Beyond the crabgrass frontier: industry and the spread of North American cities, 1850–1950

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The conventional story of urbanization in Canada and the United States portrays an outward movement of residences from the cities that only since World War II has been fuelled by the dispersal of employment to the urban fringe. This prevailing wisdom needs considerable revision. In this essay we present a theoretical interpretation of industrial urbanization. We argue that the outward spread of factories and manufacturing districts has been a distinctive and important feature of North American urbanization since the mid-1800s. The paper begins with a discussion of how industrial urbanization has been repeatedly misinterpreted as new and unprecedented, rather than an extension of past trends. In contrast to the prevailing interpretation, we claim that industrial urbanization is the product of a combination of the economic logic of geographical industrialization, movements in real estate, and political guidance by business and government leaders. The result has been extensive, multinodal metropolitan regions.

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Introduction

Clast do not grow by accretion or by the addition of increments at the periphery, but by the establishment of nuclei in the pentameter and the gradual filling in of the intimation between the nuclei.1

The conventional story of suburbanization in Canada and the United States portrays an outward movement of residences from the cities that only slowly has been fuelled by the dispersal of employment to the urban fringe. In the classic goodie, suburbia is conjured up as an image of "homes in a park," a middle landscape constituted as a way of life halfway between city and country.2 This conventional wisdom needs considerable revision. Residential areas have not singularly led the way outward from a previously concentrated city, but have always been joined at the hip by industry locating at the urban fringe. The outward spread of factories and manufacturing districts has been a decisive feature of North American urbanization since the middle of the nineteenth century. Suburban growth as a whole has been a mixture of industry and homes, the city spreading ever outward from its initial point of establishment and repeatedly spilling over political, social and preconceived boundaries.3 The result has been extensive, multinodal metropolitan regions. In this essay, we present a theoretical reinterpretation of industrial urbanization. We argue that industrial decentralization has been repeatedly misinterpreted as new and unprecedented rather than an extension of past trends. In contrast to the prevailing interpretation, we claim that industrial
suburbanization is the product of a combination of the economic logic of geographical industrialization, investment in real estate, and political guidance by business and government leaders.

Industrial concentration and residential suburbanization: the history of an idea

It took the Progressive Era reform and Sentimental House movement to spur serious study of the internal structure and expanding scale of American and Canadian cities. Even though urban reformers focused on housing and social conditions, and ardently believed in the benefits of “deconcentration” from the inner city to the rapidly growing suburbs, they documented industrial dispersal and pointed to the encroachment of metropolitan urban form. Nonetheless, this was forgotten after World War II, when urban research became academically established through the work of urban sociologists at the University of Chicago. The Chicago School’s “ecological” model focused on the urban core, the distribution of land uses around the center, and the sequence of land use change as the city expanded. Unfortunately, this set the priority of social geography over industrial location in urban studies, fixed the image of land use rings, emphasized the segmentation rather than unity of employment and residence, and invited the idea of city growth as a process of decaying the core. The leading study of suburbia in the 1920s similarly embedded the notion of residential propriety and industrial core.

The positive study of New York for the Regional Plan Association, which outlined the movement of industry to the fringe and the development of a multifaceted metropolis, was much richer in many respects, but it lacked an interpretative theory. The Depression set off another round of evidence on the size and expansion of cities, industrial zones, and industrial dispersal. Extensive research charted the decentralization of industry to the suburbs, and the ecological model allowed for “wedges” and “nodes” of land use expanding outward, and laid out the parameters of the urban property market and its cycles. However, the Chicago School notion of business core and residential rings was not easily unlopped.

After World War II, a new wave of urban studies appeared. Extensive residential suburbanization again gained the spotlight after 1945, despite impression industrial dispersal during the war. A spate of books appeared treating the post-war suburban push as unprecedented, in the same way the Progressives had hailed the suburban trend in their day. The premise had changed in one remarkable way, however: the central city was now seen as endangered by the price of suburbanization. The Regional Plan Association enlisted another massive study of the New York region to assess the viability of Manhattan; this had a greater impact on urban research than its predecessors, because it reconceived the theory of agglomeration to fit office activities at the center and the theory of “industrial assimilation” to explain dispersal. All the same, the Chicago school model continued to dominate discussions of cities, and economists and geographers who worked on urban location in the better years of the 1960s broadly constructed formal models that pointed conductivity in the manner of Park and Burgess, but for nearly rediscovered von Thurnen.

In a carryover of intellectual momentum reminiscent of post-Progressive era scholarship, the 1970s and early 1980s witnessed a flood of studies of urbanization and urban metamorphosis. While some scholars recognized the role of industry in urban decentralization, most began with the same stylized facts about the central location of manufacturing and rings of residential land drawn out to the suburbs. By the end of the 1980s, a new generation proclaimed the emergence of a shocking phenomenon
called, variously, Exopolis, Postsuburbia, or Edge City. Thus new employment centers at the metropolitan rim—the product of a decade of booming growth, property speculation, and large-scale development with concomitant dispersal of industry, offices, and retail malls—were treated as something essentially new under the sun rather than as the latest episode in a long-running story of North American urbanization.\(^50\)

The conventional logic of industrial dispersion

Once the outward flux of urbanized sites and employment is allowed into the centre of the picture, the explanation for metropolitan expansion must be drastically altered. In order to rethink our theory, it is necessary to reexamine the extant model of centralization and decentralization of industry and employment. The conventional view begins with the assumption of overwhelming concentration of industry in the urban core in the nineteenth and early twentieth centuries. While the rate of decentralization has been debated,\(^51\) virtually all students of urban employment would agree with Allen Scott that centralized production was “characteristic of the new metropolis well into the twentieth century.”\(^52\) For most urban and economic geographers, the suburbanization of industry did not occur until after World War II.

The principal factors behind industrial decentralization in traditional intra-metropolitan location models are transportation costs and agglomeration economies. The movement of industry to the periphery, in this view, only comes with recent advances in transportation systems, industrial process technologies, and business organization that lowered the cost of locating away from urban centres, reduced the effects of agglomeration, and liberated factory and firm from the urban land nexus. The traditional emphasis on transport costs and agglomeration effects in urban land use models follows the theoretical lead of Alfred Weber.\(^53\) For most writers, the central manufacturing zones result from the optimization of transport costs to the urban market and to centrally placed shipping nodes such as ports and railway depots.\(^54\) This Marxist explanation is fleshed out with a theory of economies of proximity among many small firms concentrated in a limited area. Different varieties of this account exist, but for Weber it is primarily transportation cost reduction among all firms that explains clustering, and secondarily access to a centrally located labour pool. The converse of this theory of concentration is the transport driven model of industrial decentralization. In the classic version, cars and trucks lower costs of transport dramatically over road and water and lessen dependence of urban manufacturing on ready access to central rail and harbor facilities. For example, “between 1915 and 1930, when the number of American trucks jumped from 138,000 to 3-5 million... industrial deconcentration began to alter the basic spatial pattern of metropolitan areas.”\(^55\) Transportation becomes virtually universal in explaining suburbanization based on the argument that cars and trucks provide unprecedented speed and flexibility in moving workers and goods.

The product cycle model was grafted onto Weberian location theory, adding the idea of industrial “maturity.” The central city, from this perspective, has a relative advantage as a source of innovation, thanks to maximum access to markets, new ideas, skilled labour, and finance. It serves to incubate new products and new firms that subsequently move to the suburbs (or backward regions).\(^56\) Agglomeration loses its grip as industry matures; the shift to mass production eliminates the inflexibility of small specialized producers on each other by standardizing input-output linkages and bringing a range of activities into large, integrated factories.\(^57\) The result is the dispersal of firms from the core to the city fringe.
Urban geographical industrialization

The conventional explanations of industrial location in cities and suburbs have various problems. In the first place, transportation limits, but does not determine, the location of industry. Undoubtedly, transport costs influence the geography of urbanizing industry, but it always clustered near transportation nodes and corridors, whether highways, rail lines or highways, in a way that leads to transport-coordinated industrial land use.30·45 Our cost improvements in transport have also allowed the city to spread out, but transportation access has been more widespread than conventional models allow, for three reasons. First, nineteenth-century transport modes were not as fixed or nodal as is commonly asserted; extensive and railroad systems surrounded cities and even penetrated the countryside. Second, water and rail systems could be brought to industry as well as industry brought to them; through investment and spatial extension, transport access is often the dependent variable in the equation of industrial location. This applies to a specific rail siding or an additional dock, as well as to the construction of entire canals or rail lines. Third, trucks did not suddenly revolutionize location, because industrial dispersal took place using wagons, railroads, and boats before and after the track.30·45

Weberian theory, including his account of agglomeration, suffers from undue emphasis on cost minimization with respect to input factors. Demand conditions are important, but even though capitalist firms try to keep down costs, with the relative price of inputs, industrialization is not principally an optimization problem; it is a dynamic process in which new commodities and new ways of doing things continually displace the old, and today's prices based on further technical change displace yesterday's costs.84·85 The drive to improve productivity through standardization, rationalization of workflow, mechanization, and automation is essential to the history of modern industry going back to the industrial revolution.84·85 In such a context of rising productivity and increasing returns to all factors, optimization models simply do not work.84·85

Product cycle-urban theory adds a needed element of innovation, and productivity advance, but it does so in a highly stylized manner that assumes wrongly that the new is small and the old large, industrial structure in a systematic way, and they are well behaved in their locational choises. The evidence, thus, is mixed and quite often contradicts the model. Jewelry firms, for example, are small and centrally located, but neither cost-sensitive nor innovative, and they do not grow up to be like auto plants. Refineries and shipyards were always relatively large. And while large factories were often pioneer sties, they can also frequently be found to function quite well very close to the centers of big agglomerations. In other cases, they were prominent in cities well before the twentieth century. Conversely, these industrial activities most prone to clustering—small workplaces and craft-like production—are by no means
always to be found in the central city. Finally, outlying locations are frequently the first implementation of a new activity in the city, and the incursion stage is skipped entirely, time and again.[96]

In short, industrial development and location is a non-stationary, uniform process. What we see, instead, are successive eruptions of new industries, embodying new products and new technical bases, and a diverse array of production formats evolving and restructuring over time. Technical change has developed on a variety of material bases in different industries, moved along divergent industrial (and company) trajectories, and been shaped radically by new discoveries from time to time.[97] This has meant many patterns of initial location, agglomeration, and dispersal, giving North American cities quite distinctive industrial foundations, patterns of uneven spatial expansion of these sectors, and episodic additions of whole new industries to the city.[98]

In fact, industry and the city have grown together as a unified process of geographic development. Industry does not locate in the city, it helps create the city.[99] Urban expansion is based on the ability of industrialization and capital accumulation to create places at the same time as making commodities, building factories, raising up a labour force, and introducing new technologies. This process of "geographical industrialization" has the following principles.[100] First, new industrial bases have the ability to break away from old centres and existing economies of agglomeration, thanks to both the rapid rates of accumulation and the experimental nature of their growth process. They are likely to avoid existing concentrations if they fear the effects of established labour practices, management outlook, or worker militancy. Second, growing industries build up extensive territorial concentrations of related activities, such as specialized suppliers, merchants, financiers and educational institutions, and spin off new firms and even new industries in their process of expansion. Third, new industrial implantations attract and retain new labour forces, steeped in the particular ways of working, technology and ethos of the industry. These fresh labour forces may have little in common with other segments of the labour market. Lastly, given the repeated and permanent nature of industrial evolution under capitalism, the space-economy has undergone many changes and upheavals.[101]

Applied to the urban arena, this suggests that as cities develop new industrial sectors or their existing industries restructure and expand, successive nodes of growth erupt in outlying areas, grow out in time to fill up the neighboring suburban territory. As cities have grown, layer upon layer of suburban development has been added to the built-up area, leaving former outlying districts wide-side the metropolitan and often existing historic patterns of expansion by dispersion in the process. After many years, it is easy to mistake the older edge cities and secondary nodes for part of a single "central city."

Modern metropolitan areas are so large that even large and distant suburban edges of the past, such as Brooklyn, Oakland, or South Chicago, are now deeply embedded in the structure of the city. The study of North American urbanization thus requires a model that begins with the simultaneous march of industry and cities outward, rather than a two-stage process of building a dense concentration of activities in the core over the nineteenth century and then decentralizing them in the twentieth.

Industrial districts and the multi-modal megalopolis

The process of inner-industrial growth has another crucial dimension besides the outward flow and build-up of the city: the appearance of distinctive industrial districts within a multi-modal metropolitan area. Chaos agglomeration theory does not explain
this phenomenon; the city is a single generic agglomeration with industry confined to the core. Conversely, traditional decentralization models allow only for the dispersal of large factories under the umbrella of the modern corporation. In both cases, too much is missing from the real fabric of urban industrialization; to recover it, we must consider the problem of industrial organization and the spatial division of labour.

Industrial organization has come under renewed scrutiny in recent years, and the older view of universal evolution from small firms to large corporations is no longer viable. Organizational forms are many and varied, across sectors, places and time. Small firms recur and persist while large companies show considerable variety in internal makeup. Big corporations do not simply insulate themselves from the market, but interact with it, and with other firms, in a more or less open manner, depending on strategy and circumstance. Market relations can be articulated in several ways, as well. Finally, space and market are not the only forms in which the social division of labour is integrated; territorial aggregation and local governance systems, local and national states, industrial associations, and other organizational tools play a part as well.

The most sophisticated model of urban industrial clustering is that of Allen Scott, who tries to capture the dynamic of industrial agglomeration and decentralization in terms of "transactions costs." Oliver Williamson developed the theory of transaction costs to stimulate Alfred Chandler's insights into the rise of the modern corporation, based chiefly on the technical imperatives of scale, into the language of neo-classical economics. Scott realized that the same insight could be applied to geography, allowing for a reworking of Weberian agglomeration theory. He argued that urban concentration provided an alternative to the large firm. Complexes of vertically disintegrated producers within specific industrial sectors cluster to take advantage of mutual interaction. Complexes grow through the intensification of the division of labour, multiple linkages among firms, and feedback from the fact of changing markets. These generic economies of scope for individual specialists and collective economies for the entire industry.

Scott's work complemented that of European researchers who examined the "gigorous industries of the Third Path" and rediscovered Alfred Marshall's idea of the "industrial district." While initially arguing for a small-firm model of clustering, Scott realized that both large and small factories and companies were embedded in industrial districts. Here would be decisive if external exchange were the only reason for agglomeration, as early transactions models implied. Yet, the benefits of interaction go to the heart of all extensive divisions of labour because they lower costs of innovation among dependent parts of production systems, reduce the risk of investments, lessen turnover time, and enhance institutions of collective governance. Furthermore, they offer dynamic advantages by stimulating the collective process of learning and providing a milieu of cutting-edge solving and innovation. Scott thus abandoned the simple model of central agglomeration and decentralization of large factories to the suburbs, in favour of one of multiple clusters throughout the metropolitan region as industrial districts can occur in any numbers of high-tech, large batch, or "new craft" sectors.

On further reflection, industrial districts were an essential element of American cities from early in the history of industrialization. By the mid-nineteenth century, a system of dense industrial districts were embedded throughout the Philadelphia metropolitan area, Boston contained a set of distinct industrial suburbs specializing in once products as shoes, machinery, and textiles, and a distinct set of manufacturing districts, quickly developed in cities such as Baltimore, Montreal, Toronto, and Los Angeles. If once these districts were close enough to the centre to be confused for a single manufacturing core, by the turn of the century, urbanization had reached the metropolitan scale. Since
at least 1850, the North American city has grown largely through the accretion of new industrial districts at the urban fringe, becoming multidual in the process.

The basic theory of industrial districts, however, bespeaks the question of geographic scale, which is crucial to the understanding of metropolitan areas. At what scale are the forces of agglomeration operative, and how far do their relations of mutual dependence and benefit extend into the world beyond the plant gate? These difficult questions have only begun to be seriously examined in discussions of the dialectics of the local and the global. Large cities and metropolitan areas are units of effective interaction and agglomeration in their own right, as well as assemblages of industrial districts. Furthermore, spatial concentration and dense geographic networks of interaction can also be observed at enormous national and continental scales, running far back in the record of European and American urbanization.

The metropolis provides a connective tissue embracing both individual plants and sets of industrial clusters. The specialized "industrial district" may effectively be the whole metropolis, such as the immense center for steel production that emerged in Pittsburgh, but it is inevitably "lumpy," owing to the presence of industrial districts and sub-regions. Benefits of urban proximity cut across industrial sectors; they do not necessarily depend, as Scott's theory proposes, on intense relations of vertically disintegrated plants operating within a single sector. The interplay of economic activities can be fruitful across extensive divisions of labour. Even specialized industrial cities such as Pittsburgh (steel) or Detroit (automobiles) are creatures of many parts, and most sub-metropolitan industrial districts also embrace more than one industry and commonly shunt into larger penumbrae of localization within the metropolitan area. Boundaries are lumpy, and interactions highly diverse. As the city grows, so does its spatial division of manufacturing; each new industrial zone and its mix of industries forges a niche in the expanding metropolis, and at the same time as it adds a new dimension to the fabric of the metropolitan built-environment.

The geography of labour markets comprises a key component of the multidual metropolis, as Weber and subsequent agglomeration theorists have recognized. The city is one large labour market, but at a finer scale, metropolitan areas embrace many nooks of industry and fields of workers' residences, linked by transit and daily journeys to work. Industries come with distinctive labour demands and labor relations, and these are specialized in local labour submarkets. The internal geography of cities and metropolitan regions thus is marked by the impress of the division of labour and labour market segmentation, as well as larger class and racial divides. This sorting results from many decisions by employers and workers about where to operate and to live, and jockeying for advantage. For example, employees may turn over to reduce turnover and militancy and to increase job-specific learning and identification with the company. Managers often attempt to create a specialized, isolated labour force close to the plant or district. Suburban loci give the employer an advantage to access to the urban labour pool, thereby avoiding the "corruptions" of working-class life and mobilization. A well-oiled employment relation with a subset of workers is an isolated location, frequently on the fringe of the metropolis, may outweigh the benefits of a large urban labour market. The capitalist makes a double calculation of labour markets, at the plant or district level and at the metropolitan level. This latter calculation calculates both fragmentation and disperses the metropolis as employers try to carve out space for their own protection and exploitative aims within the larger urban field of mutual interaction, labour assemblage, and cross-commuting. This logic is in evidence from Homestead and Pullman in the 1880s to Lakewood and Fremont, California, in the 1940s and 1950s.
Building out the metropolis

Recent literature in industrial geography advances our understanding of spatial concentration and dispersal significantly beyond the old models of urban centrality and suburbanization, but it has not made the further link to the build-out of the city. The way that urban areas expand through the mediation of property developers pursuing their sectoral logic in terms of investment, production, and profit, or by growth in the build-out of the city. The way through which the metropolis expands, has four critical elements: property developers, building cycles, financial speculation, and uneven development. They combine to produce the repeated expansion of new constellations of employment, transport and residence at the metropolitan fringe, and the great swaths of construction laid down in the form of peripheral belts, jetting wedges, industrial districts, satellite towns, and edge cities.

Cities have always grown at their edges, but it is erroneous to think that suburban industrial spaces, any more than residential areas, are built on demand without regard for the possible to be made from investment in land. The commercialization of land, property investment, and speculative building have been hallmarks of urbanization and national expansion in the United States and Canada. Property investment at the suburban fringe creates the possibility of enormous gains through the maximization of the returns of capitalized rent. Because prices increase with distance from the fringe, the search for profits in land speculation by property investors, developers, and financial institutions exaggerate the demand for peripheral sites, scripting industry and residents to move to the suburbs and pulling the city outward into the space-extensive form characteristic of North American cities. This holds even for the industrial company acquiring land: suburban sites have offered not only low prices and easier assembly of large plots for factories, but also the promise of speculative profit if surplus acreage is sold or developed. The property industry, moreover, has been particularly inventive in creating complete urban environments, from the housing tract to the regional mall, to the industrial park. These co-ordinated pieces of urban space can be set down in the greenfields like seedlings, adjusting the city to take root more quickly in fringe areas. To make sure investments are realized, promoters try to leverage urban infrastructure and other investors outward in order to "open" their investments. In this way, the extension of urban space has been propelled outward from the city centre.

Waves of investment in property development that correspond to waves of capital investment, job creation and surging economic activity are another essential force in metropolis expansion. Urban growth is neither incremental nor continuous in space and time, but occurs in bursts. The urban land market is notorious for boom-and-bust dynamics in subdivision, financing, and construction, with well-documented 12-25-year cycles in activities such as aggregate building and transport expansion. This space-time rhythm appears as rings of building activity laid down around cities with each investment boom. The private mechanisms generating such property cycles are adjustments of supply to demand that overshoot because buyers and sellers of real estate expect fiercely and time-lags exist between deviation and completion of building projects. Technological and policy changes in buildings, infrastructure and large-
scale developments further modulate and accentuate the industrial land process at the urban fringe. The push of capital into real estate investment due to the build-up of surplus and fictitious capital in the financial system, however, is the most dramatic aspect of property booms, exaggerated in times of financial frenzy in the economy at large such as the 1920s or the 1980s. Key actors are likely to reside in the core city, but the large banks and financiers always have been complemented by upstarts in the suburban fringe who have flat on property development, and by outside investors and lenders from other big cities, and even other countries. While little historical documentation exists about investment in (and financing of) industrial suburban sites, the speculative practices in industrial and suburban land are probably similar.

Finally, city building through industrial suburban growth occurs within an economy that demonstrates persistent inequities in rates of growth and capital accumulation among different industrial sectors and places. Capital flows triggered by unyielding and fluctuating rates of profit and accumulation in the larger economic system give impetus to industrial shifts and property booms. As a result, in places where an effort evolves into new industrial suburban development, great swathes of cities can be laid down in short order before the hand of capital moves on. These temporal-spatial dynamics of capitalist growth have shown up clearly in the metropolitan record since at least the late eighteenth century in North America.

Politics and planning of industrial suburbanization

In addition to the economic logic of industrialization and property development, political intervention and conscious planning have also played a significant part in the intentional process of shaping and reshaping North American cities. Despite the apparent chaos of urban growth, a prevailing vision of urban expansion and suburbanization has guided the plans of industrialists, developers and governments. The construction of cities is more than an exercise in economics; it is invariably about the search for geographic control, or the politics of space. Industrialists and other capitalists are acutely aware of the contradiction between the concentration of people and industry in the city, and they are keen to maintain their prerogatives in the arena of investment, work, and profitability, now termed the "local business climate." Location of the suburban fringe and outlying districts has offered the hope of combining the manifest benefits of access to the city and its agglomeration economies with a degree of freedom from the working class, city politics, and contentious business interests. Because agglomeration effects can be created in outlying districts within reach of the urban center and are operative at the metropole scale, this political-economic vision can be created by means of industrial suburbanization and a space-extensive, multinational city form. This was worked out during the nineteenth century and put decisively into place after the turn of the last century.

Industrialists began moving large-scale operations to the urban edge in the 1800s. These sites were often beyond the city limits, but tended to be absorbed in municipal boundaries expanded. Jurisdictional inclusion in the city was usually a prerequisite for much-needed infrastructure for both factories and worker housing. In the nineteenth century, cities provided government at a level of service and competence higher than other units, and business found ways to intervene decisively despite the popular mobilizations of ward politics. Indeed, local business influences were extremely powerful at garnering local, provincial, state, and federal funding to build key infrastructure and utilities such as canals, sewers, and harbours. These developments often underwrote
suburban nodes and enabled industrialists to consider moving their plants to the metropolitan outskirt.

By the end of the last century, the level of labour militancy and political upheaval associated with reform movements rose. Capitalists became increasingly uneasy about their control of urban geography, and the politics of urban space became a subject of intense debate. Discourse both on the evils of "urban congestion," labour militancy, political corruption, and moral turpitude and on the virtues of the suburban solution to the dense city form became so heated that the visibility of the labyrinthine spaces of big cities was thrown into question. The result was the rebirth of the capitalist class of its economic behavior and the growing desire for suburban exemption among the better off. Industrial dispersal could be seen, thereafter, as not only good for business, but as a social virtue and even a necessity to ward off revolution and degeneracy in the body politic. The attraction of decentralization increased correspondingly, and new outlying industrial sites began to multiply.

Planning was the handmaiden of politics in helping to create and shape suburban industrial space. The most limited form of planning for industrial sites at the urban periphery in the pre-sitellitization era was the formation of land for that purpose. The company town, such as Lowell, Pullman, and Homestead, was an early form of planning undertaken by a single company with a vision of housing provision and proper social life for "the hands," but they were expensive and usually found to be less conducive to labour peace than the distractions of urban life. The industrial park is another basic form of planning: land is carefully prepared, provisioned, and pre-planned by the developer, in concert with local authorities. At a much larger scale, entire industrial suburbs, such as the Chicago Stockyards or South San Francisco, were carefully planned as joint development efforts between industrialists and suburban governments.

As suburban jurisdictions proliferated after the turn of the century, many aimed to attract industry, most worked hard in glove with real estate promoters, and virtually all tried to provide the best business environment money could buy. Some suburban governments around every big city became suppliers and boosters of industrial land away from the central city, often marketing themselves generously and offering incentives to capture new inventories. In some cases, industry could wrap itself in the cloak of specialized city governments, such as West Allis, Gary, Vernon, Emeryville, and Maitomomave, and turn its back on the equations of civic politics and social demands for revenues and responsibility.

Suburban governments took up the call for administrative reform with a vengeance. Most suburbs reduced the power of elected officials and technical appointees by installing professional city managers, planning boards, and public works departments to provide for industry and urban infrastructure—all of whom were nominally independent but worked closely with business. In mixed-use suburbs, zoning arose at the turn of the century as a form of spatial ordering by means of local government. Supplementing building regulations and covenants, zoning became a major tool of land planning and street grids for industrial expansion by the 1920s. While zoning was used to protect residential areas from encroaching industry, manufacturers could also secure their right to operate without interference by complaining and litigating middle-class neighbours. Zoning also could be conveniently altered by conditional planning boards to serve developers' interests.

Industrial parks, company towns, and industrial suburbs are the clearest, bounded units of planning and governance for the purpose of industrial decentralization on a scale larger than the unitary factory site. But they only partly over the scope of planning of the suburbanizing metropolis under the watchful eye of the doyens of civic
capital. The City Planning movement of the Progressive Era is a well-known instance of large-scale intervention, a much-needed attempt to assert formal master plans for development and public works over the seeming chaos of city growth, both at the center and the margins. Such efforts were invariably backed by a combination of bankers, utility owners, industrialists, merchants, and land investors, led by a few visionary architects-plansters and politician-turniemespeople. Civic leaders are forever at work trying to manage growth for personal and collective advantage. They readily grasped the way wedges of manufacturing and new industrial districts were pushing and leaping outward, forming satellite zones beyond the compass of the built-up city. They further understood the need to maintain the necessary links between industrial, residential, and commercial zones, and to install transportation arteries, such as canals, ports, railroads, highways, and eventually airports.

Creating suitable, functioning urban spaces was an ongoing job, with key planners and boosters taking the lead, but equally important private investors, elected officials, city managers, and public-works directors acted in concert to endorse, promote, and provision growth along the lines previously set out. Political alliances and urban growth coalitions were regularly constructed in support of the city-building effort. Thus, the "weave of small patterns," as Sam Wynter calls the remarkable coherence of suburbanization, was more articulate, better orchestrated, and more clearly envisioned by the elite than the metaphor allows, and it was effective in getting the job done under liberal political culture. One may quibble over the degree of ruling-clas coherence and manipulation at work—Cochrane and Miller declare that "it is impossible to exaggerate the role of business in developing great cities in America." Without question, however, a considerable effort went into sorting the whole process from the top.

Conclusion

At the burgeoning edges of the metropolis are found a full panoply of workplace, homes, infrastructure, and commerce that make up the economy and life of the city. These suburban modes have ranged widely in size, character, and relative autonomy from the parent city, depending on circumstances of economic base, class base, political history, and the like. These extrusions of the growing city are not altogether random, but the complexity of metropolitan expansion requires the kind of non-deterministic, non-uniformitarian theory now associated with interpretative geophysics or hydrodynamics. There are no "normal" cities and suburbs, no uniform growth paths, only a way out of the study of history; nonetheless, it is possible to capture the major forces at work behind diverse outcomes. We argue that the combination of geographical industrialization, land development, and metropolitan politics and planning is a theoretical framework that offers a means to advance beyond previous theories at the disposal of urban geographers and historians.

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Notes

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[8] H. Hoyt, One Hundred Years of Land Values in Chicago (Chicago 1933); idem, \\textit{The Structure
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[9] On the war years, see J. Kain, The distribution and movement of jobs and industry, in J.
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Production and Prices (Boston 1930) and A. Burns, Measuring Business Cycles (New York 1957).


[13] While "industry" is generally taken to mean manufacturing, the same principle applies to all economic activities, including commercial and government, that foster jobs and employ people.


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108 Wiggam, op. cit.

109 T. Cochran and W. Miller, The Age of Eclecticism: A Social History of Industrial America (New York 1941) 153. Thanks to Bill Iacu for this quotation.