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

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The conventional story of suburbanization 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 suburbanization. We argue that the outward spread of factories and manufacturing districts has been a distinctive and important feature of North American urbanization since the middle of the nineteenth century. The paper begins with a discussion of how 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. The result has been extensive, multinodal metropolitan regions.

Introduction

> Cities do not grow by accretion or by the obtrusion of excrescences at the periphery, but by the establishment of nuclei in the penumbra and the gradual filling in of the interstices 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 lately has been fuelled by the dispersal of employment to the urban fringe. In the classic studies, 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 sprawling ever outward from its initial point of establishment and repeatedly spilling over political, social and perceived boundaries.[3] The result has been extensive, multinodal metropolitan regions. In this essay, we present a theoretical reinterpretation of industrial suburbanization. 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

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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 Settlement House movements 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 "decongestion" from the inner city to the rapidly growing suburbs, they documented industrial dispersal and pointed to the emergence of metropolitan urban form.[4] Nonetheless, this was forgotten after World War I, when urban research became academically established through the work of urban sociologists at the University of Chicago.[5] 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 riveted the idea of city growth as a process of decanting the core. The leading study of suburbia in the 1920s similarly enshrined the notion of residential periphery and industrial core.[6]

The massive study of New York for the Regional Plan Association, which outlined the movement of industry to the fringe and the development of a multinodal metropolis, was much richer in many respects, but it lacked an interpretative theory.[7] The Depression era saw 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, modified the ecological model to allow for "wedges" and "nodes" of land uses expanding outward, and laid out the parameters of the urban property market and its cycles.[8] However, the Chicago School notion of business core and residential rings was not easily dislodged.

After World War II, a new wave of urban studies appeared. Extensive residential suburbanization again grabbed the spotlight after 1945, despite impressive industrial dispersal during the war.[9] 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.[10] The premise had changed in one remarkable way, however: the central city was now seen as endangered by the pace of suburbanization.[11] 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 predecessor, because it retooled the theory of agglomeration to fit office activities at the center and the theory of "industrial maturation" to explain dispersal.[12] All the same, the Chicago-school model continued to dominate discussions of cities, and economists and geographers who worked on urban location in the banner years of the 1960s busily constructed formal models that posited centrality in the manner of Park and Burgess, or the recently rediscovered von Thunen.[13]

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 suburbanization. While some scholars recognized the role of industry in urban decentralization,[14] most began with the same stylized facts about the central location of manufacturing and rings of residential land drawn out to the suburbs.[15] By the end of the 1980s, a new generation proclaimed the emergence of a shocking phenomenon

called, variously, Exopolis, Postsuburbia, or Edge City. These new employment centres 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 entirely new under the sun rather than as the latest episode in a long-running story of North American urbanization.[16]

The conventional logic of industrial dispersion

Once the outward flow of industrial 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 rehearse 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,[17] virtually all students of urban employment would agree with Allen Scott that centralized production was "characteristic of the large metropolis well into the twentieth century."[18] For most urban and economic geographers, the suburbanization of industry did not occur until after World War II.

The principal factors behind industrial centralization in traditional intra-metropolitan location models are transportation costs and agglomeration economies. The movement of industry to the periphery, in this view, only came about 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.[19] For most writers, the central manufacturing zones result from the minimization of transport costs to the urban market and to centrally placed shipping nodes such as ports and railway depots.[20] This skeletal explanation is fleshed out with a theory of economies of proximity among many small firms concentrated in a limited area. Different versions 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 rail and water and lessen dependence of urban manufacturers on ready access to central rail and harbor facilities. For example, "between 1915 and 1930, when the number of American trucks jumped from 158 000 to 3·5 million... industrial deconcentration began to alter the basic spatial pattern of metropolitan areas."[21] 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 "incubation". 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).[22] Agglomeration loses its grip as industry matures; the shift to mass production eliminates the reliance of small specialized producers on each other by standardizing input-output linkages and bringing a range of activities into large, integrated factories.[23] The result is the dispersal of firms from the core to the city fringe.

The last addendum to the conventional theory of industrial decentralization allowed for the evolution of business organization from small, single-plant firms to the modern corporation. Theories of "corporate location" absorbed the product cycle into an overarching theory of the dispersal of branch plants to peripheral regions and countries from a corporate core.[24] The causal mechanisms are standardized, large-volume flows of inputs and outputs, large-scale plants, and internalized transactions. The corporate umbrella severs the enterprise from external linkages (commodity trade, specialized labour skills, management inputs, etc.), breaking the collective logic of agglomeration and freeing corporate-owned factories to seek cheap land and labour far from the city.

Urban geographical industrialization

The conventional explanation of industrial location in city and suburb has serious problems. In the first place, transportation limits, but does not determine, the location of industry. Undeniably, transport costs influence the geography of urbanism: industry has always clustered near transportation nodes and corridors, whether harbours, rail lines or highways, in a way that leads to transport-tied corridors of industrial land use.[25] Over time, 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 water and rail 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 truck.[26]

Weberian theory, including its 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 and weigh the relative prices 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.[27] The drive to improve productivity through standardization, rationalization of work flow, mechanization, and automation is essential to the history of modern industry going back to the industrial revolution.[28] In such a context of rising productivity and increasing returns to all factors, optimization models simply do not work.[29]

Product cycle-incubator 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 is large, industries mature in a systematic way, and they are well behaved in their locational choices. The evidence, thus, is mixed and quite often contradicts the model. Jewellery 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 dispersers, they can also frequently be found to function quite well very close to the centre of big agglomerations. In either case, they were prominent in cities well before the twentieth century. Conversely, those 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 implantation of a new activity in the city, and the incubation stage is skipped entirely, time and again.[30]

In short, industrial development and location is not a monotonic, 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 altered radically by new discoveries from time to time.[31] 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 those sectors, and episodic additions of wholly new industries to the mix.[32]

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.[33] 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.[34] First, new industrial locales 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 train 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 revolution under capitalism, the space-economy has undergone many changes and upheavals.[35]

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, growing 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 well inside the metropolis and often erasing 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 huge 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 decanting them in the twentieth.

Industrial districts and the multi-nodal metropolis

The process of urban-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-nodal metropolitan area. Classic 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 make-up. 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 attenuated in several ways, as well. Finally, firm and market are not the only forms in which the social division of labor is integrated; territorial aggregation and local governance systems, local and national states, industrial associations, and other organizational tools play a part as well.[36]

The most sophisticated model of urban industrial clustering is that of Allen Scott, who tries to capture the dynamics of industrial agglomeration and decentralization in terms of "transactions costs." Oliver Williamson developed the theory of transaction costs to translate 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 flexibility in the face of changing markets. These generate economies of scope for individual specialists and collective economies for the entire industry.[37]

Scott's work complemented that of European researchers who examined the vigorous industries of the Third Italy and rediscovered Alfred Marshall's idea of the "industrial district."[38] While initially arguing for a small-firm model of clustering, Scott realized that both large and small factories and companies are embedded in industrial districts.[39] Size 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 interaction among dependent parts of production systems, reduce the risk of investment, lessen turnover time, and offer institutions of collective governance. Furthermore, they offer dynamic advantages by stimulating the collective process of learning and providing a milieu of problem-solving and innovation.[40] 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 number 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 such 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.[41] 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 multinodal in the process.

The basic theory of industrial districts, however, begs 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.[42] 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.[43]

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 centre 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 intimate relations of vertically disintegrated plants operating within a single sector. The interplay of economic activities can be fruitful across extensive divisions of labour.[44] 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 shade into larger penumbras of localization within the metropolitan area. Boundaries are slippery, 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 multinodal 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 nodes 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 spatialized in local labour submarkets.[45] 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.[46] This sorting results from many decisions by employers and workers about where to operate and to live, and jockeying for advantage. For example, in order 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. A suburban locale gives the employer arm's-length 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 in 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 labour-relation calculus both fragments 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.[47]

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 of investment, production and profit must be examined because a principle dimension of urban industry or "production" is the construction of the city itself. Property capital's imprint on the suburban landscape can be discerned in various ways, including the shape of lot sizes, building placement, construction type, infrastructure, and improvements. This contributes to the array of urban forms that constitute the everyday vernacular landscape of the city, as well as to striking elements of homogenization across the North American urban system.[48] The urban mosaic, or the mesogeography of urbanization, has four critical elements: property developers, building cycles, financial speculation, and uneven development. They combine to produce the repeated eruptions 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, jutting 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 profits to be made from investment in land. The commodification of land, property investment, and speculative building have been hallmarks of urbanization and national expansion in the United States and Canada.[49] Property investment at the suburban fringe creates the possibility of enormous gains through the maximization of the returns of capitalized rent. Because profits 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, tempting industry and residents to move to the suburbs and pulling the city outward into the space-extensive form characteristic of North American cities.[50] This holds even for the industrial company acquiring land: suburban sites have offered not only low prices and easier assemblage of large plots for factories, but also the promise of speculative profit if surplus acreage is sold or developed.[51] 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 condensed pieces of urbanity can be set down in the greenfields like seedlings, helping the city take root more quickly in fringe areas.[52] To make sure investments are realized, promoters try to lever urban infrastructure and other investors outward in order to "ripen" their investments. In this way, the extension of industrial 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 metropolitan 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 swings 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.[53] The proximate mechanisms generating such property cycles are adjustments of supply to demand that overshoot because buyers and sellers of real estate compete fiercely and time-lags exist between initiation and completion of building projects.[54] Technological and design changes in buildings, infrastructure and large-

scale developments further modulate and accelerate 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 eras of financial frenzy in the economy at large such as the 1920s or the 1980s.[55] 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 wax fat 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 processes in industrial and suburban land are probably similar.

Finally, city building through industrial suburban growth occurs within an economy that demonstrates persistent unevenness in rates of growth and capital accumulation among different industrial sectors and places. Capital flows triggered by unequal and fluctuating rates of profit and accumulation in the larger economic system give impetus to industrial shifts and property booms.[56] As a result, in places where investment surges into new industrial suburban development, great swaths 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.[57]

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 building, 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 irreducibly 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 arenas of investment, work and profitability, now termed the "local business climate." Location at 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 contending business interests. Because agglomeration effects can be created in outlying districts within reach of the urban centre and are operative at the metropolitan scale, this political elbow room can be created by means of industrial suburbanization and a space-extensive, multinodal 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 as 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 influence decisions despite the popular mobilizations of ward politics. Indeed, local bourgeois alliances were extremely successful at garnering local, provincial, state, or federal funding to build key infrastructure and utilities such as canals, sewers, and harbours.[58] These developments often underwrote

suburban nodes and enabled industrialists to consider moving their plants to the metropolitan outskirts.

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 viability of the labyrinthine spaces of big cities was thrown into question. The result was the rethinking by the capitalist class of its economic behavior and the growing desire for suburban escapism 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.[59] The attractions 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 is the private assemblage 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 conductive to labour peace than the distractions of urban life.[60] 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.[61] At an even 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 hand in glove with real estate promoters, and virtually all tried to provide the best business environment money could buy. Dozens of suburban governments around every big city became suppliers and boosters of industrial land away from the central city, often marketing themselves shamelessly and offering subsidies to capture new investors. In some cases, industry could wrap itself in the cloak of specialized city governments, such as West Allis, Gary, Vernon, Emeryville, and Maisonneuve, and turn its back on the exactions of civic politics and social demands for revenues and responsibility.[62]

Suburban governments took up the call for administrative reform with a vengeance. Most suburbs reduced the power of elected officials and political 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.[63] 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 mainstay of land planning and set-asides 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 litigious middle-class neighbours. Zoning also could be conveniently altered by congenial planning boards to serve developers' interests.[64]

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 cover 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-ballyhooed 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 constellation of bankers, utility owners, industrialists, merchants, and land investors, led by a few visionary architect-planners and politician-businesspeople.[65] Civic leaders were 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.[66]

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.[67] Thus, the "weave of small patterns," as Sam Warner calls the remarkable coherence of suburbanization,[68] 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 quarrel over the degree of ruling-class 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 steering the whole process from on high.[69]

Conclusion

At the burgeoning edges of the metropolis are found a full panoply of workplaces, homes, infrastructure and commerce that make up the economy and life of the city. These suburban nodes 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-determinate, non-uniformitarian theory now associated with interplanetary geophysics or hydrodynamics.[70] There are no "normal" cities and suburbs, no uniform growth paths, no easy 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

[1] E. M. Fisher. Quote in C. Clark, Land subdivision, in G. Robbins and D. Tilton (Eds), *Los Angeles: Preface to a Master Plan* (Los Angeles 1941).

[2] S. Warner, *Streetcar Suburbs: The Process of Growth in Boston, 1870–1900* (Cambridge 1962); K. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York 1985); R. Fishman, *Bourgeois Utopias: The Rise and Fall of Suburbs* (New York 1987); J. Stilgoe, *Borderland: Origins of the American Suburb, 1820–1939* (New Haven 1988); R. Walker, The transformation of urban structure in the nineteenth century United States and the beginnings of suburbanization, in K. Cox (Ed.), *Urbanization and Conflict in Market Societies* (Chicago 1978) 165–213.

[3] We realize that many upper- and middle-class residential suburbs were built away from industry and not in concert with it and that any complete theory of suburbanization would include both movements.

[4] On the debates on congestion, urban ills and the benefits of single-family suburbia, see R. Walker, *The suburban solution: capitalism and the construction of urban space in the United States* (unpublished Ph.D. thesis, Johns Hopkins University 1977); G. Wright, *Building the Dream: A Social History of Housing in America* (New York 1981); P. Groth, *Living Downtown: The History of Residential Hotels in the United States* (Berkeley 1995); E. Muller, The Pittsburgh survey and "Greater Pittsburgh": a muddled metropolitan geography, in M. Greenwald and M. Anderson (Eds), *Pittsburgh Surveyed: Social Science and Social Reform in the Early Twentieth Century* (Pittsburgh 1996) 69–87; P. Rutherford, *Saving the Canadian City: The First Phase, 1880–1920* (Toronto 1974); J. Weaver, *Shaping the Canadian City: Essays on Urban Politics and Policy, 1890–1920* (Toronto 1977). For some contemporary views see, H. Ames, *The City Below the Hill* (Toronto 1972 [1897]); E. Pratt, *The Industrial Causes of Congestion of Population in New York City* (New York 1911); G. Taylor, *Satellite Cities: A Study of Industrial Suburbs* (New York 1915); P. Kellogg (Ed.), *The Pittsburgh Survey* (6 vols) (New York 1910–16).

[5] R. Park, E. Burgess, and R. McKenzie, *The City* (Chicago 1925); R. McKenzie, *The Metropolitan Community* (New York 1931). For a Canadian example see C. Dawson, The city as an organism, *La Revue Municipale* (1927) 11–12. For critiques of the Park-Burgess school of urban ecology, see D. Harvey, *Social Justice and the City* (Baltimore 1973) and M. Castells, *The Urban Question* (London 1975).

[6] H. Douglass, *The Suburban Trend* (New York 1925).

[7] R. Haig (Ed.), *Regional Survey of New York and its Environs: Vol. I. Major Economic Factors in Metropolitan Growth and Arrangement* (New York 1927). For Canada see G. Ferguson, Decentralization of industry and metropolitan control, *Journal of the Planning Institute* **2** (1923) 5–12. As far as we are aware, other than Ferguson, there are no comparable studies of Canadian cities before World War II. On the key role of the RPA in New York planning, see R. Caro, *The Power Broker: Robert Moses and the Fall of New York* (New York 1974); M. Heiman, *The Quiet Evolution: Power, Planning and Profits in New York State* (New York 1988).

[8] H. Hoyt, *One Hundred Years of Land Values in Chicago* (Chicago 1933); *idem, The Structure and Growth of Residential Neighborhoods in American Cities* (Washington 1937); National Resources Committee, *Our Cities: Their Role in the National Economy* (Washington 1937); D. Creamer, *Is Industry Decentralizing? A Statistical Analysis of Locational Changes in Manufacturing Employment, 1899–1933* (Philadelphia 1935); G. McLaughlin, *Growth of American Manufacturing Areas: A Comparative Analysis With Special Emphasis on Trends in the Pittsburgh District* (Pittsburgh 1938); J. Delage, L'industrie manufacturière, in E. Minville (Ed.), *Montréal économique* (Montréal 1943) 183–241.

[9] On the war years, see J. Kain, The distribution and movement of jobs and industry, in J. Wilson (Ed.), *The Metropolitan Enigma* (Cambridge 1968) 1–43; C. Woodbury (Ed.), *The Future of Cities and Urban Redevelopment* (Chicago 1953).

[10] Editors of Fortune, *The Exploding Metropolis* (New York 1958); W. Whyte, *The Organization Man* (New York 1956). This literature continued through the property boom up to the crisis of 1975. W. Whyte, *The Last Landscape* (Garden City 1968); M. Clawson, *Suburban Land Conversion in the United States: An Economic and Governmental Process* (Baltimore 1968); R. Fellmeth (Ed.), *The Politics of Land.* (New York 1973). On Canada see R. Blanchard, *L'ouest du Canada française: Montréal et sa region* (Montréal 1953); S. Clark, *The Suburban Society* (Toronto 1966).

[11] R. Beauregard, *Voices of Decline: The Postwar Fate of US Cities* (Cambridge 1995).

[12] E. Hoover and R. Vernon, *Anatomy of a Metropolis* (Cambridge 1959); R. Vernon, *Metropolis 1985: An Interpretation of the Findings of the New York Metropolitan Region Study* (Cambridge 1960); B. Chinitz, *Freight in the Metropolis* (Cambridge 1960); M. Segal, *Wages in the Metropolis: Their Influence on the Location of Industries in the New York Region* (Cambridge 1960). Hoover had already stated the theory of industrial dispersal as a result of industrial maturation in *The Location of Economic Activity* (New York 1948).

[13] For example, D. Slater, Decentralization of urban peoples and manufacturing activity in Canada, *Canadian Journal of Economics and Political Science* **27** (1961) 72–84; W. Alonso, *Location and Land Use* (Cambridge 1964); A. Pred, The intrametropolitan location of American manufacturing, *Annals of the Association of American Geographers* **54** (1964) 165–80; L. Moses and H. Williamson, The location of economic activity in cities, *American Economic Review, Papers and Proceedings* (1967) 211–222; E. Mills, *Studies in the Structure of the Urban Economy* (Baltimore 1972); A. Hamer, *Industrial Exodus from the Central City* (Lexington, MA 1973).

[14] D. Gordon, Capitalist development and the history of American cities, in W. Tabb and L. Sawers (Eds), *Marxism and the Metropolis* (New York 1984) 21–53; J. Vance, *This Scene of Man* (New York 1977); J. Teaford, *The Unheralded Triumph: City Government in America, 1870–1900* (Baltimore 1984); E. Muller, From waterfront to metropolitan region: the geographical development of American cities, in H. Gillette and Z. Miller (Eds), *American Urbanism: A Historiographic Review* (Westport 1987) 105–133; R. Lewis, Running rings around the city: North American industrial suburbs, 1850–1950, in R. Harris and P. Larkham (Eds), *Changing Suburbs* (London: 1999).

[15] Harvey, *op. cit.*; Castells, *op. cit.*; P. Muller, *Contemporary Suburban America* (Englewood Cliffs 1981); R. Walker, *The suburban solution*; *idem*, The transformation of urban structure in the nineteenth century United States and the beginnings of suburbanization; *idem*, A theory of suburbanization: capitalism and the construction of urban space in the United States, in M. Dear and A. Scott (Eds), *Urbanization and Urban Planning in Capitalist Societies* (New York 1981) 383–430; Allen Scott, Locational patterns and dynamics of industrial activity in the modern metropolis, *Urban Studies* **19** (1982) 111–142; *idem*, Industrial organization and the logic of intra-metropolitan location: I theoretical considerations, *Economic Geography* **59** (1983) 233–250; *idem*, Industrialization and urbanization: a geographic agenda, *Annals of the Association of American Geographers* **76** (1986) 25–37; Jackson, *op. cit.*; Stilgoe, *op. cit.*; Fishman, *op. cit.* For Canada see G. Stelter, The city-building process in Canada, in G. Stelter and A. Artibise (Eds), *Shaping the Urban Landscape* (Ottawa 1982) 1–29.

[16] Fishman, *op.cit.*; Muller, *Contemporary Suburban America*; E. Soja, *Post-modern Geographies* (London 1989); J. Garreau, *Edge City: Life on the New Frontier* (New York 1991); R. Kling, S. Olin and M. Poster (Eds), *Postsuburban California: The Transformation of Orange County Since World War II* (Los Angeles 1991); T. Stanback, *The New Suburbanization: Challenge to the Central City* (Boulder 1991).

[17] Taylor, *op. cit.*; Creamer, *op. cit.*; McLaughlin, *op. cit.*; Woodbury, *op. cit.*; Kain, *op.cit.*

[18] A. Scott, Production system dynamics and metropolitan development, *Annals of the Association of American Geographers* **72** (1982) 188.

[19] A. Weber, *Theory of the Location of Industries* (Chicago 1929 [1908]); see also Hoover, *Location of Economic Activity*; Isard, *op.cit.*

[20] Moses and Williamson, *op. cit.*; Mills, *op. cit.*

[21] Jackson, *op. cit.*184; Chinitz, *op. cit.*; B. Chinitz and R. Vernon, Changing forces in industrial location, *Harvard Business Review* **38** (1962) 126–136; Hamer, *op.cit.*; Slater, *op.cit*

[22] Hoover and Vernon, *op. cit.*; Pred, *op. cit.*; Hamer, *op. cit.*; P. Leone and R. Struyk, The incubator hypothesis: evidence from five SMSAs, *Urban Studies* **13** (1976) 325–331. The theory of industrial maturation was first put forward by S. Kuznets, *Secular Movements in*

Production and Prices (Boston 1930) and A. Burns, *Measuring Business Cycles* (New York 1932).

[23] Scott, Locational patterns and dynamics of industrial activity in the modern metropolis; *idem*, Production system dynamics and metropolitan development.

[24] *Ibid.* H. Watts, *The Large Industrial Enterprise* (London 1980); *idem*, *The Branch Plant Economy* (London 1981). Highly influential was the model of international corporate hierarchy of S. Hymer, The multinational corporation and the law of uneven development, in J. Bhagwati (Ed.), *Economics and World Order* (New York 1972) 113–40.

[25] Taylor, *op.cit.*; Hoyt, *The Structure and Growth of Residential Neighborhoods in American Cities*.

[26] A. Fishlow, *American Railroads and the Transformation of the Ante-Bellum Economy* (Cambridge 1962); H. Scheiber, *Ohio Canal Era* (Athens 1969); M. Pudup, *Packers and reapers, merchants and manufacturers* (unpublished MA thesis, University of California, 1983). Gordon, *op.cit.*

[27] For a long time, demand models served as the principal alternative to Weberian models, through the work of W. Christaller, *Central Places in Southern Germany* (Englewood Cliffs 1966 [1935]) and A. Lösch, *Die raumliche ordnung der wirtschaft* (Jena 1944).

[28] K. Marx, *Capital* (New York 1967 [1863]); D. Hounshell, *From the American System to Mass Production, 1800–1932* (Baltimore 1984); B. Page and R. Walker, From settlement to Fordism: the agro-industrial revolution in the American midwest, *Economic Geography* **67** (1991) 281–315; R. Brenner and M. Glick, The regulation approach: theory and history, *New Left Review* **188** (1991) 45–120.

[29] P. Sraffa, The laws of returns under competitive conditions, *Economic Journal* **36** (1926) 535–551; N. Kaldor, The irrelevance of equilibrium economics, *Economic Journal* **82** (1972) 1237–55; R. Walker, The dynamics of value, price and profit, *Capital and Class* **35** (1988) 147–181.

[30] G. Allen, *The Industrial Development of Birmingham and the Black Country, 1860–1927* (London 1929); Haig, *op.cit.*; M. Wise, On the evolution of the jewelry and gun quarters of Birmingham, *Transactions of the Institute of British Geographers* **15** (1949) 57–72.

[31] P. David, *Technical Choice, Innovation and Economic Growth* (New York 1975); R. Samuel, Workshop of the world: steam power and hand technology in mid-Victorian Britain, *History Workshop* **3** (1977) 6–72; C. Freeman, *The Economics of Industrial Innovation* (London 1982); R. Walker, Machinery, labour and location, in S. Wood (Ed.), *The Transformation of Work?* (London 1989) 59–90; J. Mokyr, *The Lever of Riches: Technological Creativity and Economic Progress* (New York 1990).

[32] A. Pred, *op.cit.*; B. Laurie and M. Schmitz, Manufacture and productivity: the making of an industrial base, Philadelphia, 1850–1880, in T. Hershberg (Ed.), *Philadelphia: Work, Space, Family and Group Experience in the Nineteenth Century* (New York 1981) 43–92; P. Scranton, *Proprietary Capitalism: The Textile Manufacture in Philadelphia, 1800–1885* (New York 1983); *idem, A Figured Tapestry: Production, Markets and Power in Philadelphia Textiles, 1885–1941* (New York 1989); R. Lewis, Productive and spatial structures in the Montreal tobacco industry, *Economic Geography* **70** (1994) 370–389.

[33] While "industry" is generally taken to mean manufacturing, the same principle applies to all economic activity, including commerce and government, that invests in places and employs people.

[34] M. Storper and R. Walker, *The Capitalist Imperative: Territory, Technology and Industrial Growth* (Cambridge 1989). See also A. Scott, *New Industrial Spaces* (London 1988).

[35] On the regional dimensions of the same process, see S. Pollard, *Peaceful Conquest: The Industrialization of Europe, 1760–1970* (New York 1981); D. Massey, *Spatial Divisions of Labour: Social Structures and the Geography of Production* (London 1984); M. Marshall, *Long Waves of Regional Development* (London 1986).

[36] R. Walker, A requiem for corporate geography: new directions in industrial organization, the production of place and uneven development, *Geografisker Annaler* **71B** (1989) 43–68; A. Sayer and R. Walker, *The New Social Economy* (Oxford 1992).

[37] A. Scott, *New Industrial Spaces; idem, Metropolis: From the Division of Labor to Urban Form* (Los Angeles 1988). O. Williamson, *Markets and Hierarchies* (New York 1975); *idem, Economic Organization: Firms, Markets and Policy Control* (Brighton 1986); A. Chandler, *Strategy and Structure* (Cambridge 1962); *idem, The Visible Hand* (Cambridge 1977); M. Storper and A. Scott, The geographical foundations and social regulation of flexible

production complexes, in J. Wolch and M. Dear (Eds), *Territory and Social Reproduction* (Boston 1988) 21–40.

[38] G. Becattini, The development of light industry in Tuscany: An interpretation, *Economic Notes* **3** (1978) 107–123; M. Piore and C. Sabel, *The Second Industrial Divide* (New York 1984); C. Sabel and J. Zeitlin, Historical alternatives to mass production: politics, markets and technology in nineteenth century industrialization, *Past and Present* **108** (1985) 133–176; A. Scott and M. Storper (Eds), *Pathways to Industrialization and Regional Development* (London 1992). Also see A. Marshall, *Industry and Trade: a Study of Industrial Technique and Business Organization* (London 1919).

[39] A. Scott, *Technopolis: High Technology Industry and Regional Development in Southern California* (Los Angeles 1994).

[40] A. Scott, The collective order of flexible production agglomerations: lessons for local economic development policy and strategic choice, *Economic Geography* **68** (1992) 219–33; A. Saxenian, *Regional Advantage: Culture and Competition in Silicon Valley and Route 128* (Cambridge 1994); M. Storper and R. Salais, *Worlds of Production* (Cambridge 1997).

[41] Scranton, *Proprietary Capitalism; idem, A Figured Tapestry*; E. Muller and P. Groves, The emergence of industrial districts in mid-nineteenth century Baltimore, *Geographical Review* **54** (1979) 159–178; F. Viehe, Black gold suburbs: the influence of the extractive industry on the suburbanization of Los Angeles, 1890–1930, *Journal of Urban History* **8** (1981) 3–26; G. Gad, Location patterns of manufacturing: Toronto in the early 1880s, *Urban History Review* **22** (1994) 113–138; R. Lewis, The development of an early suburban industrial district: the Montreal ward of Saint-Ann, 1851–1871, *Urban History Review* **19** (1991) 166–80; *idem*, Restructuring and the formation of an industrial district in Montreal's east end, 1850–1914, *Journal of Historical Geography* **20** (1994) 143–57.

[42] A. Amin and N. Thrift, Neo-Marshallian nodes in global networks, *International Journal of Urban and Regional Research* **16** (1992) 571–587; M. Storper, The limits to globalization: technology districts and international trade, *Economic Geography* **68** (1992) 60–93; N. Smith, Geography, difference and the politics of scale, in J. Doherty, E. Graham, and M. Malek (Eds), *Postmodernism and the Social Sciences* (London 1992); K. Cox (Ed.), *Spaces of Globalization: Reasserting the Power of the Local* (New York 1997).

[43] S. DeGeer, The American manufacturing belt, *Geografisker Annaler* **9** (1927) 233–359; B. Thomas, *Migration and Economic Growth: A Study of Great Britain and the Atlantic Economy* (Cambridge 1973); J. DeVries, *European Urbanization, 1500–1800* (Cambridge 1984); A. Pred, *Urban Growth and City Systems in the United States, 1840–1860* (Cambridge 1980); Pollard, *op.cit.*; D. Meyer, Midwestern industrialization and the American manufacturing belt in the nineteenth century, *Journal of Economic History* **49** (1989) 921–37; W. Cronon, *Nature's Metropolis: Chicago and the Great West* (Chicago 1991); Page and Walker, *op. cit.*

[44] Sayer and Walker, *op. cit.* In this the classic agglomeration theorists were right, e.g., B. Chinitz, Contrasts in agglomeration: New York and Pittsburgh, *American Economic Review, Papers and Proceedings* (1962) 279–289: J. Jacobs, *The Economy of Cities* (New York 1969). Delimiting the metropolis is not always easy, however. Boston has always been a particularly tricky instance, with the many satellite industrial towns of eastern Massachusetts. A useful, if innocent, study is F. Blouin, *The Boston Region, 1810–1850* (Ann Arbor 1978).

[45] Scott, *Metropolis, New Industrial Spaces; idem, Technopolis*; J. Vance, *The Continuing City: Urbanization in Western Civilization* (Baltimore 1990 [1977]); S. Hanson and G. Pratt, *Gender, Work and Space* (New York 1995).

[46] A. Saxenian, The urban contradictions of Silicon Valley: regional growth and the restructuring of the semiconductor industry, *International Journal of Urban and Regional Research* **7** (1983) 237–262; K. Nelson, Labor demand, labor supply and the suburbanization of low-wage office work, in A. Scott and M. Storper (Eds), *Work, Production, Territory* (Boston 1986) 149–171; D. Hiebert, The social geography of Toronto in 1931: a study of residential differentiation and social structure, *Journal of Historical Geography* **21** (1995) 55–74; Y. Schreuder, The impact of labor segmentation on the ethnic division of labor and the immigrant residential community, *Journal of Historical Geography* **16** (1990) 402–424.

[47] M. Storper and R. Walker, The theory of labor and the theory of location, *International Journal of Urban and Regional Research* **7** (1983) 1–41; *idem, The Capitalist Imperative*; Gordon, *op. cit.*; S. Buder, *Pullman: An Experiment in Industrial Order and Community Planning, 1880–1930* (New York 1967); B. Berger, *Working Class Suburb: A Study of Auto Workers in Suburbia* (Berkeley 1960); E. Greer, *Big Steel: Black Politics and Corporate*

Power in Gary, Indiana (New York 1979); P.-A. Linteau, *The Promoters' City: Building the Industrial Town of Maisonneuve, 1883–1918* (Toronto 1985); H. Silcox, *A Place to Live and Work: The Henry Disston Saw Works and the Tacony Community of Philadelphia* (University Park 1994); B. Pietrykowski, Fordism at Ford: spatial decentralization and labor segmentation at the Ford Motor Company, 1920–1950, *Economic Geography* **71** (1995) 383–401.

[48] Here one has to look to landscape and architectural studies, such as E. Relph, *The Modern Urban Landscape* (London 1987); M. Conzen (Ed.), *The Making of the American Landscape* (Boston 1990); D. Bluestone, *Constructing Chicago* (New Haven 1991); R. Walker, Landscape and city life: four ecologies of residence in the San Francisco Bay Area, *Ecumene* **2** (1995) 33–64.

[49] A. Sakolski, *The Great American Land Bubble* (New York 1932); E. Blackmar, *Manhattan for Rent, 1785–1850.* (Ithaca 1989); M. Davis, *City of Quartz: Excavating the Future in Los Angeles* (London 1990); M. Doucet and J. Weaver, *Housing the North American City* (Montreal 1991).

[50] Clawson, *op. cit.*; Downie, *op. cit.*; R. Walker, *The suburban solution; idem*, A theory of suburbanization.

[51] Greer, *op. cit.*

[52] R. Wrigley, Organized industrial districts: with special reference to the Chicago area, *Journal of Land and Public Utility Economics* **23** (1947) 180–98; J. Bredo, *Industrial Estates—Tools for Industrialization* (Glencoe 1960); Relph, *op. cit.*; J. Findlay, *Magic Lands: Western Cityscapes and American Culture after 1940* (Berkeley 1992); A. Pratt, *Uneven Reproduction: Industry, Space and Society* (London 1994); C. Ruthheiser, *Imagineering Atlanta: Making Place in the City of Dreams* (New York 1996).

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[55] D. Harvey, *The Limits to Capital* (Oxford 1982); *idem, The Urbanization of Capital* (Baltimore 1986). On land speculations of 1980s, see B. Warf, Vicious circle: financial markets and commercial real estate in the United States, in S. Corbridge, R. Martin and N. Thrift (Eds), *Money, Power and Space* (Oxford 1994) 309–26.

[56] For a fine treatment of the complex time-space dynamics of uneven growth, see M. Webber and D. Rigby, *The Golden Age Illusion* (New York 1996).

[57] The best overall treatment of this phenomenon is for Paris, in D. Harvey, *Consciousness and the Urban Experience* (Baltimore 1986).

[58] Teaford, *The Unheralded Triumph*; M. Schiesl, *The Politics of Efficiency: Municipal Administration and Reform in America, 1880–1920* (Berkeley 1977); W. Bean, *Boss Ruef's San Francisco* (Berkeley 1952); J. Weaver, "Tomorrow's metropolis" revisited: a critical assessment of urban reform in Canada, 1890–1920, in G. Stelter and A. Artibise (Eds), *The Canadian City: Essays in Urban History* (Toronto 1977) 393–418; H. Platt, *City Building in the New South: The Growth of Public Services in Houston, Texas, 1830–1910* (Philadelphia 1983); Collin, *op. cit.*; P. Kantor, *The Dependent City Revisited: The Political Economy of Urban Development and Social Policy* (Boulder 1995); A. Orum, *City Building in America* (Boulder 1995).

[59] Gordon, *op. cit.*; Walker, *The suburban solution; idem*, The transformation of urban structure in the nineteenth century United States and the beginnings of suburbanization; Weaver, *Shaping the Canadian City*; Beauregard, *op. cit.*; Groth, *op. cit.*; Rutherford, *op. cit.*

[60] S. Buder, *op. cit.*; A. Mosher, "Something better than the best": industrial restructuring, George McMurty and the creation of the model industrial town of Vandergrift, Pennsylvania, 1883–1901, *Annals of the Association of American Geographers* **85** (1995) 84–107; M. Crawford, *Building the Workingman's Paradise: The Design of American Company Towns* (New York 1996).

[61] Wrigley, *op. cit.*

[62] J. Teaford, *City and Suburb: The Political Fragmentation of Metropolitan America, 1850–1970* (Baltimore 1979); A. Markusen, Class and urban social expenditure, in W. Tabb and L. Sawers (Eds), *Marxism and the Metropolis* (New York 1978) 90–112; A. Keating, *Building*

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[63] R. Walker, *The Planning Function in Urban Government* (Chicago 1950, 2nd edition); Schiesl, *op. cit.*; R. Fischler, *Standards of development* (unpublished Ph.D. thesis, University of California, Berkeley 1993); J. Fairfield, The scientific management of urban space: professional city planning and the legacy of progressive reform, *Journal of Urban History* **20** (1994) 179–204.

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[65] Walker, *The suburban solution*; W. Wilson, *The City Beautiful Movement* (Baltimore 1989); P. Hall, *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century* (Oxford 1988).

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[67] On growth coalitions, see J. Logan and H. Molotch, *Urban Fortunes: The Political Economy of Place* (Berkeley 1986); J. Mollenkopf, *The Contested City* (Princeton 1983).

[68] Warner, *op. cit.*

[69] T. Cochran and W. Miller, *The Age of Enterprise: A Social History of Industrial America* (New York, 1961) 153. Thanks to Bill Issel for this quotation.

[70] M. Davis, Los Angeles after the storm: the dialectics of ordinary disaster, *Antipode* **27** (1995) 221–241.