DETROIT – THE FALL OF THE PUBLIC REALM: the street network and its social and economic dimensions from 1796 to the present

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Abstract

Detroit, once a “symbol of industrial dynamist”, moved in the post-war era to “a byword for economic decline and urban decay” (AIA 2008). Today, the vacant plots and thinning population in the city have contributed to its characterization as “urban prairie” capturing a dramatic transition of some American cities from economic urban centers to urban deserts, devastated by disinvestment, unemployment and racial segregation. In this paper we analyze the urban network of Detroit and explore how the morphology of the city relates to the economic and socio-cultural forces that took place over from 1796 to 1952, and from 1952 to the present. The first stage captures Detroit’s growth to a manufacturing city and a center of industrial power. The second period corresponds to the gradual decay of Detroit in terms of population decline, erosion of the car industry, and class and race segregation. We argue that the physical patterns of the city acted conjointly with social and economic activity to produce different outcomes in the two periods of study. More specifically, the spatial network that once helped to build the interconnected city of industrial manufacture, was gradually expanded and altered facilitating the emergence of the segregated city, based on a different model of spatial accessibility and economic production. The significance of this observation is in showing that the urban fabric possesses social, economic and environmental potential more than what is usually credited for by policy makers, urban designers and planners.
INTRODUCTION

Detroit has been at the forefront of the re-structuring of American cities around a suburban, consumer-oriented society since the 1950s, a situation widely discussed in research and literature (Cohen 1996, Hardwick, 2004, Longstreth, 1997). What has received less attention, though, is the ways in which the urban fabric of these cities and their spatial, social and economic dimensions can be documented and studied as they develop in real space and through time. In fact, from academic accounts to newspaper reports Detroit’s collapse is seen as a function of socio-economic factors, such as the erosion of the motor industry, racial conflict, and social segregation. These factors have been so devastating that the story of the city’s decline is rarely told in conjunction with the evolution of its urban configuration. In fact, any attempt to describe Detroit in terms of its physical fabric is annulled by the recognition that this fabric has lost its significance. This is because since the 1950s Detroit has been functioning according to a division between a declining inner core and affluent suburbs, connected together (or isolated from each other) by freeways. But as attempts to design a better future for Detroit are taking place (AIA 2008), it is essential to focus on the physical structure of space and the ways in which it relates to the social and economic processes that animate cities. This demand arises for two reasons: first, neglecting this physical structure as the substantive basis of urban life and the 40 square mile of lands that sit empty in Detroit are related phenomena. And second, by excluding spatial configuration from our consideration any attempt to develop sustainable urban futures faces the risk of repeating mistakes of the past causing through simplistic or insensitive interventions irreversible damage.

In 1961 Jane Jacobs argued that interconnected streets facilitate movement through the city, encourage economic activity, and reduce traffic on busy roads (Jacobs 1961). Space syntax studies have over the last twenty years provided theoretical insights and tools that shed light into cities as orderly complexities (Hillier, 2009), as Jane Jacobs had thought them to be in the 1960s. Studying how spaces are interconnected to form local and global patterns that underline cities and their social activity, economic structures, and cognitive factors, space syntax has shown that some of these patterns, and more specifically the interconnected street network, are, as Jane Jacobs believed, more sustainable than others (Hillier, 2009). In this paper we analyze Detroit with a view to understanding how the logic of its spatial network can explain phenomena of growth and decline in the city. Our purpose is to document changes in configuration during these periods, and to show that both the historic boom decades and the current environmental, economic, and spatial problems of the city cannot be viewed separately from its spatial structure. At a time when the majority of studies on sustainability focus on where populations live and how they live, our analysis aims at placing emphasis on the spatial form of Detroit as a way to understand the spatial city, the social city, and the environmental city as one thing (Hillier, 2009, Hillier & Vaughan, 2007).

Our analysis is conducted over an edited series of maps from 1796 to 2009 as reconstructed by Henco Bekkeren (Bekkeren, Thomas, forthcoming). From these maps we have selected those that correspond to major changes in the physical, social, and economic structure of the city tracing its development in two stages: from 1796 to 1952, and from 1952 to the present. The first stage captures Detroit’s growth from an agricultural town, in the sovereign territory of the newly-established government of the United States, to a fast growing manufacturing city in the early 1900s, a center of industrial power during and after both World Wars, to the peak of its vitality up to 1952, when the city reached the maximum of its population and drastic changes in its physical, social and economic structure began to take their toll on Detroit. The second period of the analysis (from 1952 to the present) corresponds to the gradual decay of Detroit in terms of population decline, erosion of the car manufacturing industry, and class and race segregation.
It is important to clarify the limitations of this study, as we based our observations mainly on cartographic material from 1796 to the present and a small range of historical images from Detroit’s central business district. Our findings are subject to additional historical evidence and further research even in the second period of study, where we were able to record retail activity in the whole metropolitan area of Detroit. (The base data for this activity was obtained from GIS databases from the city of Detroit and the Southeast Michigan Council of Governments.) However, in spite of these limitations, the preliminary results of this work set a framework that can help us to understand the city and the combined effects of its spatial configuration, social, and economic life.

THE PHYSICAL, SOCIAL AND ECONOMIC CITY

From 1796 to 1921

Starting in 1796, topological integration picks out the historic nucleus of Detroit set at the intersections of what is currently Jefferson and roughly Woodward Avenue (at the time named St Anne and St Honnerie Avenues) (Figure 1). Previous research has indicated that cities have a generic structure in which the most integrated roads link the center with the periphery so that people can access their core and circulate through them (Hillier & Hanson, 1984). This seems also to be the case in Detroit, which was founded on the crossing of old Indian trails so that it could be easily reached from larger distances (see Dunnigan and Bekkering forthcoming). The location of integration at the crossing of these streets confirms this observation creating an interface between the inhabitants of the town and the outside movement of visitors.

After the destructive fire in 1805, Judge Augustus B. Woodward proposed an expandable plan influenced by Charles L’Enfant’s layout of Washington DC\(^1\). Although Woodward’s city design was abandoned in 1818, its initial unit was constructed, thus defining the start of contemporary Detroit, with an apex at Grand Circus Park and the intersection of most radial avenues at Campus Martius. The least angle choice map at a radius of 1000 meters in 1837 identifies these avenues as the main elements of the global structure of movement (Figure 2). Spreading out like spokes, the radial roads link the center with the edges of the city and intersect with a dense pattern of streets that grew out of the French agricultural strips perpendicular to the Detroit River (Bekkering and Thomas, forthcoming).

In the 35 years after its destruction by fire, Detroit became a cosmopolitan city of 10,000 people\(^2\) (Poremba 2003). By 1879, its population had reached nearly 80,000 as Detroit grew as a commercial city. Residential activity began moving out of the center to make way for business and industry (Poremba 2003). Developers laid out Virginia Park and Indian Village, west and east of Woodward Avenue, as residential districts and the City made them accessible by streetcar. The angular choice maps at radii 10000 and 1000 meters show that the foreground network at both the local and global scales consisted at that time of the radial avenues and a range of streets linking the center with the edges of the city extending along the river (Figure 3, 4). Photographs from this period show commercial establishments near Woodward and Campus Martius, as well as along Woodward - including its foot at the river — and State street, and a mixture of businesses and residential near the intersection of Woodward and Clifford (Figures 5, 6). Although additional historical evidence is required to draw conclusions about land uses and their locations, based on common patterns of

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\(^1\) This plan made use of the original pattern of the crossing of Jefferson and Woodward Avenues and defined large lots, each granted to a resident or group after the fire.

\(^2\) It had eight churches, four banks, a theatre, a museum, a circus, a public garden, a state penitentiary, four printing offices, several different manufactories, three markets, and 102 shops at the time.
growth of historical towns, it is reasonable to suggest that the described choice pattern shows which public spaces were mostly used by movement, and where most of the shops and businesses of the city were located. Our suggestion is that the route network in Figures 3, 4 is not a purely formal matter, but associated since the early stages with the social and economic life of the city. The map of 1921, which we discuss next, will show these characteristics in Detroit more clearly (Figure 7).

At the turn of the twentieth century Ransom E. Olds opened the first large automobile factory in Detroit on East Jefferson Avenue near Belle Isle, while Ford’s Highland Park Plant - designed by Albert Kahn - began producing cars in January 1910. Much of the economic activity at that time centered on the auto industry, a focus which was disrupting the social patterns of the city, expanding its boundaries, and bringing wealth as well as health problems with the growth of the population. Many of the rail lines built in the previous century served to transport materials and products to and from factories, which were spreading along these lines surrounded by housing of workers within walking distance or a short streetcar ride. As immigrant groups began moving in, the Detroit native-born elite started moving to the suburbs. Poremba writes: “car showrooms, gas stations, and storefront businesses along Woodward Avenue disrupted fashionable residential areas, and the mansions were abandoned for more spacious settings” (Poremba 2003, pp. 98).

By 1921 Detroit had reached more than half of its present population size, and was firmly established as an industrial metropolis. Its landscape had changed with the construction of railroads and industrial sites absorbed into the fabric, as the city continued expanding around them (Fishman, in Bekkering and Thomas, forthcoming). The geometric choice map at a radius of 10000 meters shows that the major routes consisting of the same radial avenues as in 1796, 1837 and 1879 were the main connectors of the original nucleus to its fast-expanding urban surroundings (Figure 7). Mapping the location of industrial sites on this figure helps us to see that they developed in close proximity to this global structure of movement. This suggests strongly that along with the railroad system, the super-ordinate grid was also a vital component for the location of industry, as streetcars ran along these routes transporting workers to and from the factory sites.

Detroit’s retailing was also largely dependent on both the street network layout and the streetcar system. Shifting our attention to the choice map at a radius of 1000 meters, we see that the radial avenues are vital components of centrality at both global and local scales (Figures 7, 8). By superimposing the streetcar lines on the choice map at a radius of 1000 meters, a strong correlation between streetcar transportation, the global and the local route structure becomes clear (Figure 9). The combined function of major routes at both scales exposes a natural relationship between local-scale pedestrian movement in the areas situated north, east, and west of downtown, and the wider circulation patterns, including streetcars. In Figure 8 we also see that the local choice grid is very dense in the urban core, limiting the relative segregation of streets, a characteristic also observed in the earlier periods (Figure 3, 4). Previous research suggests that this pattern emerges with the transformation of historic nuclei from residential to commercial areas. As private uses turn to more public ones and houses become commercial, the street pattern creates high levels of inter-accessibility “necessary for a centre to act as a location of inter-dependent activities” (Hillier 2009). This intensification of the grid is a key characteristic of centers emerging from self-organization, reducing travel distances and facilitating economic activity (Hillier 2009). This is clearly a dominant characteristic of Detroit’s centrality in this period, as historic pictures confirm, showing crowded streets, streetcars, trolley lines and commercial activity in Campus Martius, Woodward Avenue, Gratiot, State and Griswold (Figures 10, 11).

This close relation at all scales among the spatial characteristics of the urban layout, commercial activity,

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3 The global scale route network in proximity to the river seen in Figure 8 provides an indication of economic and commercial activity associated with the river.
transportation, and pedestrian movement of Detroit in the 1920s can be best captured by the history of one of its landmark institutions: the J.L. Hudson Company (Figure 12). Initially opened in 1881 as an eight-storey department store at Gratiot and Farmer, it moved to Woodward in the early 1900s, where it grew into the world’s tallest department store building, adorned by the largest American flag at the time (Poremba 2003). Arne H. Frobom explains that in the 1920s most households in Detroit lacked a car, especially the hundreds of thousands of factory workers.

“...the confluence of trolley lines made the location of 1206 Woodward so valuable that it paid Hudson’s to buy and demolish a competitor’s relatively new building at Woodward and Grand River to make room for their mammoth store. The store’s builders assumed that a significant fraction of Detroit’s two million people would come through its doors everyday, and that they would bring lots of money, and come by streetcar. Their assumption was correct for over two decades” (Frobom 1998).

Frobom concludes that the giant Hudson’s store was a product of transit patterns of the 1920s. We believe that Hudson’s and the rich concentration of retail and services in this area were products of a more complex and subtle system than merely the system of transportation. Previous research into the spatial form of cities and their ‘live centers’, namely the uses of retail, catering and markets, suggests that as movement-rich locations attract land uses that benefit from movement, such as shops, the migration of retail to these places attracts more and more movement. This cycle in turn sets up a multiplier effect bringing more diverse uses to that location (Hillier 1999). Downtown Detroit was the outcome of the combined effect of the street network at both local and global scales, through which the streetcar system and economic forces found resonance for their spatial location, finding in turn their spatial position enhanced through the configurational social and economic logic of these locations.

In terms of the background network of the adjoining residential districts, this was well connected with the foreground network, which was stretching out into these areas at both global and local scales. So, movement of residents within a local area interacted with movement from and to areas within the city as a whole, maintaining inter-accessibility. Testimony of this is the streetcar lines. While American streetcar systems were concentrated in downtown hubs where most retail activity was located, well-used streetcar lines also reached out into the suburbs, servicing local clusters of retail at major stops and intersections throughout the urban region.

But Detroit presents an additional dimension to the interdependence of spatial layout, land use, and movement. In the early twentieth century it was a “concentrated manufacturing machine”, “one huge factory”, which demanded vast flows of raw supplies and finished - or partly finished - products from the region and the country, and relied on extensive contributions of labor.

“The materials were stacked in piles of ore, coke and fluxstone, and marshaled in railroad yards full of supplies and parts. The labor was housed in dense residential neighborhoods, often sorted out by ethnicity – just another factor of production to be stockpiled. Detroit’s 1920’s neighborhoods were spacious for their time, but still tight enough to be connected with the factories by trolley.

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4 It is important to note that linear extension of these sites along the railroad belt line meant that they affected interconnectivity between the urban core of the city and the areas built in the outer limits. This can be clearly seen by the scarce pattern of intersections of the lines forming the global route network on either side of Highland Park, and either side of the railroad lines on the eastern and western edges of the city. With the expansion of the motor industry after the First and Second Word War the plants were entirely absorbed into the city, creating discontinuities in terms of the structure of routes and the interconnectivity levels of residential communities (Figure 11, 12).
And the workers’ families were served by a concentrated retail center that included the world’s largest store building” (Frohob, 1998).

According to Thomas Sugrue, “factories, shops and neighborhoods blended together indistinguishably enmeshed in a relentless grid of streets and a complex web of train lines” (Sugrue, 1996). This urban-industrial landscape had a logic that defied common observation but this analysis finds that the spatial layout, automobile manufacturing, and the retail economy of the city were inseparably bound in a symbiotic relationship through the combined function of interdependent dimensions: the local and global network but also its streetcar and railway systems intertwining production and commercial activity in the city. This was set against a background of residential neighborhoods whose relative spatial segregation was marginal5.

From 1952 to the present

The Hudson’s Company and its landmark building serve as metonymic expressions of the rise and fall of Detroit and how the spatial layout has consequences for the ways in which cities come to life or fail to thrive. In the postwar era, the federal government accelerated suburban growth by supporting housing affordability via tax policies and a series of housing acts that built on the Housing Act of 1934, which established the Federal Housing Administration, thus enabling hundreds of thousands and then millions to live outside the city. The growth of suburbs came in tandem with the growth and reconfiguration of wealth in metropolitan regions, which further buttressed these new communities (Cohen 1996, Fishman 1989). The shortage of central-city housing, government subsidies in the construction of highways and houses, planning ideologies and racial conflict and segregation patterns brought about a new residential and economic landscape.

As Detroit reached its population peak in the early 1950s, these economic and social changes had already begun, but they were in early stages and had not yet affected the physical street structure of the city to a significant degree. The foreground network at a radius of 10000 meters remained in the 1950s roughly the same as in 1921, with the exception of the new growth areas on the west side of the city, where the pattern of intersections of the orthogonal lines is denser than in the rest of the city as small blocks contained dense factory worker housing (Figure 13). Local-scale centrality at a walkable radius of 1000 meters is based on a coincidence of the local and global network of routes occurring at the intersections of the radial avenues with the Jeffersonian Grid, similar to previous eras of the city (Figure 14). This pattern of local centers establishes good levels of interconnectivity between centers and residential activity for most of Detroit neighborhoods. Similar to the aforementioned analysis of London, a local center in 1950s Detroit was never a far walk away, and downtown was never a far ride away.

However, as people became gradually more dependent upon their cars and their manufacturers became more powerful, the streetcar lines were reduced to the radial boulevards (Figures 13, 14) only to be shut down in 1956 - when the last of the streetcars was removed and diesel buses took over - while growing traffic congestion and parking problems discouraged commercial expansion in central locations. For many new suburban areas in the United States, shops were built along major roads in “commercial strips” that

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5 Although additional research into the distribution of residential communities is required, an interesting question at this point is whether there was a spatial correlate between the success of certain immigrant groups and their location. A study of immigrant “ghettos” in London by Laura Vaughan found a clear spatial component in the success of some immigrant groups as opposed to others. The immigrant settlements were located at the edge of economically active areas of the city, which enabled the immigrants to participate in the economy of the region (Vaughan and Penn 2006, Vaughan 2005).
consumers could easily reach by car, with more visionary suburban developers integrating modest local retail centers of their own into their planned residential areas (Longstreth, 1997). The retail landscape changed with a landmark development in the Detroit metro region: the construction of the Northland Mall in 1954, the first of a series of malls to surround the city of Detroit, designed by visionary Viennese architect Victor Gruen (Wall, 2006). With a background in retailing, Gruen realized the magnitude of suburbanization and the force of the car and focused this new development on the new consumer of Detroit, an increasingly affluent (and increasingly female) suburban car owner looking for the convenience of a large selection of goods under one roof. It comes as no surprise that Hudson’s moved to Northland in nearby Southfield Michigan in 1954 and was the main tenant of the mall as an exemplar department store, providing a selection of goods similarly convenient in location to those it had provided to its downtown customers who had arrived by streetcar in previous decades.

“It was no longer possible to attract the huge concentrations of people that the big store [Hudson’s] was designed to serve, and which it needed to survive. People weren’t riding transit anymore because they had cars, and you can’t assemble that many people in a city by car every day. And because they had cars, they had a choice. Even conversion of many of the city’s blocks to parking lots wasn’t enough. The cost of land showed up in parking charges. The cost in convenience was invisible, but it was even higher” (Frohman 1998).

An additional significant force was at the base of the decentralization of retail in Detroit: the construction of the interstate system within the city. While Detroit was the proud inventor of the first urban freeway in the 1940s, the introduction of the Federal Highway Act in 1956 rapidly accelerated the addition of a new dimension to the Detroit region, mostly hidden beneath its surface: speed [closely related of course to the overall car-orientation of the city, its industry and its inhabitants]. Breaking through the urban fabric, dug in trenches, the new connectors of the city created fast links to the new suburban communities, the region, and the rest of the nation. While at the scale of the city and its surrounding region the interstate system was built to connect, at lower-scale levels the construction of sunken freeways resulted in spatial segregation. Within the city of Detroit the interstate system broke through the urban fabric, disrupting the links between its downtown area and the neighboring areas and between the streets in the residential districts. This can be clearly seen by examining a section of downtown Detroit and its adjoining areas in 1952 and 2009 (Figures 15, 16). These figures show that as the downtown core was encircled by expressways on three sides, its street network became isolated from the surrounding neighborhoods in the city. In a study of the reshaping of the city blocks in downtown Detroit, Brent D. Ryan refers to additional factors that reduced the interconnectivity of streets. Among these was the construction of Lafayette Park, a significant urban renewal project with housing designed by architects Mies van der Rohe and Ludwig Hilberseimer located on the east side of downtown in a formerly low-income area called Black Bottom. This project and its successor phases, Elmwood I, II, and III (see Thomas chapter in this book) erased the original street grid and replaced it with modernist superblock development. Other large projects that altered the street grid involved the construction of large facilities like Cobo Hall in the southwest portion of downtown and the Renaissance Center, an office, hotel, and retail complex, in the southeastern portion of downtown. More recently, the construction of large casino and sports stadium complexes has caused further alteration of the finely-grained downtown street grid. The construction of the freeways around downtown Detroit however, has been among most destructive forces, accounting for almost a quarter of its morphological changes since 1896 (Ryan, 2000).

A remarkable aspect of the interstate freeways is that while they had devastating effects on the smaller scale of the neighborhood street grid, the major thoroughfares of Detroit were largely left unaffected by
their construction. The choice network at a radius of 10000 meters at present day still consists of the radial avenues of Woodward, Grand River and Gratiot and the Jeffersoni Grid spread throughout the city and its greater metropolitan area (Figure 17, 18). The spatial configuration of the choice route super-grid has hardly been altered by the construction of highways over the past 60 years, and the highways themselves play no inter-connecting role in the spatial layout having low values of least angle choice. However, although the interstate roads do not feature in the super-grid, they are crucial in determining the locations of current large-scale retail and commercial developments, all located around and beyond the edges of the city. In order to study the spatial relationship between shopping centers and the interstate system we combined the measures of angular distance and metric distance from each expressway exit. We then superimposed the two measures to find those locations that are both metrically close and require a low number of turns from these exits. Figure 19 shows a clear correspondence between major retail and employment centers or ‘edge cities’ and the combined measure of metric and angular step distance. Built to cater to suburban car owners, these new centers have been strategically located within a small range of turns and within short metric range from the exits of the interstate system so as to optimize the potential to be reached by customers.

Centrality in the early twentieth century Detroit was the outcome of the combined function of the global and local scale network. In contrast, today a different form of centrality exists, no longer defined by an interdependence of global and local levels of street configuration, but rather by speed of access, and by how close to an exit of an interstate highway a function or destination can be located (in metric and geometrical terms). The new freeways introduced a dimension to the distribution of movement independent from the spatial logic of the street network, allowing higher speeds than the legacy urban grid it connected, significantly altering the perception of centrality and distance.

However, centrality as a function of the spatial layout can still be found within the present-day Detroit metropolitan region. This dimension follows the spatial logic of the large-scale and small-scale network as in the first period of time that we looked at, with the difference that it now operates according to a movement economy based on car access. Looking at the distribution of land uses, we see a tight relationship between through- movement and retail at both global and local scales. The large-scale network (choice at a 10000 meters radius) captures the aforementioned commercial strips, a typology of exchange that is not only present throughout the Jeffersonian super-grid of Greater Detroit, but also can be found in the landscape of many American cities as a byproduct of the spatial logic of large-scale vehicular traffic (Figure 20). However, the small-scale street network (choice at a 1000 meters radius) also captures local centers located at intersections along the main routes radiating out of Detroit and at intersections of roads that belong to the super-grid (Figure 18).

These local centers can be divided into two kinds. The first kind consists of relatively small concentrations of commercial and service activities within the city limits of Detroit (with the exception of a relatively large concentration in the downtown). The second type of local centers comprises historic downtown centers of suburban communities such as Plymouth, Pontiac, Birmingham, Royal Oak, St. Clemens, Grosse Pointe, Lincoln Park and Wyandotte. The inner-city centers are byproducts of the large-scale and the small-scale network but fail to interact with the background network of residential activity. This is because barriers and “holes” in the urban fabric generated by the interstate, abandoned industrial sites, and railway lines cause major disruptions to the connectivity levels between the foreground network of choice and the background network of the residential streets. As a result, the residential network now fails to overcome the natural pattern of spatial segregation associated with residential activity. In organic cities and in the first stages of Detroit’s development, however, the residential network overcame separation through the interconnectivity
of global centers, local centers and residential communities.

On the other hand, in the local centers of suburban districts the combined effects of the large-scale and small-scale spatial relations enhance interconnections. Situated at the heart of affluent communities, these districts establish spatial links between commercial and residential uses. Interfacing movement with economic activity, community services and residential uses, these centers define ‘pedestrian pockets’ of walkable grids. This is in contrast to many of the local neighborhoods inside the city limits, which are devastated by population decline, unemployment, poverty, lack of amenities, and dereliction. The former local centers consist of the matter that makes places, a spatial culture that intersects economic activity with pedestrian flows and social co-presence. In contrast, the latter local centers occupy a public realm where spatial mechanisms have lost their economic and social potential. This is because they can no longer generate movement between scales, as the large-scale “connectors” between areas are not the local street network but the interstates and the Jefferson Grid.

THE SPATIAL NETWORK AND THE FUTURE OF DETROIT

While we realize that spatial polarization and social inequality are a result of complex factors requiring further research and an extensive description beyond the spaces we have examined and the limitations of this study, our preliminary results show that in principle spatial configuration plays a role in how cities can be strong, healthy and sustainable or move in the opposite direction. The interdependence of spatial layout, commercial activity, and movement was the major force that shaped the city in both periods of our study. However, this tight relationship in the first period revolved around a movement economy that exploited the links between local- and global-scale urban networks; the foreground network of economic activity and the background network of residential communities; and transportation, pedestrian activity and commerce. In the second half of the twentieth century the structuring of Detroit separated the foreground network from the background network, and the economy of movement from the culture of place. In other words, the spatial configuration, which in the early twentieth century acted conjointly with economic and social factors to build a dynamic interconnected city, changed in the second half of the century in a way that facilitated the segregated, declining city. It can be argued that Detroit’s history has long been one of parallel but reverse dimensions, from the road network, the streetcar system, and the railway network that moved the Motor City of the 1920’s to the construction of the interstates in the late twentieth century. Supported by transportation and planning ideologies and conceived as the way of improving inter-city mobility of goods and people, this latter intervention drastically altered and superseded the configuration of the city, as centrality was no longer an issue of street inter-connectivity on the local and global scale, but became a matter of distance from the ever-growing interstate system.

The transformation of Detroit from a prospering industrial city of interconnected streets to a polarized city of a low-income urban core and affluent suburbs is widely known. What is less analyzed and argued, though, is the implication of spatial configuration in this transformation as revealed by this analysis. In the second period of our study, Detroit’s street network shifted from one with a dominant component of economic production and embodiment of culture to a socially and economically abandoned domain. In the 1920s the street network acted in conjunction with the streetcar system, commercial activity, and industrial manufacture based on the economy of production. In the second period, after the abandonment of the streetcar system, and before the subsequent decline of industry, the street network became fragmented and neglected for the interstate network. Dug under Detroit’s historic grid and breaking up its residential
streets, the expressways became the “railways” and “streetcar lines” of the second half of the century. But instead of transporting industrial supplies and workers to and from factories, these new conduits now “transport” consumers and goods in mobile storage units – cars - to and from cities, homes, and shopping malls. Detroit and the transformation of its street network and spatial culture reflect a shift from an economic model of industrial production to an economical model of consumption. As in the second half of the twentieth century Western economies moved from production-led to consumption-based, the combined effect of the global and local urban network, which in the first period of study facilitated industrial and retail development in the city, lost its capacity to sustain the growth of retail activity at a large-scale. This is because depending on large-scale surplus of income consumption economies require large-scale access to products and services, large-scale rentable area and parking facilities. They thus, seek locations that are accessible by car-owners and suburban consumers at a large-scale. In Detroit and other American cities this became possible through the foreground network (the Jefferson Grid) and the interstates⁶. Capturing the shift from a production to a consumption economy in very distinctive way, this study shows that different social, cultural and economic forces have different spatial correlates, and that space is not a neutral container but an integral component of the social, economic and environmental life of cities.

A 2008 report by the American Institute of Architects (AIA) explained that today’s Detroit population has more than halved compared to its population in 1950, and is still dropping at an accelerating rate, with many square miles comprised of vacant land. In an attempt to consider the future of Detroit and to seize opportunities still available in the city, including its strategic location, its institutions, its rich heritage and its diversifying reservoir of creativity and innovation, the report put forward propositions demanding a radically different thinking from that which brought Detroit to its present condition. These propositions were structured around a “new vision” based on “sustainability, economic opportunity and social equity for all of its people”. The ways in which this vision can be achieved is through “economic development, land reconfiguration, increasing density, urban agriculture, green energy/green economy and sustainable transportation” (AIA, 2008, 5-7). Important as these factors are, our study shows that the city is not the sum of these domains against a background of its physical structure, but a complex interdependence of the physical, the environmental, the economic, and the social. The spatial network should be studied intensively in its own right, and in relation to these domains, in order to understand how such visions can turn language-based ideas to spatial reality, and policy plans to successful implementation.

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⁶ Similar changes also characterize traditional organically grown cities, such as London, where large-scale retail development takes place at major intersections of motorways with orbital roads. But while in Detroit and American cities the large-scale shopping malls have been detrimental to the local-scale urban centers, in London the two kinds of retail development co-exist.


Figure 5

Figure 6
Figure 9
Figure 12
Figure 13
Figure 18