

**Distribution centers among the rooftops: the global logistics network meets the
suburban spatial imaginary**

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Abstract

Changes in shipping over the last several decades have altered the geography of freight transportation in the U.S. in a number of ways. In particular, significant volumes of freight traffic are now traveling inland to the Ohio River valley and the Midwest. Within metropolitan areas here, large amounts of land on the suburban fringe are being developed as logistics or distribution centers in municipalities that are experiencing otherwise typical greenfield suburban growth. This article explores this development through a case study in the southwest suburbs of Chicago that are experiencing rapid growth in both population and freight distribution activity. Here, in a so-called global era of placeless flows, land use and economic development continue to be based in large part on a spatial imaginary of bounded and discrete territories, with long-term environmental and economic consequences for the political units in question.

Keywords: *suburbanization, logistics, freight, spatial imaginary, territory*

Introduction

Over the last three decades, the geography of freight distribution has changed significantly. Innovations in technology, management, and communications have led to a shift away from traditional warehousing and wholesaling towards container shipping and distribution centers. International trade and traffic have increased tremendously as global assembly lines stretch around the world. As a result, cities and regions have become units within a larger system of logistics rather than self-contained distribution systems of their own. At the same time, congestion in traditional port cities has led to new terminals along coastlines and farther inland, leading to a new geography of distribution (Bowen 2008, Cidell 2009).

As metropolitan areas continue to grow, economic activity spreads farther out from central cities. On the edges of metropolitan areas, suburban planners are dealing with the pressures of population growth, land use changes, and maintaining a robust tax base. In a world of flows and networks, these planners work within bounded territories. As the basis for land use planning within the U.S., these small territories are still highly relevant despite the supposedly placeless world structured by the global logistics network. The land use decisions that are being made today within those territories regarding the location and appearance of the facilities that constitute the global logistics network will have impacts on the landscape, resource use, and economic and social geography of metropolitan areas for decades to come.

Traditional port cities like London, Singapore, and New York have been well-studied in terms of the changes to their landscape and functionality over time (Bird 1963). More recent work has focused on new or greenfield port complexes, including the many

newcomers in East Asia (Wang and Slack 2000, Lee et al. 2008) and Europe (Marcadon 1999). Inland ports, however, have received less attention, in part because of their relative newness and in part because they do not fit the standard definition of a port (but see Hesse 2008). For example, although Chicago's maritime port handles significant volumes of bulk material, its functions are minimal in terms of container shipping. However, in terms of the number of containers passing through on a yearly basis, the Chicago *region* is the third largest "port" in the world, behind only Hong Kong and Singapore (Testa 2004).

Chicago's history as a transportation center is fundamental to its identity (Cronon 1991). Beyond the discourse of Chicago as gateway and hub, there are the rail tracks laid down starting in the 1840s, followed by the interstate highways from the 1950s, that still act to physically concentrate U.S. freight traffic through this metropolitan area. However, the rail yards and facilities within the city itself are outdated and undersized, meant for the maintenance and storage of rail cars, not the container cranes and access roads needed for intermodal transfer and the instant turn-around demanded by the global logistics system. While the city itself is modernizing its rail infrastructure via a billion-dollar public-private partnership known as CREATE (with a tagline of "Keeping the GO in Chicago"), shippers and distributors are taking advantage of agricultural land on the fringe of the metropolitan area to build distribution centers and intermodal yards on a scale not previously seen.

Of course, these facilities are not being built on a blank slate. There are local governments already in place, with residents and existing commercial and industrial developments that suddenly have hundreds of semi-trucks per day traveling their local

roads. As developers try to strike a balance between proximity to infrastructure and to markets while also having enough open land to build million-square-foot one-story buildings, the municipalities where they choose to build are the same ones at the current crest of the wave of suburban growth that has been extending outwards for well over a century. These local municipalities are at the leading edge of the new global logistics network *and* the leading edge of suburbanization, making planning decisions based on considerably different kinds of land uses than the traditional single-family housing, commercial strip shopping centers, and industrial development. However, suburban planners also operate under an existing understanding of how development occurs in their communities, so that million-square-foot distribution centers are simply another potential tax revenue and job source to be considered alongside office parks and "lifestyle centers". The implications for the built environment are tremendously important, and understanding how suburban planners see their world and plan accordingly is therefore key to understanding the changing geography of the global logistics industry.

In particular, despite academic and popular imaginaries of global networks and spaces of flows (e.g, Castells 2000), the infrastructure and facilities that constitute the physical embodiment of transportation and communication networks are being built in individual municipalities operating under their own goals and constraints. What this paper describes as the *suburban spatial imaginary* is based on viewing the world in these discrete territories: on balancing revenues and services, on planning and zoning to keep incompatible land uses physically separate, and on the chronological order of different waves of development passing across the territory. In that sense, global logistics is no different from retail or manufacturing: it is a source of jobs and traffic, a payer of taxes

and user of land, and a long-lasting part of the built environment. On the other hand, municipalities have been able to imagine new ways of planning and regulating development by adapting past experiences to the special characteristics of distribution centers and intermodal yards.

Freight-related development has to fit into a series of bounded territories whose planners are responsible for balancing different types of development and keeping the municipal budget intact. This is not to say that the boundaries of those territories are not subject to change, or that the rights and responsibilities of municipal government are set in stone, as the general rescaling of government and governance in the U.S. and elsewhere over the last several decades has shown (e.g., Swyngedouw 2000, Brenner 2003, Goodwin et al. 2006, Jonas and Pincetl 2006). However, in all of the talk of global flows and nodes supplanting places and territories, it is important to remember that land use decisions are still made by people working within a spatial imaginary of bounded territories who seek to incorporate flows of goods within a global network in a way that benefits each territory, and in turn shaping the geography of the network itself.

The following section summarizes recent changes in distribution and logistics, including their implications for the production of space. This is followed by an introduction to the concept of a spatial imaginary and existing work on the territorialization of suburbs. The fifth section introduces the case study of Will County, IL, one of the fastest-growing counties in the country and a national center of intermodalism and distribution, and then explores the suburban spatial imaginary and its relation to the global logistics network. The conclusion explores the implications of the suburban spatial imaginary for freight-related development and for how geographers and others theorize space.

The global logistics network

Ever since the innovation of containerized shipping in the mid-twentieth century, flows of goods have been speeded up, shifted around, and altered in a number of dramatic ways. Transportation geographers have documented the impacts on port terminals (Hayut 1981), port cities (McCalla et al. 2004), shipping companies (Notteboom and Merckx 2006), and world regions (Frémont and Soppé 2005, Fowler 2006). However, this work has tended to focus on infrastructure and vehicles to the exclusion of existing land uses and larger social and economic processes. This section outlines four of the many recent changes in the freight distribution sector, explains how those changes have affected the geography of that sector (largely within the U.S.), and then explores how other geographies have been affected by changes in distribution. While all of these changes are intertwined with and influence each other, they are separated out here for purposes of clarity.

Recent changes in logistics and warehousing

The first change of note is the shift to *containers* for carrying goods over long distances. Malcolm McLean's 1956 innovation revolutionized not only shipping but the entire production system for most manufacturing sectors (Slack 1990). By shipping goods in a standardized metal container, the physical unloading of ships was reduced from hundreds of longshoremen taking many days to a handful of workers taking a few hours (Levinson 2006). The reduction in labor costs and theft caused transport costs to drop dramatically and allowed companies to change production locations to minimize other costs such as labor or compliance with regulations.

Second, while the *globalization of production* over the last several decades is an outcome of many different factors, the reduced transportation costs due to containers is one of the most important. As a result, many industries have shifted to long commodity chains or global production networks, dividing up the production process to minimize costs at each stage, since the cost of transporting a half-finished product between factories is minimal (Hesse 2006). While there has been a considerable amount of literature on the nature of these chains or networks, there has been little that explores the way that transportation matters to these production processes (but see Hall 2004 and Cidell 2008b).

Third has been the trend towards *just-in-time* production: making what is needed for a later stage in the production process just in time to implement it, not days or weeks ahead of time to take up space on a shelf (ULI 2004). Although JIT was developed within closely-linked Japanese factories where travel time was not a major cost, the concept soon spread across the Pacific and through the global production networks of many different industries. To save money on storage space, companies forged closer relationships with their parts suppliers and customers *and* their shipping and distribution suppliers in order to keep inventory in motion. The JIT model has more recently been extended to retailing, driven by Wal-Mart in particular (ULI 2004), and may even contribute to reduced environmental impacts by reducing the time that vehicles either travel short distances or idle (Kia et al. 2003).

One of the advantages of standardized containers is that they can travel on ships, railcars, and trucks without modification, leading to the fourth trend of note: *intermodalism*.

Particularly since the 1980 deregulation of trucking and rail within the U.S. (Slack 1990), the easy movement of containers from one mode to another has become a key part of the

system. Transfer points therefore are no longer break-of-bulk points where goods are unloaded by hand and transferred to another type of vehicle, but intermodal yards where giant cranes lift giant boxes from one vehicle to another. Integrated service providers such as UPS and FedEx use intermodalism within their own business operations as well. There are two main consequences of these recent trends. First, reliability has come to matter more than distance or travel time (Lasserre 2004; Capinieri and Leinbach 2006). If a supply chain stretches across several continents, especially if it employs just-in-time methods, it is vital to know precisely when items will arrive. Firms have therefore outsourced their shipping functions to third-party logistics providers (3PLs) who specialize in moving goods in a timely fashion. Secondly, movement, not storage, is the main goal (Rodrigue 2008). Warehouses are of minimal use; logistics management and distribution centers determine the spatial nature of the distribution sector (ULI 2004). Parts and products are not meant to sit on a shelf, but to be in constant motion along the supply chain until the final product reaches store shelves. This need for high through-put rather than storage has led to the demand for vast one-story buildings outside congested city centers, which means a suburban location.

The changing geography of logistics and warehousing

Many authors have argued that because of these trends, the location of distribution activity now occurs according to its own logics, not those of its neighbors in the supply chain (Lasserre 2004, Rodrigue 2006, Hesse 2007). In other words, rather than warehouses being located in certain places because of proximity to customers or suppliers, distribution centers are being located based on their own spatial logics of access to transportation and lots of room. Traditional hinterlands are shifting as fewer

major ports serve larger regions and even whole continents. This "new spatial logic" (Hesse 2007) and rise of "virtual" or "informational" space as a factor (Aoyama et al. 2006) suggests that the system is now being driven at the global scale, not that of the region or the locality.

On the other hand, it is hard to see how this new spatial logic is different from what existed before, described in a historical context: "The major determinants of wholesale/warehousing location are proximity to customers/clients, reasonable real estate costs, access to interstate highways, availability of appropriately skilled workers, and reasonable costs of doing business" (Glasmeier and Kibler 1996, p. 740). Proximity to customers and clients might no longer mean direct spatial proximity as with a warehouse district in the heart of the city, but access within a day's travel as part of a road or rail network. Real estate costs are certainly one of the main driving forces behind the suburbanization of freight (Hesse 2006), as is access to highways and rail (Rodrigue 2006, Cidell 2009). Labor is largely neglected in the literature, but proximity to a low-skill, low-wage workforce remains an important consideration for distributors, especially for seasonally-oriented enterprises (Grueling 2008). Finally, lower taxes, weaker unions, and other "reasonable costs of doing business" are all motivations for distributors to relocate to the suburbs. In a broad sense, the location factors of logistics activity are largely the same as those of warehousing and wholesaling activity, although the resulting geography of distribution *is* different.

In particular, the initial change in the geographies of warehousing and logistics as a result of the aforementioned trends was spatial concentration on land and at sea (Slack 1990). Maritime traffic has become concentrated in larger ships and in fewer ports since the

1970s, leading to stress on port and inland infrastructure while competitors down the coast watch their market share decline. Within the U.S., rail terminals have become more concentrated because of the capital required to provide the necessary equipment for handling containers and because of consolidation within the industry itself (Slack 1990). Similarly, over the last few decades, distribution centers have become fewer in number and larger in size, with a hinterland or market area of an entire continent (Lasserre 2004). As a result of this growth, terminal areas have become congested, particularly as port-owned land is turned from related uses such as warehousing into more direct uses such as cranes. This in turn pushes ancillary uses farther inland and leads to satellite facilities to relieve dockside congestion, thus leading to *decentralization* at the metropolitan scale (Slack 1999, Hesse 2006, Cidell 2009). Furthermore, existing urban railyards are often not suited for the demands of intermodalism, since they were built for switching rail cars between tracks, not moving containers between train cars and truck chassis (Grueling 2007). With little room to expand within the central city, new intermodal facilities must be built on the far edges of the metropolitan area to attain the elusive balance between sufficient infrastructure and labor on the one hand, and large parcels of vacant land and lack of congestion on the other (Rodrigue 2006). Such facilities are often built wherever land is available, thus going up in a piecemeal fashion that does not take into account the planning goals of local municipalities (Slack 1999).

Most work on the new geographies of freight transportation seems to assume that distribution centers are being built on a blank slate. Rodrigue (2004, 2006), for example, argues for the "mega-urban region" as the functional integration of cities based on freight flows, similarly to how metropolitan areas are defined based on flows of commuters.

"Mega-urban regions are dominantly structural and functional entities since they do not fall into any specific jurisdiction and are rarely recognized as such" (Rodrigue 2004, p. 151). However, this belies the fact that mega-urban regions are in fact composed of multiple jurisdictions with their own land use and economic development policies, their own residents, and their own needs for jobs and property and sales tax income. McCalla et al.'s (2001) study of intermodal terminals focused on facilities adjacent to airports or ports and found that the most common nearby land uses were other transportation, industrial, and residential. They do mention that the industrial land uses are largely a consequence of municipalities wanting to keep similarly incompatible uses away from housing, although the proximity of ground transportation links ends up being attractive to residential land uses as well. Additionally, Hesse (2002a) notes that municipalities often claim not to be trying to attract logistics land uses even when they are. Still, the point of view of the municipality is not usually considered (an exception is Hesse's (2008) study of the metropolitan spatial pattern of logistics-related development in Berlin-Brandenburg and California's Bay Area-Central Valley).

Perhaps the reason for this blind spot lies in the close connections between transportation researchers and practitioners, who themselves demonstrate the disconnect between freight transportation and land use. For example, Pellegrin (2001) notes in his case study of the Port Authority of London that "It is likely that other organisations and large-scale operators in the rail freight or port industry will have experienced many of the circumstances described for the Port of London: a poor understanding of their industry's requirements from the land use planning system; a pre-occupation with local issues at the expense of strategic and regional concerns; weak national and regional policies; and,

inconsistent policies between neighbouring local plans” (p. 17). In other words, if communication and understanding do not exist between port authorities and shippers on the one hand, and local government on the other, it is reasonable that researchers have not made that connection, either. The following section describes how the concept of a spatial imaginary might be used to understand local government perspectives on the global logistics network.

Spatial imaginaries

The theoretical framework of spatial imaginaries is one way to make the connection between municipal governments, the global logistics industry, and suburban landscapes. The concept of a spatial imaginary has coalesced within geography around ideas from sociology and political ecology. Castoriadis (1994) says that a social imaginary "does not create 'images' in the visual sense, but it creates forms which can be images in a general sense, but centrally are significations and institutions" (p. 138). A social imaginary is how a particular society conceives of itself, how it explains the world around it and its own characteristics. As Gaonkar (2002) describes the concept, "It gives us a sense of who we are, how we fit together, how we got where we are, and what we might expect from each other in carrying out collective practices that are constitutive of our way of life" (p. 10). Such imaginaries are neither rigid nor homogenous, but subject to renegotiation by various members of society. Peet (2000) adds a third meaning of "imaginary" by arguing that the purpose in part is to apply processes that are already understood to the unknown future. An "imaginary" therefore does not only explain what has already happened, but provides a framework to conceive of the future and tools to change its world or to deal with new situations.

The concept of a social imaginary has been enhanced to incorporate the role of space and place. Part of how a society sees itself has to do with where it is located in space, how spatial processes work, and how that society both affects and is affected by such processes¹. All social imaginaries are therefore shaped by the places in which they are developed (Peet 2000, Wolford 2004). This is not to say that such imaginaries are fixed in stone or adopted by all of the individual members of a society; rather, they are open to conflict and negotiation as environments and societies change.

One of the most well-known spatial imaginaries is that of globalization, either its initial conception as a monolithic external force that has to be accommodated or resisted, or the later interpretation of it as a compilation of locally-constructed policies and discourses. For example, globalization has been constructed by the New Zealand state to shift the spatial imaginary of the islands from "Britain's farm" to a self-contained national economy to a node in the space of flows around the Pacific Rim (Larner 1998).

At a smaller scale, Sieverts' (2003) concept of the *Zwischenstadt* imagines modern cities not as historical cores sprawling out into natural landscapes, but as in-between spaces where city and nature coexist in a new type of urban form. Significantly, this is not merely a description of the landscape, but a framework for understanding "the type of built-up area that is between the old historical city centres and the open countryside, between the place as a living space and the non-places of movement, between small local economic cycles and the dependency on the world market" (Sieverts 2003, p. xi).

Sieverts argues that we should take these spaces seriously since they are the present and future of the city, rather than nostalgically looking to restore an Old City/countryside dichotomy.

Within metropolitan areas, the location decisions that firms make are based in large part on the spatial imaginaries of their owners, including how they conceive urban vs. suburban or exurban spaces (Winther and Hansen 2006). Based on survey data, "service firms produce different imaginary spaces of location even within the same context (the urban landscape of Copenhagen)" (*ibid*, p. 1402) based on their differing needs in terms of accessibility, land costs, and access to labor and how likely it is that different places will be able to fill those needs. Urban economic geography is therefore shaped by understandings of place in addition to traditional factors such as accessibility and affordability.

Finally, Marston et al. (2007) seem to be arguing to do away with spatial imaginaries altogether, at least from the researcher's perspective. They critique the globalization literature for first separating the global and local and then needing to find some way to put them back together. They argue that sites need to be the starting point for their own construction, that rather than starting with a preconception of scalar relations or territories. Their example of Nollywood, the emerging Nigerian film production center, illustrates how by its very name, this place is defined as a lesser version of a pre-existing Western site and thus fails to take into account the unique social, economic, and political contexts of moviemaking in Lagos. They argue for a flat ontology that brushes aside scale and territory in favor of examining the actual connections between sites and people. Marston et al.'s contribution is valuable in terms of getting researchers to consider how their preconceptions of space and place might influence their results and limit their political praxis. However, it ignores the fact that out in the world, individual actors *do* produce spatial imaginaries that work in terms of fixed territories, hierarchical scales, and

meaningful lines on a map (Cidell 2008a). These actors are making decisions that affect the material landscape, economic activity, and social patterns of development based on spatial imaginaries that are hardly fluid or borderless. Land use is regulated at the local level in the U.S., and transportation is planned and paid for by actors at a range of different scales. Local officials' understandings of space therefore have significant implications for the form and shape of the built environment and the suburban landscape.

Suburban territories

Marston et al. (2005, 2007) are only the most recent to question the meaning and usefulness of political territories as an analytical tool. One of the earliest political geographers to raise doubts about the nation-state as a meaningful territory is Agnew, whose "territorial trap" (Agnew 1994) sums up how academics and policymakers have fallen into the assumption that national territories are fixed containers of space, and some of the consequences this has for analysis. Whether "unbundling" (Anderson 1996), "hollowing out" (Jessop 1994), or "rescaling" (Brenner 1999), political geographers and others have argued that to continue to think of the world as divided into a series of discrete territories is out-of-date (if indeed it ever was accurate) and prevents us from understanding how the world works.

However, more recent work has pointed out that in many ways, territorial borders are more meaningful than ever. Specifically, while flows of capital and high-skilled workers have become more mobile, other people are not so fortunate (Newman 2006). In the U.S. context, national security concerns have led to a tightening of borders (Winders 2007); in the EU, even as internal borders have relaxed, new member states have to fortify their borders with their neighbors who are not currently part of the Union (Bialasiewicz 2003,

van Houtum and Piipers 2007). In this context of re-territorialization, Mansfield (2005) argues for rethinking the national without reasserting it, "seeing the national as not as a discrete scale but as a dimension of political economic practice" (p. 458).

Similarly, the idea of the suburbs as a series of discrete, autonomous territories is hardly new, particularly within the context of highly-fragmented U.S. metropolitan areas. A significant and long-standing literature on the suburbs includes Tiebout's (1956) understanding of citizens as consumers, seeking out the best "bundle" of taxes and services within a municipality and "voting with their feet" by choosing a residence based on municipal characteristics. As Savitch and Vogel write,

"Territorial realignments of local government may be used to lock in resources (defensive incorporation) or provide a wider tax base for sharing resources (redistributive policies). They may be used to absorb revenue-producing industry, attract taxable property, and shift demographic balances. Changes in local boundaries also have great strategic significance by determining the construction of new roads, utility lines, schools, and other public institutions. Boundary change...has been used to gain advantages in awarding intergovernmental aid, to extract political benefits, and even to regulate social behavior" (2004, p. 761).

Motivations such as lower taxes, the prevention of cross-subsidies to poorer neighborhoods, the inclusion or exclusion of industrial facilities, and flat-out racial exclusion have motivated the creation of new municipalities for decades (Miller 1981, Viehe 1981, Johnston 1984, Barlow 1991)ⁱⁱ.

Empirical evidence confirms the effects of suburban territorial differentiation. For one, residents do *not* see administrative boundaries as merely an abstraction when it comes to decisions like which school district to live in or which municipality to pay property taxes to. Property values can rise by up to 16 percent depending on which school district a particular parcel is located in (Clark and Herrin 2000). The large-lot zoning available in jurisdictions with undeveloped land attracts wealthier homebuyers in part by excluding the poor (Voith and Gyourko 2002). On the non-residential side, economic activity has been shown to grow more slowly in jurisdictions with higher taxes, especially on commercial property (Dye et al. 2001).

This is not to argue, however that suburbs should be seen *only* as discrete units. There is too much evidence that boundaries do shift and change, and that processes at larger scales make state municipal borders less relevant or more dynamic than historically was the case. Rather, the suburban spatial imaginary *as expressed by municipal planners* fits this discrete, bounded description while incorporating flows of people and capital, and it has a significant impact in shaping both the suburban landscape and freight distribution. As explained above, inland ports and intermodal facilities are being touted as the solution to growing dockside congestion. However, those facilities are not dropped upon a blank landscape, nor upon a landscape whose land uses are governed by a single jurisdiction, as would be the case with a traditional central-city port. The landscape that already exists is bounded into suburban units where planners and city officials' goals and desires may shape the location of these facilities. In this context, intermodal yards and distribution centers are another type of land use to be regulated and dealt with *in municipal terms*, not

as part of a global logistics system. The case study of logistics-related development in Will County, IL, illustrates this argument.

The suburban spatial imaginary in Will County, IL

In order to understand how the changing geography of the global logistics industry is shaping and being shaped by local units of government, the case study of Will County, IL, was chosen for more detailed study. This section explains the choice of case study, followed by the results of interviews with suburban plannersⁱⁱⁱ. Data were gathered via interviews of thirty minutes to an hour with one city planning or economic development officials in each of eleven municipalities, along with the director of the Will County Economic Development Commission^{iv}. Interviewees were sent a list of questions ahead of time to give them an idea of what they would be expected to discuss. Interviews were held in the city offices, either in the employee's office or in a conference room; one was conducted by phone. All interviews were recorded with interviewees' permission and later transcribed. The results were analyzed according to the method of open coding (Emerson et al. 1995).

"The Midwest Empire"

Located approximately sixty-five kilometers (forty miles) southwest of Chicago, Will County is roughly centered on the city of Joliet (Figure 1). It is criss-crossed by I-55 and I-57 from north to south and I-80 from east to west. Historically, cities such as Lemont, Lockport, and Joliet grew as Illinois and Michigan Canal towns (Conzen and Brosnan 2000), while other municipalities such as New Lenox and Bolingbrook were incorporated much more recently. This southwestern quadrant of the Chicago metropolitan area has historically been slow to develop due to its bisection by the Des Plaines River and the

high amount of institutional and protected open space. However, as housing continues to spread ever farther outward from the center of Chicago, Will County has become the nexus of growth in the region. From 2000 to 2006, it was the tenth-fastest growing county in the country in terms of numerical increase in population, the only one in the top ten to be located outside the Sunbelt region (U.S. Census Bureau 2007).

At the same time that population has been increasing, so has the number of distribution centers along the I-55 and I-80 corridors^v. In fact, Will County ranked eleventh in terms of the increase in the number of warehousing and freight firms between 1986 and 2005 out of the roughly three thousand counties in the U.S. The construction of CenterPoint, comprised of a large intermodal yard owned and operated by the BNSF railroad and surrounded with a series of regional distribution centers, has significantly increased intermodal activity in the county and contributed to the region becoming the third largest container port in the world (WCCED 2009). Regional distribution centers located within the study area municipalities include Michaels' craft stores, Dunkin' Donuts, Sears, and Walmart.

The head of the Will County Economic Development Commission refers to the county as a "laboratory" for logistics-related development, underlying its uniqueness within the U.S. In fact, the mid-2000s saw an average of 8 million square feet of industrial space being built per year, nearly all in distribution (Weber 2006). By comparison, the Inland Empire of Southern California, with a population six times that of Will County, has been adding an average of 20 million square feet a year during the same time period (Rosta 2009).

Beyond the facts and figures, Will County is an excellent case study in the relationship between global logistics flows and local land use planning because of the intersection between standard suburban growth and this new type of land use. The farm fields of Will County were likely to be paved over in the 2000s with residential or commercial development of whatever type; the uniqueness of distribution centers therefore intersects in interesting ways with the standard process of suburban development and makes this place a valuable opportunity for study.

A suburban spatial imaginary

To reiterate Peet's (2000) argument, one of the functions that a spatial imaginary serves is to enable people to take spatial and historical processes that are already known and understood and apply them to the unknown future. In other words, the general pattern by which suburban development has happened in the past is the same way it is likely to happen in the future, even if the specifics are different. Suburban planning officials have a spatial imaginary that is based on decades of growth outward from the center of Chicago, mediated by local processes. Even with the new, global-scale changes that are becoming grounded in their towns, their imaginary remains the same. This is not to say that they are naïve or unaware of the scale of economic activity that intersects their borders. Nor does it mean that the territories themselves or what happens within them does not change, or that interviews with different populations (such as developers or distribution center workers) would result in the same form of the spatial imaginary. There are four main characteristics of this suburban spatial imaginary, described in detail below. While all have to do with activities taking place within the discrete territory of the municipality, all of those activities have causes and consequences that stretch beyond

municipal borders, of which planners are well aware. The point is that the tools which planners have to work with and which they use to shape economic development and land uses are based on the notion of discrete territories. Their creativity in dealing with new types of land uses is therefore contingent on using these existing tools and territories.

Balancing development and services

Thanks to the politically fragmented nature of American metropolitan regions, municipal planners frequently expressed the desire to balance taxes and services as well as jobs and housing within their borders^{vi}. As municipalities expand, they are unlikely to annex pre-existing residential development because that means providing additional services without getting additional revenues. Annexing land for new housing is different because developers are usually obliged to provide water, sewer, or road infrastructure as part of the permitting process. One of the most common concerns raised about logistics-related development was therefore not traffic or the amount of land involved, but the lack of tax revenue. Because each city's budget is fueled by activity that happens within its borders, it needs to balance revenue and services based on its territory. The large amount of land taken up by a distribution center results in a relatively small amount of tax revenue per acre, making it a less desirable land use compared to some.

A number of planners described their town as a bedroom community, characterized by distinct directional flows of traffic during the peak hours or mostly residential development. These planners expressed the desire to have more jobs in town so that residents would not have to commute to neighboring or more distant municipalities, with a preference for office-related rather than logistics-related development.

On the other hand, when asked, planners with significant logistics-related development within their borders didn't know if those employees were local residents, although they presumed they were coming from all over the region. This suggests that demonstrating that your residents *can* work within their city's borders has political value, even if the results are not verified over time.

The function of a bounded territory

Bounded territories are not necessarily viewed as a constraint; they can also be quite useful. Most interviewees brought up existing or planned boundary agreements between themselves and their neighbors. These agreements are authorized in the state of Illinois to enable two municipalities that have unincorporated land between them to draw a future border without having to annex the land first. The most common reason cited for these agreements was to protect municipalities from being played off each other by developers who would seek incentives from two or more city governments to get the best deal.

The reduction in "border wars" over annexing particular parcels was a secondary motivation, based in part on past experience and in part on stories from other municipalities. There are also benefits to knowing ahead of time how much infrastructure would eventually have to be provided, both so that individual developers could be asked to contribute proportionately and so that an excess of infrastructure would not be built (for example, a surplus of wastewater treatment capacity). In short, boundary agreements work to reduce uncertainty on the part of municipalities, developers, and residents: as one interviewee put it, stabilizing the "white space on the map."

At the same time, borders are important to the relational constructions that planners used to explain local economic geography. Distinctions such as tax rates, infrastructure

provision, levels of congestion, and availability of retail opportunities were cited as to explain why their municipality was better or worse off than their neighbors. Importantly, these distinctions were not drawn in response to questions about differences between themselves and their neighbors, but in response to questions about development *within* the municipality. For example, when asked about the history of logistics-related development within their town, a common response was to talk about how their taxes are lower than nearby communities, particularly those on the other side of the county line. Borders could be certainly dysfunctional as well; for example, there are sixty-six different units of government within Will County with some responsibility for road maintenance (county, townships, municipalities, etc.), with noticeable results in terms of deteriorating pavement quality, particularly after the recent increases in truck traffic. In addition, municipalities on either side of a border might have very different ideas about appropriate land uses (e.g., high-end residential vs. freeway-oriented commercial). Nevertheless, for the most part, boundary agreements and their effects are more positive than negative.

Territory within territory: landowners and parcels

Besides this relational construction of difference, interviewees also drew on internal factors to explain patterns of development. For example, many of the communities on the north and east sides of the study area have little logistics-related development because the remaining vacant parcels are too small to meet developers' requirements:

"We just don't have that much additional land left available to us that's contiguous to us that we could annex into the village because we are fairly—not completely landlocked, but fairly well landlocked by our

neighbors...So, the plus of that is we're not really worked up about somebody coming in and grabbing up hundreds and hundreds and hundreds of acres of land for distribution facilities. I guess the downside of that is that even if we wanted it, we wouldn't have the land for one of these mega facilities, so to speak. But, I'm not sure we'd want that, being largely a residential community and really wanting to see more retail and commercial growth and a balance."

Other physical constraints such as waterways, ravines, or public lands restrict development within a municipality. In other words, the general trend of logistics-related development locating farther to the west and south within the county has to do with parcel size, a clear example of bounded territory shaping the economic landscape. This is not to say that these smaller parcels will remain undeveloped indefinitely, only that they are not suitable for distribution centers or intermodal yards^{vii}.

Accessibility is another key feature of individual territories in that it varies tremendously from place to place, and it was one of the most common explanations given for the location of logistics-related development. Municipalities with good freeway access cited it as a reason for industrial or warehousing development; municipalities without an interchange identified this lack as the reason they had been passed over. Planners generally discussed accessibility at an even smaller scale than that of the municipality, focusing on the distance to the freeway from particular corridors or even parcels to explain the economic landscape.

Many also spoke about their success in keeping industrial land uses physically separate from residential land uses through zoning restrictions. If two municipalities both meet

this goal, then the pattern that results would be alternating land uses—industrial from one municipality back-to-back with another, followed by residential back-to-back with the next neighbor. Indeed, this describes the general pattern of land use along the I-55 and I-80 corridors, an artifact of the bounded territories within which land uses are regulated.

Timing of development

Finally, the suburban spatial imaginary includes a clear temporal order of development, with each of four stages having its own spatiality across and within municipalities^{viii}.

This order can be described as arising from a combination of market forces and the actions of planners to attract or discourage specific types of development within each stage. First was the historical town center, based on traditional location factors such as a waterway or railroad, with existing older residents, commercial centers, and some small industries. Secondly, most communities in this area have been experiencing rapid growth since the mid-1990s, which planners consistently expressed as "rooftops" (not "residents") moving southward and southwestward from existing suburban development. "Rooftops" did not seem to have a well-defined spatial process, but were based largely on which landowner was willing to sell to a developer, creating a patchwork of incorporated and unincorporated land across the study area.

The third stage of development was retail or commercial, with a spatiality based on key nodes and corridors rather than allowing for development as parcels become available. New residents count on commercial development as being the natural next step, while older residents were perceived as being annoyed or upset by growth. However, while the desired development could probably be found by residents a short drive away in a neighboring municipality, the importance of sales tax for municipal revenue means that

municipalities have to persuade this kind of development to locate within their borders, even if the identical stores are available a few miles away.

The fourth stage of development, job creation, was less well-defined, probably because most of the municipalities in question are just entering this stage. The spatiality of this development depended on different location factors: visibility and access from the freeways. Another important aspect was the aesthetics of the facility in question, specifically landscaping and an attractive building. Separation from residential land uses was also thought to be important for both residents and business owners because of the possibility of complaints over noise, traffic, and appearance. Some municipalities are *laissez-faire* about attracting jobs, relying explicitly on regional and national market trends, which for this region includes logistics-related development. Others wanted to see more office-type development (as mentioned above) and had created new zoning codes specifically to encourage white-collar corporations, not distribution facilities, to locate on parcels with high accessibility. Rarely if ever did a planner mention deliberately trying to attract distribution centers or other logistics-related development via tax abatements or other tools.

The order of development usually stopped there. While interviewees spoke about their locational advantages vis-à-vis lower taxes and less congestion than their neighbors closer to the central city, they did not voice any concerns that they might be headed down that same path. A few mentioned being nearly built-out or having little vacant land, a few mentioned remodeling older commercial development for new uses, but most focused on their current point of progress through the spatial imaginary. In particular, only two planners expressed concern about the long-term effects of the logistics trend,

wondering what kind of reuse a million-square-foot building could be put to in a decade or two when international transportation networks had shifted again. It is perhaps not so strange that at the same time the spatial imaginary sees suburban development as a process that continues in the same fashion from one territory to the next, the *one* area people seem to think it will be different for them is in terms of the negative effects being avoided.

The suburban spatial imaginary meets the global logistics network

In short, planners working within the suburban spatial imaginary described here see a wave of growth breaking over county and municipal borders when previous places are full, driven by high land values and taxes and attracted by existing infrastructure, highway access, and undeveloped land. To a large extent, it does not matter to a municipality if new development is a chain restaurant or a regional distribution center. What matters is that it provides jobs for the "rooftops," property taxes for the school district, and property and sales taxes for the municipality.

The revolutionary phenomenon of just-in-time distribution combined with global-scale logistics networks therefore means four things for the average suburb:

- relatively few jobs per square foot;
- cleaner operations than traditional industry;
- lower desirability than high-tech or office development; and
- low to moderate sales tax income.

In fact, it was only representatives from the physically largest units of government or those containing intermodal yards that referred to the national scale of the processes driving the logistics industry, much less anything global. The spatial imaginary of land

use planners remains largely bounded within their own municipal territories, *contra* the global talk that characterizes most discussions of logistics and distribution.

At the same time, there is also the creative aspect of the spatial imaginary. Municipalities do not passively sit by and watch their landscapes change, nor do they fail to take advantage of some of the unique characteristics of logistics-related development. Based on their understanding of economic development and municipal financing, they take action to encourage or discourage particular kinds of land use. For example, one village recognized that distribution centers pay property tax (which mostly goes to the school district and not the municipality) but not sales tax. They therefore put incentives in place to encourage distributors that have a small amount of retail, such as a plumbing company that sells to contractors. A number of municipalities have created special zoning categories for the kinds of firms they want to attract—office-based R&D or a regional business center. These are uses that would be new to the municipality in question, but mimic existing development in neighboring or far-away municipalities.

A second example of using existing tools creatively is the aesthetic component of many zoning codes. The physical manifestation of logistics-related development is often a large box of a building, with few if any windows but dozens of loading docks lining the sides. Many communities have altered their zoning codes to require berms, landscaped medians, fencing, setbacks, and other features, even if it might discourage developers:

"We don't allow any of the big, ugly, gray boxes; the real plain, big, ugly—we don't allow any metal buildings. Hardly anybody does anymore, but we require masonry; we require 360 degree architecture. And, that probably does eliminate us from some companies that go to

more rural areas where they may – Iowa and further, more central Illinois, places where they may not have to live up to some of those requirements.

But that's okay."

The best example of creativity in shaping development is the model ordinance regulating container storage developed by a coalition of public and private actors (WCCED 2008). Concerned about the aesthetic impact of large container storage lots (in addition to the lost tax revenue from a parcel with nothing built on it), several municipalities are in the process of adopting this ordinance. While landowners can not be forbidden from doing with their land as they wish, some restrictions can be put in place. For example, containers can only be stacked two or three high; landscaping including berms is required around the property; and parcels must meet minimum size requirements and be served by rail. The latter two components in particular work to limit the number of available parcels and to restrict them to areas that are already industrial. In addition, a fee in lieu of taxes, based on the amount of square footage that would otherwise occupy the property, is being considered by several local municipalities. As noted in the quote above, this may be pushing some developers or logistics firms to seek land in municipalities without such restrictions, pushing freight-related development even farther from its traditional center-city location.

Conclusions

"It was like anything else; it was our turn." This planner from a Will County municipality that is home to dozens of regional distribution centers went on to say:

"You can put together all the fancy glossy brochures and you can go to all these conventions and whatever but until you get to a point from an

economic standpoint where land is much more expensive and DuPage [County]'s taxes are higher and costs of building and doing business there is higher, [then] they're going to discover Will County."

The inevitability expressed in this statement exemplifies the suburban spatial imaginary as part of a series of nested, bounded territories that mediate the spatial pattern of economic development. It also expresses the relational construction that is part of that imaginary. In that sense, logistics is "like anything else": a land use with its own economic and environmental implications that has to be regulated and planned for using existing tools and strategies, done with an eye towards what neighboring communities are doing, but retaining a focus on activities within municipal borders.

So what does the suburban spatial imaginary mean for the logistics industry? On the one hand, it means that what appears to be one global economic system, extending through nodes and networks across featureless space, is actually located within multiple scales of government. The regional-scale process of logistics-related development has three components: an intermodal yard, a series of distribution centers, and places to store and/or park containers. When this system is implemented in a pre-existing set of territories, it becomes specialized across space so that one municipality gets an intermodal yard, one gets regional-scale distribution centers, one gets truck stops and container parking, one gets metropolitan-scale distribution centers, etc^{ix}. This means that whatever the market will bear at the time when development comes to a community, whatever land parcels are still available for development, that is the built environment that will exist for the next several decades. For developers, that means pushing ever outwards to find the elusive balance between market access and traffic congestion (the

latter ironically exacerbated by their own activities) while trying to cluster distribution centers around intermodal yards.

At the same time, each municipality has unique characteristics that mediate the kind of development it gets: a restricted amount of land to work with, shaped by rivers, wetlands, freeways, and railroad tracks; irregular borders shaped by boundary agreements and which landowners have sold to which developers; and preexisting landowners who do or do not want to be annexed. They also have individual histories (not explored in this paper) of near-bankruptcy, legal disputes with neighbors, or rerouting federal highways to redirect traffic flow around their historic downtowns that shape city staff and elected officials' willingness to pursue particular paths of development. Therefore, the specific results of this paper might not be generalizable to other regions, although the overall concept of considering how a suburban spatial imaginary intersects with global logistics flows certainly is.

The recentralization of freight and logistics activity in suburban areas is driven by different factors than the original concentration in central city areas; that is well-known (Hesse 2008, Cidell 2009). What is less well-understood is the intersection of freight and logistics activity with spatial processes of suburbanization. In particular, as this article has shown, suburban planners are working within a spatial imaginary of discrete, bounded territories, faced with a wave of development coming out towards them from previously-developed suburbs, internally growing outward from their historic centers, and shaped by one or more of the factors listed above. The resulting landscape is strongly segregated between residential and commercial land uses, and it focuses on freeways as the main points of accessibility.

The characteristics of the people who are creating a spatial imaginary can be very important (Larner 1998). The spatial imaginaries of logistics developers and real estate agents are presumably quite different from city staff and would probably lead to different results in terms of explaining the intersection of suburban development and the global logistics network. So would a focus on workers and the local labor market, including issues of unionization and temporary work. However, since city planners are the people charged with planning land uses and economic development, their spatial imaginary is likely to have a lasting effect on the landscape and economic and social processes and therefore is the focus of the current project. Further research from a private sector point of view would likely elucidate a different spatial imaginary and a different understanding of the importance of territory in shaping the global space of flows.

In conclusion, it is important not to lose sight of the role that territory still plays in mediating global flows of people and goods and in shaping the landscape. While a flat ontology would serve researchers well in making us aware of, and resisting, "the hegemony of spatial abstractions that circulate within 'globe talk'" (Marston et al. 2007, p. 46), it is also important to understand the spatial imaginaries that *do* exist out in the world and that shape both material and discursive landscapes. Because spatial imaginaries include a creative as well as a conceptual component, they also provide opportunities for adapting to change and should not be thought of as static or immovable. Such spatial imaginaries might include networks, flows, and global spaces—but they also include territories.

List of figures

Figure 1. Will County, IL, and its surroundings. Source: Author.

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ⁱ This is in contrast to the *geographical imaginations* of, for example, Said (1978) and Gregory (1994), whose focus is on how particular *places* are envisioned and how those visions are represented and reproduced.

ⁱⁱ Ironically, this local power to create and regulate territory is only possible through the devolution of authority from larger scales such as the state and country; I thank one of the anonymous referees for pointing this out.

ⁱⁱⁱ Because of the focus of the study on municipal government and the response of local land use planners to logistics-related development, the interviews were with representatives of local government, not developers or the logistics industry.

^{iv} The interviews represent all but one of the municipalities located along the interstate highway corridors where logistics-related growth is occurring in the county, although not all of the municipalities interviewed

are experiencing that growth themselves. In only one case was the interview with an economic development official rather than a planner; while the content of their responses was not significantly different, they were the only person to ask who was funding this research project (and were surprised to learn that no one was).

^v At the time of the interviews, the economic recession was just beginning; although development activity has dramatically slowed down in Will County since this research project began, all signs indicate that it will resume as the economy improves.

^{vi} As one of the referees pointed out, municipalities often deliberately do *not* internally balance jobs and housing or taxes and services, preferring to take advantage of neighboring jurisdictions' higher services or willingness to provide affordable housing. However, in the context of the interviews I conducted, the desire for both balances was frequently and strongly expressed.

^{vii} In fact, for some communities these small parcels posed a problem because of their attractiveness as container storage sites (see below).

^{viii} The exception to the rule established here was the village that is home to the BNSF intermodal yard and the CenterPoint Distribution Center, where jobs have preceded residents. However, the interviewee here spoke of the village as an aberration to the normal order of suburban development, therefore reaffirming the normal order as described below.

^{ix} While this article did not look at the impacts of logistics-related development in central cities, that is part of the story, too. Existing railyards within the city of Chicago are being redeveloped through CREATE, as mentioned above. Job creation in inner-city neighborhoods and reuse of industrial lands are important parts of this project as well, which subscribes to its own spatial imaginary of inner-city economic development and land use.