancouver is able to transition from its Second Life as a "new economy" city to its Third Life as a "consumption city", is this resilience given that it appears to threaten many of the city's stated commitments to sustainable, livable and equitable urban development? And if this is resilience, who really wants it?

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

1. Two examples of the conversion of former Vancouver corporate head offices into high-end condominium units were the BC Hydro Building made over as "The Electra Building" in 1998, and The Westcoast Transmission Building transformed into "The Qube" in 2005 (see Barnes & Hutton, 2009).

2. There are interesting parallels between the film and video game industries, especially with respect to the use of tax inducements to attract investment (see Barnes & Coe, 2011).
3. Throughout the paper, the terms "First Life" and "Second Life" refer to the transition that Vancouver has experienced from a resource-oriented economy (1880s–1980s) to a knowledge-based economy (1980s onwards). The term "Second Life" of course also has a double meaning given the virtual world of the same name that Linden Lab launched in June 2003 and which, in 2014, had about a million subscribers.
4. MacKinnon and Derickson (2013, p. 266) interpret this definition of resilience as blaming the victim because it "plac[es] the onus squarely on local actors and communities to further adapt to the logics and implications of global capitalism." If a region does not bounce back after a shock, it is because it fails as a place. MacKinnon and Derickson prefer as an alternative to resilience, "resourcefulness," which they think connotes active political engagement rather than passive self-recrimination.
5. Martin and Sunley (2015, p. 9) briefly discuss the metaphorical origin of resilience, although they do not believe it undermines its usefulness. To say that resilience is a metaphor is not to impugn its use as a theory within the social sciences. Most social science theories as well as those in in the physical sciences are based on metaphors (Barnes, 1996, ch. 5). Newton's *wave* theory of light provides a prominent example. What is important is not the use of metaphor *per se*, but how a particular metaphor structures theoretical explanations. Do the metaphorical origins of the theory prevent the recognition—that is, render invisible—key elements of what is to be explained? We argue that this is the case for the use of the resilience metaphor in urban and regional economic geography.
6. Given that the main purpose of the paper is a critical interrogation of the idea of resilience as applied to the recent economic history of Vancouver, we have not tried to develop any full-blown alternative theory. Our inclinations are towards explanations emphasizing instability and the rapidity of change within capitalism. Hence, our use of Marx and Engels' phrase, "All that is solid melts into air." The recent burgeoning literature in economic geography around path creation, path dependence, and lock-in offers another approach emphasizing, in contrast, how regions and cities become stuck in particular forms of economic specialization (Hassink, 2010; Martin, 2009; Simmie & Martin, 2010).
7. This impulse goes back at least to the 1970s, maybe before, and is associated with radical critiques of the theory of the firm and regional growth.
8. In accordance with the Canadian Tri-Council guidelines on research ethics, we have guaranteed full confidentiality and anonymity to individuals and firms that participated in this project. We are not able to name individual research participants or firms, and instead only provide standard positions and organizational identifiers in our quotes.
9. Likewise, many owners of small- and medium-sized video game firms are looking to be bought out by large multinationals, thereby realizing significant financial windfalls. We spoke to one video game firm owner who was on his third firm, having sold his company and "retired" twice before.
10. We recognize that while "creative" cities are often considered tolerant and diverse places, "creative industry" workplaces are typically less reflective of such tolerance. The issue of lacking diversity in the video game sector—on gender, ethnicity, age, and other identity markers—is an important issue for which very good research is being done (see International Game Developers Association [IGDA], 2005).
11. The condominium development lobby remains a very powerful force in Vancouver politics (information available online at http://www.theglobeandmail.com/news/british-columbia/vancouver-planning-chief-toderian-given-the-axe/article554571/).

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