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The Location Of Logistics Activities In Metropolitan Areas As An Issue Of Urban Planning: A Comparison Of Paris and Montreal

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Abstract

Metropolitan areas are characterized by their function, which is to be an interface between an international network of cities and activities, and a local network. They are nodes in transport systems and in logistics systems at different scales. They have become the favored urban areas for the location and organization of logistics activities. The issue of logistics sprawl has emerged as a topic in the literature (Dablanc, Ross, 2010; Andriankaja, 2011) and it has become an issue of urban and transport planning. In a comparison between the two metropolitan areas of Montreal and Paris, we attempt to analyze the spatial evolution of the logistics activities and freight transportation and the challenges that arise, especially regarding public policies. Firstly we will analyze spatial dynamics (logistics sprawl, polarization) in Montreal and Paris, based on a literature review and analysis on the distribution of the logistics facilities and transport infrastructures. Then, using a review of the planning documents of these metropolitan areas, and a series of interviews conducted in 2013 in Montreal and in 2013-2014 in Paris; we will analyze the response in terms of planning of the public policies to these spatial evolution. Finally, we will highlight the complexity of the system of actors involved in the logistics development. These spatial dynamics of concentration and sprawl make public action more complex and blur the boundaries and the level of public action. In metropolitan areas, public action tends to focus on dense urban areas. The hyper regulated dense central areas are opposed to peripheral areas where market forces are exercised freely. The issues of planning logistics areas go beyond local policies, and challenge the young metropolitan communities, as new public stakeholders. This article aims to clarify the governance of the logistics issue in a comparative approach, to discuss the limits, challenges, and reveal the role of new metropolitan public actors.

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Keywords: Metropolitan Areas; Logistics Sprawl; Urban Planning; Transport Infrastructures, Paris, Montreal

1. Introduction: logistics as part of the urban fabric

The organisation of logistics activities in metropolitan centres has been much researched recently. The academic literature on metropolitan development has mainly deciphered the contribution of major command functions (in economics, politics, finance and culture) in the concentration of these activities (Halbert, 2012; Sasken, 1991, etc.). Yet many studies in economics, geography and development planning also deal with the location of jobs and infrastructure for logistics, as well as their impact on the form and function of urban areas. The question of goods transport and the issues it raises for urban planning are at the heart of a new research agenda, as shown in collective publications such as *The City as a Terminal* (Hesse, 2008) or in *La métropole logistique* (Dablanc & Frémont, 2015). The main conclusions of this research shows that goods transport and its associated logistics are key to today's cities. Such research starts by making it possible to quantify the growing importance of logistics transport within service-based metropolitan economies. In contrast to the image of the immaterial economy, the growth in tonnes/km shipped continues to be much higher than GDP growth (Frémont, 2012). This growth in turn is essentially linked to the lengthening of distances covered, as the spatial division of activities deepens (Savy, 2006; Soppé & Gilbaut, 2009). The rise in the frequency of distribution for large retail outlets, the explosion of e-commerce, the demand for urgent deliveries and more generally the atomisation of flows linked to the post-Fordist economy have created new logitistical practices (just-in-time production, zero inventories, etc.). These activities are mainly structured around route/platform combinations. Such combinations are designing a new logistics geography, based on the concentration of activities in main urban areas but also on urban spread within the same urban areas (Frémont, 2012). Logistics activities are also contributing to suburbanisation and the expansion of urban areas along major transport routes, principally by road. This phenomenon is primarily to be found in North American and European metropolitan centres (Hesse, 2008; Dablanc & Ross, 2012; Cidell, 2010; Andriankaja, 2014; Raimbault, 2014). Such suburbanisation of logistics amplifies the negative externalities of transport (urban integration, congestion, CO2 emissions and pollution). In doing so it raises new problems for public policy and action aimed at metropolitan development (Masson & Petiot, 2013). These issues are accordingly intruding ever more into planning work. Several recent studies have identified planning issues raised by logistics (Hall, 2015).

The question of logistics activities is directly linked to local government strategies seeking to attract business for tax and employment reasons. But it also affects regulation objectives due to way such activities use up land and the problems caused by road transport. Varied regulation of logistics activities is developing and structuring metropolitan organisation. It relates to everything ranging from local public action (by municipalities and groups of municipalities) to the real estate practices of major managers of public infrastructure like ports and airports (Raimbault, 2014). Most of the studies mentioned above agree that the fragmentary nature of such logistics regulation is often predominantly local, while planning at regional or national levels is frequently wanting. Planning of large metropolitan infrastructures hardly considers such logistics issues, and hence partly distorts the assessments of traffic and congestion which justify such investments. Our research follows this line of enquiry. Drawing on a comparative analysis of Paris and Montreal, it aims to contribute and enrich recent studies made of the issues involved, the actors and the urban planning exercises linked to this new geography of logistics. By analysing the geography of logistics employment, this study focuses on the stock of jobs. A comparison is made of Greater Paris, which has already been much studied (Raimbault, 2014; Frémont & Dablanc, 2012; Andriankaja, 2014; Guerrero, Proulhac, 2015), and Montreal which has been little examined in terms of logistics. Our approach is to examine development planning by public authorities, itself viewed in terms of the organisation of urban space. We justify this by the fact that our broader analysis highlights the necessity of "repoliticising" the question of goods transport, by showing how such transport is and should be more a matter for public policy (Debrie & Heitz, 2015). To be sure, such an approach is obviously partial, as it masks the growing weight of large logistics companies and transport operators in metropolitan development since the 1980s. Our research therefore does not relate to the negotiation between companies and territories, a subject that has been studied in detail for Greater Paris, in a recent PhD (Raimbault, 2014). Nor does it look at the organisation and definition of the logistics sector, which have both been examined in numerous studies. Instead, our work very specifically focuses on deciphering public actions concerning the structuring of logistics zones.

We use a two-stage methodology to decipher such policy from a comparative point of view. First, it is necessary to present the spatial dynamics of logistics in the two metropolitan areas. This involves a quantitative analysis of where jobs are located in the transport and logistics sector, relative to the location of transport infrastructure, in

order to provide a summary view of their geography. The goal is to detail the expansion of metropolitan zones situated around major infrastructural facilities (roads, ports, airports, platforms and intermodal infrastructure). This logisitics geography raises planning issues that we seek to analyse in a second step. It primarily draws on planning documents, supplemented by interviews carried out in Montreal and Paris between 2013 and 2015. The detailed study of planning documents is carried out to identify the actors, issues and practices involved as logistics has been increasingly taken into account in urban planning. The initial definition of logistics geography in the two cities (Section 1) is crossed with the identification of planning practices underway (Section 2), and this will make it possible to examine the coherence of unpredicted events and paradoxes involved in logistics planning (Section 3). The aim of this last stage is to contribute to the research into the coherence of urbanisation and transport (Gallez & Kaufmann, 2010), which has so far been mainly looked at in terms of passenger traffic.

2. Transformations of metropolitan geography due to logistics

2.1. The deconcentration of logistics employment and the logistics development of suburbs

Paris and Montreal both structure vast regions. Paris shapes the Ile-de-France region, which has 12 million inhabitants. Montreal is one of the main regional centres of Quebec Province and is the home to 8 million people. It dominates the region in terms of the importance of the freight traffic passing through its port. The Port of Montreal is indeed one of the largest inland ports in the world, and 9th in North America. These two cities concentrate populations and economic activities. The latter include activities related to freight and logistics, due to the cities' functions as gateways and hubs, since they ensure redistribution of goods throughout their territories. In parallel with this concentration, both cities are experiencing the dynamics of deconcentration. Since the early 1980s, an abundant literature has described the dynamics of the deconcentration of populations and activities and their location on the outskirts of metropolitan areas. This has resulted in a significant growth in suburban and peripheral areas. The "suburbanisation" of economic activities in the North American cities (Stanback 1991; Garreau, 1991; Gordon, Richardson, 1996) in the 1980s and 1990s, as well as in France and Europe (Bauer, Rougé, 1976, Charmes, 2011), has transformed the geography of cities. Suburbanisation largely involves population growth in city outskirts, with a first wave of suburbanisation being the deconcentration population. A second wave of deconcentration then affects jobs and economic activities, related especially to services for households and industry (Terral, 2008).

In recent years the literature has identified a new wave of deconcentration of activities in the transport and logistics sector (Bowen, 2008; Cidell, 2010; Dablanc, 2012). The growth of these activities in peripheral areas of the cities highlights the dynamics related to the logistics of urbanisation. When logistics massively leave city centres in favor of the suburbs, we speak of logistics sprawl (Andirankaja, Dablanc, 2012). This phenomenon leads to the expansion of the territory of metropolises (Dablanc Heitz, 2015). Thus for 2001-2011, the logistics deconcentration in the Paris metropolitan area tended to be more important than the deconcentration of the population (Andriankaja, 2010; Heitz, Dablanc, 2015). The analysis of changes in the location of logistics activities shows that they are pushing out the boundaries of the metropolis. This expansive dynamics has resulted in an increase of urbanised spaces on the margins of the city and in rural areas. It is often in conflict with recent policies aimed at the sustainable compactness of cities and smart growth. The development of logistics activities in suburban areas is a key factor in urban sprawl.

In order to analys the deconcentration of logistics and changes in the location of logistics activities in the metropolitan areas of Paris and Montreal, we chose to use centrographic statistics. This is a robust method for analysing spaces, in order to examine the deconcentration and the evolution in the location of logistics activities in Greater Paris. This method allows us to calculate the average distance of jobs in the transport and logistics sectors with respect to their centre of gravity in the region. In the case of Montreal, we used jobs located in the transport sector and in logistics for 2001 and 2011. Data on Montreal were taken from tables given by Statistics Canada for employment in the regional county municipalites (RCMs), according to NAICS (SCIAN). We retained NAICS 48 "Transportation" and 49 "Warehousing". For the metropolitan area of Paris we used data from the CLAP (Knowledge of Productive Industries, *Connaissance de l'Appareil Productif*) database. These data are available at municipality (*commune*) level, but we decided to aggregate them to the level of statistical districts, in order to obtain a statistical breakdown that was similar to the RCMs. Transportation (49) and warehousing (52) were retained as categories. It should be noted that Canadian and French data are highly compatible, given the similarities of their

classification systems (SCIAN and NAF). The H "Transport and Warehousing" category in France's NAF classification is similar to SCIAN 48 and 49, as they have the same subcategories. It is therefore possible to compare employment in Montreal and Greater Paris. But, the use of the data is limited as it partly relates to passenger transport. We assume, however, that employment in passenger transport is more centralised than for logistics. This strong centralisation could mitigate the scale of the spread of logistics in our analyses. Moreover, it should be noted that these employment data do not discriminate between jobs relating to a particular logistics services (which are usually conducted in offices) and jobs corresponding to actual logistics operations themselves (usually warehouse-based). Recent research, however, shows that the trend to geographical sprawl mainly concerns warehouses and terminals (Cidell, 2008, Dablanc, 2014, Andrianjaka, 2012, Heitz & Dablanc, 2015), and not offices, which remain located in town. An analogy can be made here concerning martime transport insurance, which is more located in city centres than in ports (Comtois, Slack, Sanders, 2003). This partly explains the large number of jobs in city centres.

Our analyses confirm the spread of logistics activities, despite this methodological limitation. The average distance to a job in the transport and logistics sector has risen from 28.8 km to 32.2 km (+11.8%) in Montreal and from 11.3 km to 17.3 km (+53%) in Paris. Such growth clearly shows the dynamic spread of these urban centres. The findings confirm the deconcentration of the cities out to their peripheries, in a concentric manner. Indeed, the centre of gravities of logisitics jobs in Montreal and Paris are the same as the cities' geographical centres.

2.2. *Relativising logistics sprawl*

The Paris and Montreal metropolitan areas have a similar morphology. The monocentric structure they have both inherited has led to a strong concentration of economic activity at the centre and development in peripheral areas. By observing the distribution of jobs in the transport and logistics sectors, we see that the spatial redeployment of logistics activities is based on the principles of a centre-periphery relationship. In both Montreal and Paris, the centre-periphery relationship has already been the subject of numerous studies. In Montreal, the attractiveness of a zone to business in any sector depends on its distance to the city centre, and this has continued to be a relevant variable in explaining the structure of urban growth (Terral, Shearmur 2008). The same centre-periphery gradient for economic activities can be found in Greater Paris (Bourdeau-Lepage, 2005; Halbert, 2007). An examination of the distribution of jobs in the transport and logisitics sectors indicates that the spatial shift of activities appears to obey the principles of a centre-periphery relationship. The centre of gravity of logistics jobs in Montreal and Paris is the geographical centre of the city (see the maps). Despite the deconcentration of logistics jobs, we therefore found that the radiation of employment from the centres of Montreal and Paris continues unabated. The deconcentration of logistics jobs does not homogenise the distribution of logistics jobs in the metropolitan area, but rather accentuates the differences between the city centre of the metropolitan area and its outskirts. Activities involving movement and displacement remain concentrated in the heart of the agglomerations, especially in the case of Montreal.[*] In both Montreal (Slack & Sanders, 2003) and Paris (Beyer, 1999; Heitz & Beziat, 2015), the inherited infrastructure in the city centres - in densely-settled zones – first allowed logistics activities and goods transport to be concentrated too.

This permanence of logistics employment in the metropolitan centre also is explained by the location of the transport infrastructure. Figure 1 shows the deoncentration of logistics employment in Montreal, and the resulting concentrations around nodes like freight terminals and freight transport infrastructure: these are grouped in the centre of the metropolis on the Island of Montreal and in the fringes of the conurbation (in Longueuil, Laval in the east and south Vaudreuil-Soulanges). Jobs are mainly concentrated in areas which are heavily irrigated by transport infrastructure, such as ports and airports. Furthermore, intermodal terminals, such as "Les Cèdres" of the Canadian Pacific and the "Parc Industriel Alta" in Coteau-du-Lac serviced by the Canadian National Railway, are part the distribution process of massive goods flows from Asia via ports on the West coast. They are important centres of logistics employment. In Montreal, the modal transport shares are divided between railways (including the port) (50%) and roads (50%), and they reveal a transport system that is based more on the development of intermodal transport. The location of an intermodal port or an integrated logistics terminal concentrates logistics employment in

[*] Lambert, A., (2010) *Aménagement de la plaque tournante Montréalaise. Survol du contexte d'évolution et des infrastructures logistiques*. Report prepared for the MMC.

certain centres. But these areas are mostly in the city centre. This permanence of logistocs in the heart of the conurbation is due to the need to concentrate economic activities that contribute to the international economic competitiveness of the metropolis in terms of freight transport.[†]

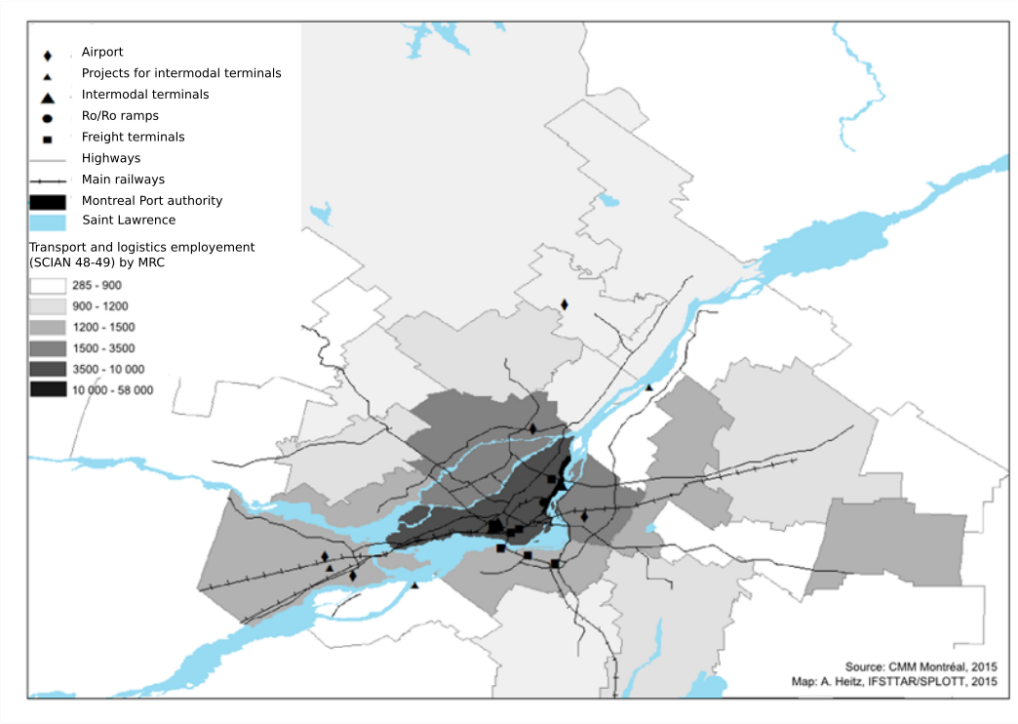

Figure 1 – Distribution of the logistics jobs by MRC in the Montreal Metropolitan Region

In Paris, the transport infrastructure is mainly located in the inner suburbs, stretching from the north to the east, and in the southeast (Figure 2). This has led to the development of the areas close to the infrastructure and the ports of Gennevilliers Bonneuil or the Roissy-Charles-de-Gaulle and Orly airports. The deconcentration of logistics jobs has thus accompanied the creation of new clusters of activity, especially around the nodal logistics terminals or transport infrastructures (Andriankaja, 2014). The location of infrastructures in the suburbs that promote the concentration of jobs may partly explain why employment deconcentration has been more important in Paris than in Montreal.

[†] See the interview with Cargo M (M. Amiel, July 2015).

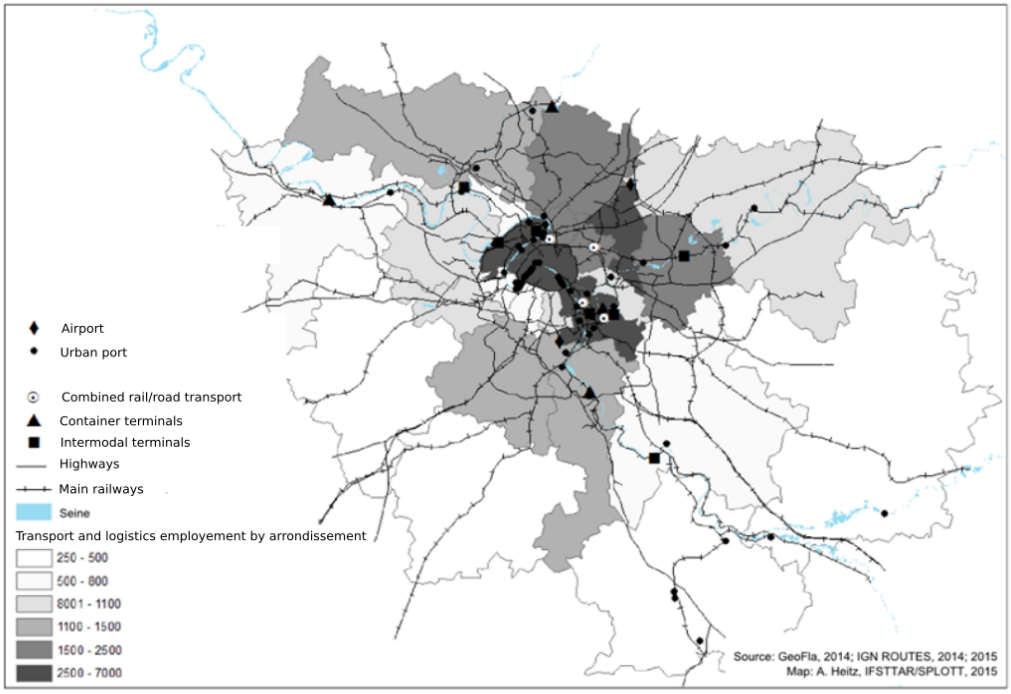

Figure 2 - Distribution of the logistics jobs by arrondissements in the Paris Metropolitan Region

Observation of the distribution of transport infrastructures in Montreal and Paris shows that they are mainly located in the city centres and inner suburbs. This spread of logistics has taken place following several general principles of activity location. These include the fact that the city centres continue to exerte a centralising power by attracting the business district and certain major transport infrastructures. The two metropolitan areas are thus involved in a multi-polarisation process which can clearly be distinguished from polycentric development. This is because command functions remain centralised, and are structured by transport infrastructures and the potential agglomeration they create. These trends map out large and complex logistics zones, shaped around different sites which are located from the city centres outwards to the suburbs of the metropolitan area. The persistence of logistics activities in central and dense-settled areas should not be forgotten in the light of the deconcentration of logistics employment, and logistics facilities from the centre towards the suburbs. Nor should the expansion and spread of flows linking agglomeration centres to their peripheries be forgotten.

2.3. *A fragmented geography of metropolitan logistics*

The deconcentration of logistics activities in a metropolitan area creates a heterogeneous territory and makes planning more difficult. Distinctions can be made between logistics jobs that stay in the heart of urban areas, jobs that locate around transport nodes and jobs that are dispersed across the rest of the metropolitan area. This spatial fragmentation of the logistics sector complicates the metropolitan geography even more. The latter mainly include warehouses and distribution centres (Raimbault, 2015). In contrast, messaging activities remain more centralised than other work in logistics (Heitz, Beiat, 2015). In Montreal too, a certain number of logistics zones, especially those associated with the large distribution centres of major retailing chain-stores, have spread around the city's region, outside the main logistics sites which are structured by intermodality. There are thus variations in the location of logistics activities depending on the specific logistics sectors concerned. This spatial differentiation is based on different causes for the distribution of logistics activities and a complex relationship between city centres

and their outskirts. The distribution of activities is far from being homogenous within metropolitan areas.

During the field survey we conducted in the Montreal area in 2013, we looked especially at the location of road haulage establishments. We developed a typology of facilities/establishments according to the scope of their influence, drawing on our survey and on the large-scale survey made of goods transport by road, entitled *« Etude sur les industries de transport, d'entreposage et de commerce de gros dans la région de Montréal »,* published in 1999.‡ The typology includes: i) companies focussed mainly on the Montreal region; ii) firms working more in the transport corridor which links the cities along the Saint Lawrence waterway; and iii) companies with international activities that are especially linked to port infrastructures. Firms that operate mainly in the Montreal region are distributed more evenly across its space than the others. Companies with the highest level of concentration in the heart of metropolitan Montreal are involved in transport along the Saint Lawrence corridor, due largely to their need to be close to intermodal infrastructures.

The multiple paths of logistics activities cut across areas of high density and spread out in the periphery, as well as being polarised around specific sites in the suburbs. The resulting logistics geography in metropolitan areas is therefore complex. Such metropolisation of logistics underlies planning issues. These range from managing disturbances and pollution locally (noise, emissions, congestion, occupation of public areas, or breaks in infrastructures) to seeking proactively to structure a competitive metropolitan region and attract other economic activities. This multiplicity of issues raises questions of public policy at different levels, even though logistics as an activity has difficulties in finding its place in metropolitan planning. This is clearly shown in the examples of both Paris and Montreal.

3. The emergence of logistics in metropolitan planning

Logistics has indeed entered the area planning process in Paris and Montreal, at various levels in constructing the metropolitan space. This new type of planning needs to find its place in metropolitan construction and meet the demands of logistics' rapid development.

3.1. *Logistics comes on to the political agenda*

The question of logistics was only really first raised in the planning processes of Greater Paris as of the 1990s, when it was dealt with increasingly in general policy documents. Here we recall issues whose main characteristics were pointed to recently by Dablanc & Raimbault (2015). The master plans (*schémas directeurs*) set out in 1965 and 1976 did not directly deal with logistics, and only mentioned the importance of planning major bus stations to service Greater Paris/Ile-de-France. Work by the Logistics Development and Planning Committee in Ile-de-France (CALIF, *Comité Aménagement et Logistique en Ile-de-France*), which was set up in 1990 by the Prefect in association with local politicians and members of the profession, revealed a new concern for logistics. Its work, which prepared the drafting of a new Master Plan for Ile-de-France in 1994, led to proposal for a regional plan for logistics: i.e. the identification of an arrangement based on multiple sites (freight platforms, specialised facilities for transferring loads and road haulage centres). These were organised in concentric rings around Paris: a first ring for urban distribution, a second ring for regional distribution, and a third ring for transit flows. The mapping of these facilities, set out in the annex of the final report, was based on a high degree of precision (including the identification of areas for locating possible platforms). The preliminary work was partially adopted in the Master Plan for Ile-de-France 1994, which took up the idea of having a network of multimodel freight transport, supplemented by the goal of mixed usage, so that logistics activities can be undertaken in densely-settled areas. The Master Plan for Ile-de-France 2013 specifies the necessity of optimising logisitics operations in the metropolitan area on the basis of two objectives set out in the Plan for Regional Transport (PDUIF, *Plan de Déplacement Régional*) and the Plan for Regional Sustainable Mobility (PRMD, *Plan Régional pour une Mobilité Durable*) in 2014. These objectives were: i) the structuring of a multimodal logistics framework, and ii) the preservation and

‡ *Transports Québec. Enquête sur le camionnage de 1999*. The autunm week in 1999 prepared by Eric Archmbault for Quebec's Ministry of Transport.

development of sites in densely-settled zones. The documents also show how technical innovation and especially the necessity of developing governance for goods became objectives. This review of how logistics has been taken into account in regional planning shows that it has been rapid yet partial, but also that logistics has indeed been brought onto the political agenda. Apart from the fact logistics has been integrated into a hierarchy of documents concerning planning in Ile-de-France (compatibility with PLUs, SCOTs and SDRIFs), it should nevertheless be noted that such regional objectives are far from being constraining. In 2005, a report by the CESER for Ile-de-France on transport and the revisions of the Master Plan noted that the question of logistics had indeed been taken into account at the Regional level, but that policy relating to logistics at the local level was only mildly compulsory. This assessment is still true today. It echoes the warning set out in the CALIF report in 1990 that "spatial planning on a large scale will not be very useful if no strongly pro-active public policy is implemented at the same time" (CALIF, 1990). As a result, the Region has taken responsibility for the issue of logistics in Ile-de-France.

In Canada's federal system of government, planning is the prerogative of the Provinces. The Province of Quebec has delegated this power to municipalities, which represent the local level of government, and to the metropolitian communities of Montreal and Quebec. These metropolitan communities implement Metropolitan Planning and Development Plans (PMAD, *Plan Métropolitain d'Aménagement et de Développement*) which fix the main principles of development in their territories: "The PMAD defines the orientations, the objectives and the criteria of the ends to ensure the competitiveness and attractiveness of Greater Montreal, within a perspective of sustainable development [...]". The Montreal Metropolitan Community (MMC) was created the 1st January 2001, as an organisation for planning, coordinating and financing. It covers 82 municipalities, with a population of 3.7 million. By creating Regional Committee Municipalities (MRCs), the central governement has not really pursued decentralisation/devolution: as in the case of municipalities or metropolitan communities, it has provided such supra-municipalities with competences that had hitherto belonged to the municipalities, rather than attributing them new responsibilities and especially planning authority in terms of territorial and transport planning. As these regional municipal communities have been created by central government, their legitimacy is exclusively administrative. At the regional level, they are *a priori* a strategy link in the organisation and planning of the territory of Quebec (Leveques, 2010). Regional planning is carried out mainly by the process of drafting and revising the Planning and Development Master Plan (SAD, *Schéma d'Aménagement et de Développement*) which is implemented by the MRC. This document helps ensure the consistency and coordination of public action carried out in the territories of municipalities belonging to the same MRC, along with those of the PMAD. As with the SCOT documents, these plans strive to identify the importance which these territories must ascribe to sustainable development. The municipalities, and when these are brought together the metropolitan communities, have authority in matters concerning infrastructure and transport. At the municipal level, the municipal council of Montreal is responsible for the Urbanisation Plan (PU, *Plan d'urbanisme*). It sets out the planning guidelines and objectives, as well as the regulatory parameters of the municipality, in accordance with the guidelines of the SAD. In Montreal, there are no special documents devoted to planning goods transport and logisitics or to mobility in general, as the PDU in Ile-de-France. The fact that logistics has been brought on to the agenda in planning documents reflects the idea that public actors in logistics are an economic and strategic asset which supports Montreal's position as "a transportation hub for goods",[§] and therefore underpins its place in corridor goods trade and international trade.[**] Logistics are planned with respect to their capacity in enhancing the metropolitan area within the international transport system. Moreover, emphasis is placed on the development of intermodal platforms. The PMAD specifies that "the implementation of new logistics centres must ensure the effectiveness and the capacity of infrastructures".

The question of logistics has therefore emerged in the planning documents: it is regional in scope and relating to goods transport. This level of policy in fact covers a vast operating territory/area, which nevertheless has no overall planning authority, with planning being devolved to the local level. The logistics development of the metropolitan area is part of a regional plan that sets out major strategic outlines and local planning, which defines the organisation of territories making up the metropolitan area.

[§] Lambert, A., (2010) *Aménagement de la plaque tournante Montréalaise. Survol du contexte d'évolution et des infrastructures logistiques*. Report prepared for the MMC (*CMM*).

[**] A Memorandum of Understanding on the development of the Continental Gateway and the Ontario-Quebec Trade Corridor, signed 30 July 2007, by the governments of Ontario and Quebec.

3.2. *The "strategic" planning of logistics and the polarisation of the metropolitan area*

Given the preceding conclusions (the regional agenda, the rise of the local concerns with logistics in Ile-de-France and the Montreal Region), it is surprising to see that the logistics only has a limited place in the policies of the Grand Paris Project (GPP), a major urban development project for the Greater Paris area. This was recently pointed out by Afilog, an association of companies (in distribution and transportation) and infrastructure managers, which noted the lack of real logistics projects around stations in the GPP. A detailed analysis of Territorial Development Contracts (CDT, *Contrats de Développement Territorial*) clarifies this finding. This contractual process is defined by the Law of 3 June 2010 concerning the Grand Paris Project, and amended by the Law of 18 January 2013 relating to the use of public real estate. It concerns the agreement between the central government, municipalities and their groupings, and it aims to provide a framework for the development generated by the creation of stations belonging to the Grand Paris Express rail network. An examination of the 22 CDTs of the region reveals two approaches to logistics: 5 CDTs do indeed explore the issue (Sénart, Confluence, Boucle Seine Nord, Roissy Terre de France pôle d'excellence aéronautique), whereas the other CDTs ignore or only deal with the issue very partially. Not surprisingly, the 5 CDTs mentioned are clearly affected by major intermodal platforms, ports and airports which structure the organisation of freight transport in Paris (the Roissy-Charles-de-Gaulle airport, the logistics hub of Sénart, the Port of Gennevilliers, the Port Seine Metropole projects in Achères, and the port project in Triel sur Seine). The CDTs thus confirm a zonal approach to logistics, involving infrastructure managers and the municipalities concerned, with a focus on some specialised sites. But the question of mixed use and logistics activity in densely-settled areas – identified in the SDRIF and other urban charters – is singularly absent in these CDTs, with the exception of a few projects (an Urban Distribution Centre in the Greater East CDT).

In Montreal, planners have located logistic hubs with the aim of developing logistics areas dedicated to limit congestion, while maintaining the competitiveness of Montreal at the supra-regional and international levels. The type of planning is similar to the one used in the Parisian metropolis, and is based on mono-functional centres. The PMAD has identified the MRCs of Vaudreuil-Soulanges, Roussillon and the town of Contrecoeur as potential centres for developing logistics. However, we had previously found that these territories have witnessed increased logistics employment in recent years. The PMAD has thus framed and strengthened the development of logistics in these spaces. The PMAD has also superimposed its economic development policy on the development of specialised units or "clusters", and identified the metropolitan infrastructures that are important to different modes of transport. The PMAD has sought to identify the strategic location sites for logistics. As indicated in the introduction of the document, the MMC has largely drawn on the Dutch "ABC" planning model, which makes it possible to associate the location of an establishment according to its nature with the flows it emits. Montreal International (MI) is a one-stop agency which offers assistance to companies in establishing themselves in the region with respect to these clusters. MI is funded by the private sector, the Governments of Canada and Québec, the Metropolitan Community of Montreal and the City of Montreal. Through MI, the MMC therefore has funding capacity for its territory. MI is especially involved in the development of the "logistics cluster". Cargo M is a company responsible for the development of the transport and logistics cluster. This company is mandated to coordinate the work of transport and logistics actors in Montreal. The PMAD has thus encouraged the emergence of local governance involving public and private players in logistics and the territory in order to plan the development of specialised centres in the metropolis. This governance structure is the intermediary of the development of logistics in the metropolitan area of Montreal.

Current planning therefore seems to extend the zonal urbanisation of logistics. And despite growing interest (regional and local in the centre zone), such planning is having difficulties in being part of metropolitan development. The zonal processing of logistics has allowed logistics to be maintained in the heart of the urban area but also to manage better the distribution activities and their environmental consequences throughout the territory. Yet it also reinforces the idea that territories are being fragmented at the local level. The metropolitan planning of logistics enhances the polarisation of logistics activities and jobs, crystallising relations between the centre and the periphery.

3.3. *The emergence of logistics planning at the local level*

In Ile-de-France, dealing with logistics in planning exercises has thus largely remained the responsibility of the municipal and inter-municipal planning practices. This finding is consensual in both the institutional environment (CESER Ile-de-France, 2005; CCIP, 2010) and among academics (Dablanc, 2011). Such an approach refers to the strategies of economic attractiveness developed by some municipalities and inter-municipal institutions (zoning of activities) and the establishment of ordinary rules for urban planning (e.g., relating to parking and traffic). Local Urbanisation Plans (*Plans Locaux d'Urbanism*) and building permits therefore determine the map of logistics in Ile-de-France. It is notable that France's central government departments do not impose strong constraints on such planning, even though they are responsible for classified installations and approval of building permission. Moreover, the weakness of inter-municipal organisations on the outskirts of Paris has often led to unbalanced relationships between firms contructing logistics facilities and the municipalities. The result is a form of privatisation of suburban logistics businesses, a process that has been deciphered in detail in a recent PhD (Raimbault, 2014). However, like the consolidation of regional priorities for logistics, a growing interest in logistics has recently emerged in the City of Paris. This is borne out by the partnership framework involving the institutions, the Chamber of Commerce, carriers and shippers, which was initiated in 2001. It finally led to the signing of good practice charter in 2006, relating to the transport and delivery of goods in inner-Paris in 2006. This affects regulation, mainly by introducing the delimitation of nine areas of Large Urban Services in the Local Urban Development Plan. This partnership initiative has been extended in accordance with the SDRIF and PDUIF requirements, within the framework of a charter favouring sustainable urban logistics, signed by partners in September 2013. This new charter is more operational, and is based on the identification of structures and equipment (logistics platforms and facilities for servicing neighbourhoods), as well as the accompanying, innovative practices (staggered hours, a new organisation of delivery routes). Above all, the charter has led to 16 project statements supporting the objectives mentioned in the charter. It has also lead to funding and the completion of some specific projects dedicated to urban logistics and improving freight conditions in Paris, such as: the Urban Consolidation Centre of Beaugrenelle for Chronopost (a courier company), the urban distribution centre (UDC) of Les Halles, and the "Chapelle Internationale" Project. To be sure, these initiatives so far mainly concern Paris, which is a special space of intense mobility regulation. But, they are part of a more pronounced concern for logistics issues. The adoption of a charter of objectives for the transport of goods in the Seine Saint Denis Department (north of inner-Paris) provides further evidence of the attention now paid to logistics, as the charter was signed by the Department, the City of Paris, the Region, 45 municipalities and inter-municipal groupings, infrastructure managers, as well as carriers and shippers. Though the charter is more a statement of intent, the listing of facts, objectives and intentions nevertheless underlines similar concerns for experimenting in new services, along with the maintenance and enhancement of existing centralised facilities. This new regard for logistics seems to be widespread.

The agglomeration of Montreal has been developing a new SAD since the end of 2014. The draft it has submitted to public debate involves major alterations to freight transport, including notably the development of networks of intermodal logistics infrastructure and infrastructure with a supra-regional vocation. This document further includes local recommendations such as the accessibility of intermodal platforms or the consolidation of logistics activities in the vicinity of intermodal platforms, as well as major highways to ensure the performance and efficiency of these platforms. Through this policy of creating sites for logistics within the metropolitan area, Montreal is striving to fight against the logistics sprawl and to keep profitable economic business in the heart of the city: "Given the price of land and traffic congestion, trucking and warehousing companies are tending to relocate to the periphery".[††] The maintenance of these activities in the heart of the conurbation is a means for increasing employment in the area and for strengthening the economic influence of Montreal: "To retain in companies operating in logistics and to ensure the development of jobs in this sector in greater Montreal, the agglomeration should target appropriate sites, close to major infrastructures". The SAD identifies sectors specialised in logistics in the east of the metropolitan area, especially on the outskirts of the Port of Montreal, as well as in the West of greater Montreal, near the airport, and the railway shunting yards and motorway junctions (20, 520, 13, 40). This document

[††]SAD Montréal, Projet 2014, Source: Statistique Canada. Data processing carried out by the Urban Planning Department (*Division de la planification urbaine*).

also requires taking into account, the management of the impacts of these facilities on the urban fabric and the environment. The SAD is a document that incorporates an analysis of urbanisation and suggests that "underused land or land in transformation" should accommodate logistics activities.

The agglomeration of Montreal is still cautious about the sector's evolution and has not tried to anticipate its impact on the territory: "logistics and distribution are evolving constantly and we can expect significant changes in the coming years. It will be for Montreal to benefit from this and to limit the impacts on the urban environment". The SAD has nevertheless invited municipalities to remain attentive to these developments and to establish a committee bringing together different actors to "analyse the dynamics of employment related to logistics across the metropolitan area [...] and to explore new distribution methods, especially with regard to urban logistics (home delivery, etc.)". The agglomeration of Montreal is looking gradually at the issue of urban logistics, but it is still in an examination phase that has not yet led to concrete actions. This allows us to conclude that the logistics planning in Montreal continues to be a tool of metropolitan planning, while also emerging as an urban planning tool. The Plan for Urbanisation (PU) document of the City of Montreal begins with a statement of its commitment to fight against urban sprawl. The PU contains a new "Charter for Montreal's living environments" with 10 criteria. These must be respected in the organisation of Montreal, in order to improve the quality of life of the population, especially concerning the environment (criterion No 3), and diversity in employment (criterion No 10). The plan makes no specific mention concerning the development of logistics and freight transport, beyond the question of managing the disturbances/pollution that these activities generate. It seems that this level of government has not yet addressed the issue of urban logistics. Instead, it is seeking to integrate in its territory the recommendations of the PMAD and SAD concerning the development of freight transport and logistics in the vicinity of the identified centres, which have the task of ensuring the smooth flow of traffic on highways, as well as the fight against congestion and pollution. The examples of Paris and Montreal appear to apply charters as tools for territorial governance with different objectives. As a tool, charters guide the practice of developers as do other regional, metropolitan or municipal planning documents. These charters point to a new management practice that seeks to nurture more collaboration between private and public actors operating in the same sector, or between the inhabitants and their local representatives. They can also help ensure the proper integration of planning documents at the regional and metropolitan levels, and hence ensure the consistency of planning practices and the urbanisation of territories.

4. Emerging, Tentative Planning in Logistics Activities

4.1. *The risks of a new fragmentation of the metropolitan area*

It is easy to identify the geographical consequences of this development in the governance of logistics. Other comparative examples of course need to be studied to confirm such geographic organisation. But it does present a pattern involving the shift of logistics to the suburbs (which has been identified in detail in research during the last 10 years), counterbalanced by the continued location of activities in central areas due to the presence of major historical infrastructure and following new public policies to safeguard land for such logistics activities. The desire to maintain logistics and logistics facilities in densely-settled areas entails significant costs firstly to the city and then to logistics operators. As we mentioned in the first part, the two cities presented here were built on land whose price falls clearly from the centre towards the periphery. The urban policies we have identified as being dedicated to logistics emerged in central areas. They should strengthen this centre/periphery geography with a very tough competition among logistics operators to acquire such highly regulated land in dense central areas. By contrast, market forces are freer on city outskirts, where logistics real estate is developing. Indeed, the efforts required for the acquisition of land in densely-populated areas with regard to the low profitability of the "last mile" in urban freight transport (CEREMA, 2015) mean that access to these areas is difficult. Such hyper-reglulated centres therefore become areas of very selective logistics, while peripheral zones become the main theatre for the development of logistics real estate (Raimbault, 2014). The hyper-regulation of central areas therefore contrasts sharply with their surroundings and reinforces the idea of a fragmented logistics metropolis. As with the perverse consequences of the "precipitation of good practices in mobile, green and safe cities" highlighted by F. Scherrer (2013), the development of urban logistics dedicated to the city-centre may increase regional inequalities between the centre and the suburbs. Presumably, such a limitation of access by carriers to downtown areas affects the weight of the inner suburbs in logistics infrastructure (warehouses, platforms, flows groups). The existence of a twofold dynamics involving both

logistics deconcentration within a metropolitan region and the re-concentration of some activities in densely-settled areas (encouraged by public policies to fight against urban sprawl), is leading to a complex logistics landscape. Administrative, territorial complexity further complicates metropolitan planning.

The coordination of logistics policies at all levels thus becomes an important issue of metropolitan planning. Far from being redundant, the centre/periphery pattern still seems relevant in interpreting the territorial impact of different management policies concerning logistics, at a time when changes in logistics appear to be initiating a renewal of the territorial configuration of these metropolises. Indeed, the territorial developments of logistics prompt us to consider the entire metropolitan area as being the relevant level for the planning and organising logistics facilities as well as jobs; while the limits of metropolitan areas are increasingly defined by logistics activities in a territory. Furthermore, the development of logistics activities – both around transport infrastructures in central areas or in logistics centres in outlying areas – has redrawn the geography of cities in the recent past, and has increased the economic weight of suburbs that have acquired new functions. This logistics function contributes to "metropolisation" and reinforces the weight of peripheries in the metropolis. As "servicing" or "support" territories, the increased weight of these suburbs should challenge the policies of territorial organisation and the scale of the logistical planning. We believe that this approach can be applied to many urban settings. Logistics has thus become one element of the "territorial compromise" identified in many recent studies on urban transport policies in Western cities (Kaufmann, 2013). These studies highlight the contrast between the concentration of policies in central zones (aimed at ensuring sustainable mobility), and the overall lack of regulation of mobility in peripheral areas which are more structured by a form of self-regulation for road transport. Such studies generally relate to passenger mobility. They raise the question of how metropolitan areas are fragmented by different types of mobilities. Yet it seems important to us to point out that the mobility of goods participates and amplifies this form of dualism in urban regulation, while raising the question of the enlargement of logistics control at the metropolitan level. With the idea of "territorial compromise", Kaufmann emphasises the fact that these new principles of the theory and practice of development around sustainable mobility and the fight against the urban sprawl are impregnated with ideologies that cannot escape from the reality of logistics and freight transport.

4.2. *The path taken by planning*

The analysis of management practices concerning logistical issues in Paris and Montreal therefore clarifies the levels and scales of public action in this field. These two case studies indicate a growing interest in the issue of goods transport in the cities. They also illustrate the fragmented organisation of public action. We believe this leads to two conclusions. The first supports the old criticism that public action in logistics has not been thought through. This view has dominated much academic writing on the issue in the last 15 years, but has become less true in the recent past. The growing interest in logistics is amply demonstrated by our two case studies, for all the differences in the institutional organisation of urban planning in these two cities.

The second conclusion is that the construction of a logistics policy at the metropolitan level needs to be formulated in the same way as policies concerning other sectors of urban production (housing, energy, etc.). Two modes of logistics governance have recently been reported by Nicolas Raimbault in his research on Ile-de-France. A tandem of municipalities and firms operating in logistics real estate is structuring a type of logistics governance for metropolitan peripheries. Such governance is supplemented by the action of managers of major public infrastructures (ports and airports). Their action is marginal in terms of the surface areas concerned, but it is important in the negotiations of regional and national public policy (Raimbault, 2014). This twofold governance does not challenge the mechanisms of logistics suburbanisation. Given our research and our analysis, it seems important to add a third form of governance related to the recent but growing emergence of local negotiations within central areas, between public actors (municipalities), infrastructure managers (ports, railways) and companies (logistics, retailing and distribution). This governance is structured around a few specific sites in central areas. It allows examination of achieving the goals of mixed use (functions) and sustainability (transport) that are set out in planning documents. This third mode of governance is revealed in our work by the procedures operating in logistics clusters in Montreal or project statements in the Paris región, as part of a logistics charter. We hypothesise that this type of governance will increase significantly in the future. Through the examples of Paris and Montreal, we can see how charters are used as a territorial governance tool locally, with various objectives. As a tool they guide the practices of urban developers and public stakeholders, along with other regional, metropolitan and municipal

planning documents. These charters are linked to a new practice of management that seeks to develop more collaboration between private and public stakeholders, in the same sector or between the inhabitants and their local representatives. They can also help to ensure the proper integration of the planning documents at the regional and metropolitan levels, and ensure the consistency of planning practices and urban planning within local territories.

Despite the growing (regional and local) interest of public policies for charters, our analysis shows that current planning appears to extend the logistical zonal urbanisation of Paris and Montreal. The zonal processing of logistics allows these activities to be maintained in city centres. It also means that the distribution of logistics activities and their negatives externalities across an entire territory can be better managed inside clusters. But at the same time, zonal processing reinforces the functional fragmentation of planning at the regional and local level. Such fragmentation is not the same as the functional diversity sought by the metropolitan cities, but follows the perverse effects of zoning policies that fragment metropolitan areas (Gaudin, 1986, Scherrer, 1998). Metropolitan logistics planning strengthens the specialisation of certain parts of a territory through the concentration of logistics activities and jobs in specific centres. It crystallises the centre/periphery relationship in a functional relationship of duality with suburbs as “servicing territories” of the center. This functional division of the territory risks fragmenting the logistics of a metropolis. The implementation of charters or new contracting tools overcomes the blocs and areas of expertise of actors engaged in the maintenance or the development of logistics activities. Beyond documents and planning exercises, governance by the charter allows a less zonal treatment of logistics management to be conducted, with the dual aim of maintaining a network of specialised platforms, but also some mix in the functions carried out by urban interfaces. Of course, it could be objected that such charter arrangements are still very localised, while logistics development is more generally little regulated and largely suburban. This hypothesis needs to be tested in other cities. But we feel that the examples identified in Paris or Montreal nevertheless signal a new agenda for the development of metropolitan logistics. This agenda could eventually partially modify the location of these activities and the dynamics of sprawl associated with urban congestion.

5. Conclusion: Governance by Charter for Planning the Development of Urban Logistics Areas

The analysis of logistics employment in Paris and Montreal (Part 1) clarified the complex geography of logistics, combining dynamic sprawl along the road infrastructures and the concentration of logistics activities around major intermodal terminals. Furthermore, the location of these platforms has allowed a significant share of logistics business to remain in central areas, thus qualifying the dynamics of sprawl.

Most cities are experiencing a deconcentration of their logistics activities to peripheral areas. This is not necessarily at the expense of city centres, which may remain a privileged site for locating logistics jobs. In this study we have provided several explanations for such phenomena. First, we have observed some permanence in the location of transport and logistics facilities in city centres, as in Montreal. This ensures the competitiveness of the territory, and corresponds to the strategic planning of logistics. Then we have highlighted how the emergence of urban logistics also favors the maintanence of logistics business in dense-settled central areas. Thus, we have been able to emphasise the complexity of logistics geography, through the analysis of territorial dynamics and the development policies related to logistics. More engaged metropolitan planning is only a partial response to the ensuing problems.

The suburbanisation of logistics on the one hand, and maintenance a centre-periphery logic on the hand other are accompanied by fragmented public action (Part 2). The latter, however, is showing a growing interest in logistics, in a context of greater awareness and examination of urban sustainability.

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