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Filion, Pierre

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Commentary

## Suburban Innovations

Pierre Filion

School of Planning, University of Waterloo, Waterloo, Ontario, N2L 3G1, Canada; E-Mail: pfilion@uwaterloo.ca

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### Abstract

This commentary addresses the evolution of the North American suburb over the last 70 years, a period over which it adopted a development pattern marking a radical break from prior forms of urban settlement. Early in this period, the emerging suburban form constituted perhaps the sharpest transition in the history of urbanism in terms of urban form and transportation. This suburban form rapidly came to dominate North American metropolitan regions and spread to other parts of the world. In this commentary, I propose a brief history of the North American suburb since the late 1940s seen through the lens of the contributions it made to the evolution of urbanism across the continent. I contend that while suburbs are often associated with urban stasis, because perceived as an impediment to the emergence of new environmentally sensitive and socially and functionally integrated urban formulas relying on public transit and walking, they have played a major transformative role in the past and may be the source of further urban transitions in the future. North American suburbs have also undergone deep social changes over the last decades. However, I question the claim, made by some researchers, that we are entering a post-suburban era; but at the same time, I acknowledge the possibility of major future innovations within present suburban configurations.

### Keywords

dispersion; landscape urbanism; New Urbanism; North America; post-suburbanism; recentralization; suburb; suburban innovations

### Issue

This commentary is part of the issue “Garden Cities and the Suburban Antidotes”, edited by Markus Hesse and Geoffrey Caruso (University of Luxembourg, Luxembourg).

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### 1. The Dispersed Suburb Revolution

The commentary relates to the Garden City themed issue in two ways. First, the Garden City was the first integrated model of a low-density peripheral development with abundant green space. Such a form of development influenced the North American suburb of the last 70 years, even if there are significant differences between the two types of suburban development, such as the contiguity of North American suburbs and their centreless configuration. Second, just as the Garden City represented a radical transformation of the prevailing urban form, so did the dispersed North American suburb some 50 years later.

The historical narrative begins with the North American suburb becoming a foremost urban innovation. It is indeed difficult to overestimate the extent to which

the suburban form that took shape from the late 1940s to the early 1960s revolutionized the morphology, journey patterns and social geography of North American metropolitan regions. Centralized, public transit dependent and relatively high-density agglomerations experienced rapid decentralization, escalating reliance on the automobile and falling density. A new model of development—the dispersed suburb model—took shape over the 15 years that followed World War II. The dispersed suburb is characterized by a near universal reliance on the car and land use patterns that are adapted to this form of transportation: generally low density, zonal specialization, dispersion of structuring activities (employment, retailing, institutions; Filion, Bunting, & Warriner, 1999). The influence of heavy automobile use was also mirrored in other land use innovations shaping the dispersed suburb. These include ex-

pressways, curvilinear streets, super blocks bordered by arterials, and buildings forms, such as shopping malls, adapted to large automobile-based catchment areas.

The rapid expansion of dispersed suburbs was driven by the accelerated growth of a blue- and white-collar middle class propelled by a long period of prosperity from the late-1940s to the mid-1970s. As described by David Harvey (1981), suburbs became the 'spatial fix' of Fordism, playing a foremost role in securing the consumption and production needs of this regime of accumulation. Reliance on a wide array of durable goods— notably, single family homes, automobiles, appliances— is indeed at the core of the dispersed suburban life style. The accumulation of consumer goods was supported by the comparatively large amount of space available to households in suburbs. The dispersed suburb thereby played a key macroeconomic role by providing an outlet for the Fordist production of goods. At the same time, vast suburban industrial parks were well suited to the single-floor assembly-line production of standardized goods, many of them consumed by suburbanites.

## 2. Suburban Path Dependences and Social Diversification

Within a few decades, the dispersed suburban model became the dominant North American metropolitan form, with the central city accounting for a decreasing minority of the regional built environment, population and economic activity. Once in place, it is difficult to modify the dynamics of the dispersed suburb, in large part because of the interrelation between automobile transportation and low-density, functionally specialized land-use patterns. Prevailing suburban land use cannot be modified without a simultaneous sizeable transportation modal shift, and such a transportation change requires a transformation of land use. Other path dependences assuring the perpetuation of dispersed suburban development patterns include habits and preferences of residents— shaped by their living environment— as well as interests vested in this form of development and the financial mechanisms supporting suburban dispersion (Atkinson & Oleson, 1996; Blais, 2011). Hence the impression that suburban dispersion has become a factor of inertia preventing the adjustment of metropolitan development to changing societal social and economic circumstances and to rising environmental awareness.

Yet, North American suburbs have experienced ongoing evolution, albeit at a slower pace than over the early years of the dispersion model. This evolution has mostly taken the form of an adaptation of land uses to expanding catchment areas of car users. Examples of new forms of development arising in such contexts include big box stores, multiplex cinemas and ever larger supermarkets. But the main transformation of suburbs has been of a social nature. The makeup of the population of suburban areas has transitioned from being solidly white middle class to becoming increasingly diversified from an

income, racial and ethnic perspective. In a fragmented land use configuration structured by the super block and single-use zoning, social diversification has led to a social segmentation of suburban space. The evolution of the North American suburb thus combines path dependences, which maintain prevailing land use patterns and transportation dynamics in place, with the unfolding of profound social transformations. These path dependences determine the spatial configuration of these social transformations. The outcome is low-income social groups living in an environment that was conceived for middle-class households. These social groups are therefore confronted to living environments that are expensive to negotiate, as in the case of a forced reliance on the car and the high purchasing and maintenance cost of single-family homes relative to other forms of housing. The 'spatial fix' of Fordism is not so well adapted to the income polarization induced by automation, globalization and neoliberalism (Hackworth, 2006).

## 3. Post-Suburbanism

Over the last decades, the North American suburb has been the object of planning innovations causing some observers to proclaim the onset of a post-suburban era (e.g., Charmes & Keil, 2015). One such innovation has been the introduction of the New Urbanism model, which attempted to raise the density and pedestrian appeal of new developments, while deemphasizing the presence of the car and adopting traditional vernacular architectural styles. The 'back to the future' characteristics of new urbanism also include the adoption of an orthogonal street layout with back lanes for garage access, and in early versions of the model, the presence of a traditional retail main street. The expectation on the part of the promoters of new urbanism that their model would transform suburban development proved to be exaggerated. New Urbanism remained confined to a niche market. Another difficulty with New Urbanism is that it failed to generate functional walking, in large part due to the economic failure of main street retailing in this context, and the removal of this feature from later New Urbanism developments. Finally, despite their distinctive morphological features, New Urbanism subdivisions were inserted within the super-block structure and adopted the high automobile reliance of conventional suburban subdivisions.

Landscape Urbanism constitutes another reaction to conventional North American suburban development. Its principles, however, clash with those of New Urbanism. Landscape Urbanism is not concerned with density and street layout. Its approach concentrates on the greening of suburban development by relying more on natural assets (e.g., existing stream systems and woodlots) and green infrastructures (e.g., green roofs and porous pavements allowing water infiltration) (Benedict & McMahon, 2006). It attempts to abate the environmental impact of the dispersed suburb without challeng-

ing its defining land-use features or its reliance on the car (Waldheim, 2006).

There are also attempts to recentralize suburbs by creating multi-functional walking- and public transit-conducive centres, thus breaking with the car-orientation, low-density and land-use specialization features of the dispersed suburb. Such centres can be developed at different scales, depending on the size of their catchment areas: the neighbourhood, the municipality or a quadrant of the metropolitan region (Filion, Kramer & Sands, 2016).

We can query if a widespread adoption of these alternatives to the dispersed suburb could yield a qualitatively different suburban form. Could it change the transportation-land use dynamics of the dispersed suburb and usher in the post-suburban era? The query cannot be answered at this stage of the evolution of the North American suburb for the scope at which alternative models have been implemented has been too modest to impact significantly the dispersed suburb.

#### 4. Future Suburban Innovations

Future suburban innovations are likely to emerge from two sources: responses to tensions affecting suburbs and technological advancements. Tensions presently felt in suburbs stem to a large extent from falling incomes (e.g. United Way Toronto & York Region, 2017). These conditions call for more public services at the very time when filtering down suburban municipalities are confronted to declining revenues while having to attend to expensive renewal of aging infrastructures (Brown, 2014; Hodson & Marvin, 2015). Another source of tension is traffic congestion on suburban expressways and arterials, the outcome of near universal reliance on the automobile. There is also the environmental degradation associated with dispersed suburban development: the large environmental footprint of suburban areas (much in excess of their already extensive built perimeter) primarily due to voracious energy consumption (Wackernagel & Rees, 1996); the absorption of rural and natural land; impermeable surfaces interfering with water infiltration; air pollution and greenhouse gases emissions. These tensions have prompted the search for new forms of suburban development characterized by intensification, a variety of housing types, improved public transit and growth boundaries containing outward expansion. But to date, these alternatives have been more objects of discussions or planning objectives, than actual transformations.

Innovation technologies most likely to influence the future of the North American suburb include information technology applications to urban areas. Information technology contributions to the operation of suburbs could, for example, make for more efficient energy production and consumption, improve delivery and transportation systems and reduce construction, and thereby housing, cost through more advanced building techniques. But it is noteworthy that to date the im-

pact of information technology on suburban form and dynamics has been held back by the ongoing requirement to commute and the human need for face-to-face contact. Likewise, it has proven difficult to translate big data into planning innovations with practical applications. Presently, there is much discussion about the anticipated impact self-driving cars will have on urban areas. As these vehicles will operate within the existing transportation infrastructures of dispersed suburbs and will further reduce the friction of distance, self-driving cars are likely to further rather than challenge dispersion. The door-to-door availability of self-driving cars and the low cost of this transportation option in its taxi-like applications may wipe out suburban public transit and thus impede the densification and recentralization effects that could ensue from quality public transit.

#### Conflict of Interests

The author declares no conflict of interests.

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#### About the Author



**Pierre Filion** is a professor of Urban Planning at the University of Waterloo School of Planning in Waterloo, Canada. He has published approximately 150 journal articles and book chapters. His areas of research include the relation between transportation and land use, metropolitan-scale planning and suburban areas. He is currently investigating the transformation of North American suburbs through recentralization strategies.