Addressing complex urban challenges: Social, economic and cultural transformations in the city

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Introduction

Addressing complex urban challenges is the fourth volume of papers produced by the IGU Urban Commission Young Scholars Committee. The Urban Commission of the International Geographical Union is designed to encourage geographical research on the new Urban Challenges emerging in an increasingly Complex World, and to further the exchange of findings among urban geographers from many countries.

In this volume of eight papers, the complexity of the challenges facing cities on a global scale is examined. Linking all of the papers is an acknowledgement that cities are embedded in particular territories but networked regionally and globally, thus requiring a multi-scalar understanding of the processes at work in contemporary cities. Challenges around the most appropriate forms of governance, how to develop inclusive and sustainable cities, and strategies for dealing with inter-urban competitiveness are examined. The authors of these papers are all Young Scholars who have presented their work at recent Urban Commission meetings and we are delighted to have contributions from Europe, South America and Asia. One of the strengths of the IGU Urban Commission is its global reach and this enables a comparative understanding of urban challenges to be developed and discussed.

The Young Scholars Committee welcome ideas from scholars internationally for other volumes or for other activities that might allow us to fulfil our goal of giving voice to new ideas about the future of our cities. The Committee may be contacted through the links on the Commission webpage (http://igu-urban.com).

We hope that this volume will continue a tradition of debate, learning and understanding about cities in a comparative and international context and demonstrate the potential for young urban scholars to contribute effectively to discussions on the key societal issues facing cities in the 21st century.

Automobile Corporate Networks in Europe: Sectoral specialization of Central and Eastern European Cities

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Abstract

The global automobile industry is made up of very large corporations and their various subsidiaries containing different functions that create a complex system of locational structures. The networks formed by the 19 largest automobile transnational corporations constitute an automobile "oligopoly" representing more than 90% (OICA, 2012) of the world's production. Since the mid-1990s, Central and Eastern European cities have become attractive for transnational corporations and particularly in the initial stage for the production functions in the automobile sector. This leads to a crucial question. Do Central and Eastern European cities become also attractive for strategic functions (such as R&D) or are they still manufacturing-oriented in the automobile industry? This paper focuses on the patterns and the main factors influencing the role of central and Eastern European cities that have become integrated in the global value chain of the automobile industry. By analysing the various locations of the specialized functions within the corporations, this study extends the research on global value chains (Gereffi and Korzeniewicz; 1994, Sturgeon, 2000; Krätke, 2014). The spatial patterns of functions and the ownership networks of the automobile industry are constructed in order to identify the cities supporting it. In particular, the way that national metropolises bring their national territories into the globalization of the automobile industry is addressed.

Key words: City Networks, Global Value Chains, Global Production Networks, Transnational Corporations, Network Analysis, Automobile Industry

Introduction

Central European countries entered contemporary globalization later than Western countries because many were part of the communist system inside the Soviet Council for Mutual Economic Assistance (COMECON). Western corporations began investing in the region in the mid-1990s, accelerating the Eastern European transition to a market economy. These initial investments were mainly located in the capital cities, although it often subsequently led to a secondary on their national territories. A wide range of studies have been conducted on the link between automobile manufacturing and regional development in Central and Eastern European countries because of the expansion of the capitalist economy after the fall of communism (Grabher, Stark, 1997; Domanski, 2003; Pavlinek and al., 2009; Lung, 2004). These studies have evaluated the potential of change during the post-socialist transition to a market economy and the main actors in this transition, which are mainly composed of multinational corporations and their organization in global value chains (Gereffi and Korzeniewicz; 1994, Sturgeon, 2000).

Combined with the improvement of institutions with a skilled labor force and low wages, foreign direct investment created the conditions for the attraction of further investments linked directly or not to the automobile industry (Domanski, 2003; Domanski, Lung, 2009). According to Domanski (2003), it contributed to enhancing competitiveness and narrowing the gap between Central and Western Europe. Domanski assumed that the attraction of Eastern Europe, which was initially based on the wage-cost advantage and market access, would rapidly change with the attraction to more skilled functions, such as R&D, finance, management and marketing.

The Domanski assumption leads more than 10 years after, to question how the Central European cities became more attractive for high skill functions. Also, are they integrated into the world system only as a complement to the Western European cities or do they create an independent process of integration? In this paper, we will empirically test the hypothesis that Domanski claimed 10 years ago. After recalling the general concepts we

used (2) we will build the urban networks database (3) in order to explore the different functions of Central European cities, their weight in the world and the European automobile industry's global value chain (4).

The global economy networks in urban systems

In order to build the empirical study, we used the concept of networks, which was developed through both approaches of global value chain, and global production network (2.1). It can help identify the role of specialized cities in the global automobile network (2.2). But the delineation of the automobile sector and its functional components is crucial in order to reveal cities' specializations (2.3).

Global value chains (GVC) and global production networks (GPN)

The complexity of the global economy can be revealed through the concept of network, which reflects the structural and relational movement of the organization of goods and services (Coe et al., 2008). It has been investigated through two main approaches: the "global value chain" (Gereffi, Humphrey, Sturgeon, 2005) and the "global production network" (Coe et al., 2008; Dicken, 2011). The global value chain considers globalized production as a series of cross-border financial transactions related to flows of goods and services between different enterprises within the automobile industry, while the global production network focuses more on the production process itself. Thus, the global value chain is mainly focused on the governance of inter-firm transactions, while the global production network focuses more on the concrete steps and the physical movement of products through different companies and places. Although they have different emphases, both concepts share a common conception of economic space as a discontinuous territory of cities linked by their relations in a global network. In addition, both conceptions offer a multi-sectoral perspective in at least one industry on the economic geography of the globalization of cities (Coe and al, 2008; Sturgeon, 2000; Krätke, 2014).

The automobile industry as a multi-sectoral industry

Krätke (2014) compared the global urban system of the automobile industry with that of advanced services (Sassen, 2012), such as finance, but restricted his study of automobile sector networks to their production or manufacturing functions. However the automobile sector does not only comprise manufacturing plants; it encompasses a wide range of economic activities or sectors that are fundamental to the functioning of the industry. This means that a comprehensive survey of the locational structure of the industry needs to deal with as many of the different functions or sectors as possible.

Nine functions of the global value chain in the auto industry were initially defined based on precedents from the economic literature (by Dicken, (2011): sales, finance (including insurance), manufacturing, management, R&D, leasing, logistics, public relations and marketing. Identifying these nine different functions highlights how they develop specialized complementary tasks in the automobile industry's global value chain. Some subsidiaries could operate two or more functions but we take into account the predominant one.

The role of cities in a multi-sector approach

The geography of the whole of the automobile industry, like the locations of other corporations, depends on the advantages and amenities of various urban places. For example, locational factors such as the size and quality of markets, accessibility for goods and service inputs, availability of capital, or inducements such as the extent of government subsidiaries can determine the attractiveness of a city for a corporation to locate its plant or subsidiaries there. In addition three different agglomeration economies of cost savings may be present. For example is the site chosen able to expand production to derive economies of scale, because of savings per unit of production due to increased size that may be a result of the expanded possibilities or local markets?

However, cities have to contain essential assets in order for industries to develop efficiently. First, firms in the automobile sector specifically develop economies of localization such as through the share of skilled or specialized

workforce and, as is well known, the presence of services or sub-contractors' networks (or the future opportunity of these developing) (Pavlinek and al., 2009; Bathelt and Glückler, 2011).

The urban territories selected also need to possess good infrastructures of transport and telecommunication as well as institutions (research centres, universities, trade chambers), associations (professional federations, economic development agencies) or service companies (consulting, lawyers), features that create other types of cost savings or *economies of urbanization* (Camagni, 1996). Since these economies vary between cities global corporations make different decisions to locate their various sectors and subsidiaries in various places. However these features vary through time and sometimes the forces of inertia mean that plants or offices remain in a location, either because it would be too costly to move, or that the organization has not realized or is indifferent to some move to a more advantageous location.

The analysis of the global value chain of the automobile industry using the five main sectors provided two main results. First was the identification of the structure of the network at an aggregate world level. Second was the extent to which the different functional sectors of the industry are differentially located, which revealed a global and regional specialization of cities in this industry.

Role of Eastern European cities in the large automobile industries' networks

This study analyses the various locations of plants and services associated with the largest 19 automobile corporations that have a world presence (OICA, 2013) in order to determine the global spatial structures of their networks. The 19 major corporations produce more than 76 billion out of 84 billion units, which represents 90.3% of the world vehicle production, (OICA, 2012) (Table 1).

Group	Origin	Headquarters	Units produced in thousands (2012)	World production percentage
Toyota	Japan	Toyota city	10,104	12.0%
G.M	United States	Detroit	9,285	11.0%
Volkswagen	Germany	Wolfsburg	9,255	11.0%
Renault-Nissan	France/Japan	Paris	8,119	9.6%
Hyundai	South Korea	Seoul	7,126	8.4%
Ford	United States	Dearborn	5,595	6.6%
Fiat-Chrysler	Italy	Torino	4,499	5.3%
Honda	Japan	Tokyo	4,111	4.9%
PSA	France	Paris	2,912	3.4%
Suzuki	Japan	Shizuoka	2,894	3.4%
Daimler	Germany	Stuttgart	2,195	2.6%
BMW	Germany	Munich	2,065	2.4%
SAIC	China	Shanghai	1,783	2.1%
Tata	India	Mumbai	1,241	1.5%
Mazda	Japan	Hiroshima	1,189	1.4%
Mitsubishi	Japan	Tokyo	1,140	1.3%
Dongfeng	China	Wuhan	1,138	1.3%
Fuji	Japan	Tokyo	753	0.9%
FAW	China	Changchun	706	0.8%
Total 19'			**76,110**	**90.3%**
Total world			**84,236**	**100.0%**

Table 1 - The major automobile companies: world production ranking
(2012). Charles Bohan © IGD, 2013. Data Source: OICA, 2012

Defining the functions of the enterprises in the Automobile industry

The whole range of corporate functions, from initiation of the product to its sales, provides a comprehensive description of the relations in the industry but needs the information about logistic movements between firms. On a large set of enterprises, it is not possible to have all this information and thus the global value chain will be geographically identified and interrelated through a series of ownership relations in which individual cities

play very different functional roles in the industry (Sturgeon, 2000; Krätke, 2014).

Functions were identified combining information on Orbis data (BvD, 2013) and company's reports. The information was allocated to its closest fit among the nine sectors or functions proposed by Dicken (2001) that are ranked by their importance in terms of number of enterprises:

- Sales: consist of all subsidiaries whose principal activities wholesale, retail, trade, repair and car maintenance and represent 39.6% of the total subsidiaries of the 19 major companies.

- Finance: regroups financial and insurance activities, (19.5% of all subsidiaries).

- Manufacturing: includes the production of spare parts and the assembly plants (23.4%).

- Management: represents the management and administrative activities (6.4%).

- Leasing: this function constitutes all forms of car renting and solutions to acquire a car. This function is distinguished of finance because it's a feature activity of the automobile industry (3%).

- R&D: High and low level activities of research and development and design, including formation centres (2.8%).

- Logistics: transportation activities and software solutions (2.7%).

- Public relations: services designed to improve the conditions of workers and the image groups in public policy (1.2%).

- Marketing: advertising and market study activities (1.1%).

Sometimes, some enterprises develop several functions and we chose the main ones according to the companies' reports. For example, in Poznan, the "Volkswagen Poznan" plant is mostly manufacturing-oriented although it is also a sales plant. However, since an analysis of the nine functions would be too detailed to explore in one paper, only the five most significant functions are investigated:

- Sales, finance and manufacturing, which are predominant in weight;

    – Management and R&D functions, which are important in terms of strategy and organization.

We also distinguished the main corporate groups' headquarters to the other headquarters. The main headquarters of the European constructors and the regional European headquarters of the non-European groups as General Motors (US) or Toyota (JP) are unique for each group (Figure 1).
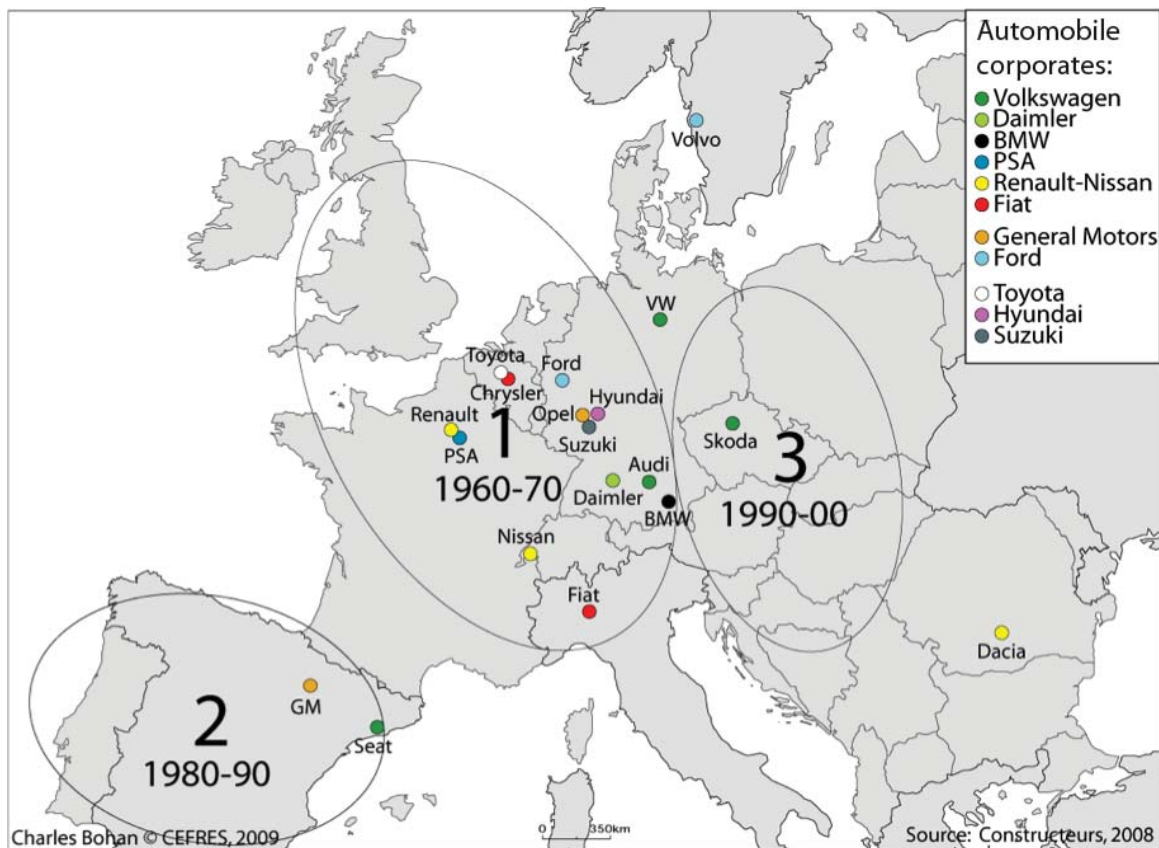
Fig. 1 – Location of automobile headquarters and regional headquarters in Europe

Delineation of networks

The firm networks of all 19 major automobile corporations at the micro level of their subsidiaries were identified. Since the automobile industry is a diverse sector that includes very different sectors, only the subsidiaries related to the automobile sector for each specific firm were selected. For instance, the Fiat group is connected to the media sector and Daimler to the aeronautic and defense sector (EADS), but subsidiaries of this type were

excluded. This decision ensured that only the core functions, those directly associated with, of the automobile industry were investigated.

All corporations have a chain of ownership from their headquarters to their various subordinate levels of firms (Alderson and Beckfield, 2004; and Wall and van der Knaap, 2011). This forms a quasi-tree and the ORBIS database (BvD, 2013) indicates all the ownership linkages of each firms. It does not affect its functions. For instance, the management entities are not necessarily headquarters or regional headquarters that are at the top in terms of power. A subsidiary with small administrative functions can be at the bottom of the regional or specialized hierarchy. At the opposite, a main headquarter entity can have a financial attribution if finance activities predominate on management activities. So, every entity can generate outgoing or incoming links, whatever its function.

The 19 corporate groups spread networks of (quasi) trees of subsidiaries, with the maximum of 9 levels of subsidiarity. In total, these micro-networks represent 11,000 subsidiaries including 4,465 in sales, 2,639 in manufacturing, 2,205 in finance, 715 in management and 323 in R&D. The number of employees of each company, or its turnover, could not be used because of missing information. So all the plants, offices, societies, etc. represent the same weight in the analysis. Although this could cause difficulties if the objective is to deal with the importance of the subsidiaries to local economies, it is of less concern if we aim to assess the attractiveness by city.

Aggregation of enterprises by cities' areas

Another step consisted of building 'urban' networks according to the locations of the 19 micro-networks. The aggregation process shifted from the networks of the 19 main firms that contained 11,000 subsidiaries (micro level) to their location in almost world 700 large urban areas (cities). Since the functional areas of cities are not limited to their strict administrative boundaries but rather extend to their surroundings, the subsidiaries were allocated to their functional urban areas (Rozenblat, Pumain, 2007). In many countries, the level of regular commuter flows have been used to delineate these functional urban areas (FUA), such as in Europe (Halbert et al, 2012)

and the USA, Canada, according to national delineations in China and India and other BRICS countries (see Swerts, 2013). The equivalent was built manually for other countries of the world where standard FUAs are not available.

The sum of the outgoing links from each city is called the Outdegree or power. That means number of subsidiaries controlled by each city in the other cities. For instance, if a company from Poznan possesses 3 subsidiaries in Warsaw and 2 in Krakow, Poznan will get an Outdegree of 5. This method helps to characterize the control ability, hierarchical power and dominance over financial control of the corporations within each metropolis.

The incoming links (or Indegree), which is the opposite, identifies the various subsidiaries that have been located in other cities, presumably on the attractiveness of that centre for that business. This provides a measure of the 'attractiveness' of the city to the external subsidiaries, which can be seen as representing the use of local production abilities, access to specific knowledge or resources, innovation abilities, etc.

Cities' positions in the European automobile network

In section the first section, we will illustrate how the European automobile network gives different weights to the cities according to outgoing or incoming links of subsidiarity, which respectively underline the power and attractiveness of cities. In the following section, the focus is on the five main functions of the automobile industry highlighting the specialization of Central European cities.

European patterns of the automobile network

Figure 2 shows the total number of incoming and outgoing linkages for the main automobile companies in comparison with those in Western Europe. The power of the cities (Outdegree) reveals that the Central and Eastern European cities do not yet have significant control or importance in corporate networks for there are few power or outgoing links. However, they have many incoming links, showing they constitute strong attractiveness for

the locations of subsidiaries. Prague, Warsaw and Budapest have comparable linkages with Western European cities, such as Madrid, Frankfurt or Milano, in the automobile industry. This is a consequence of combining lower production costs and a skilled workforce. Eastern European cities also represent a young dynamic market and a bridge between Western and Eastern European markets.
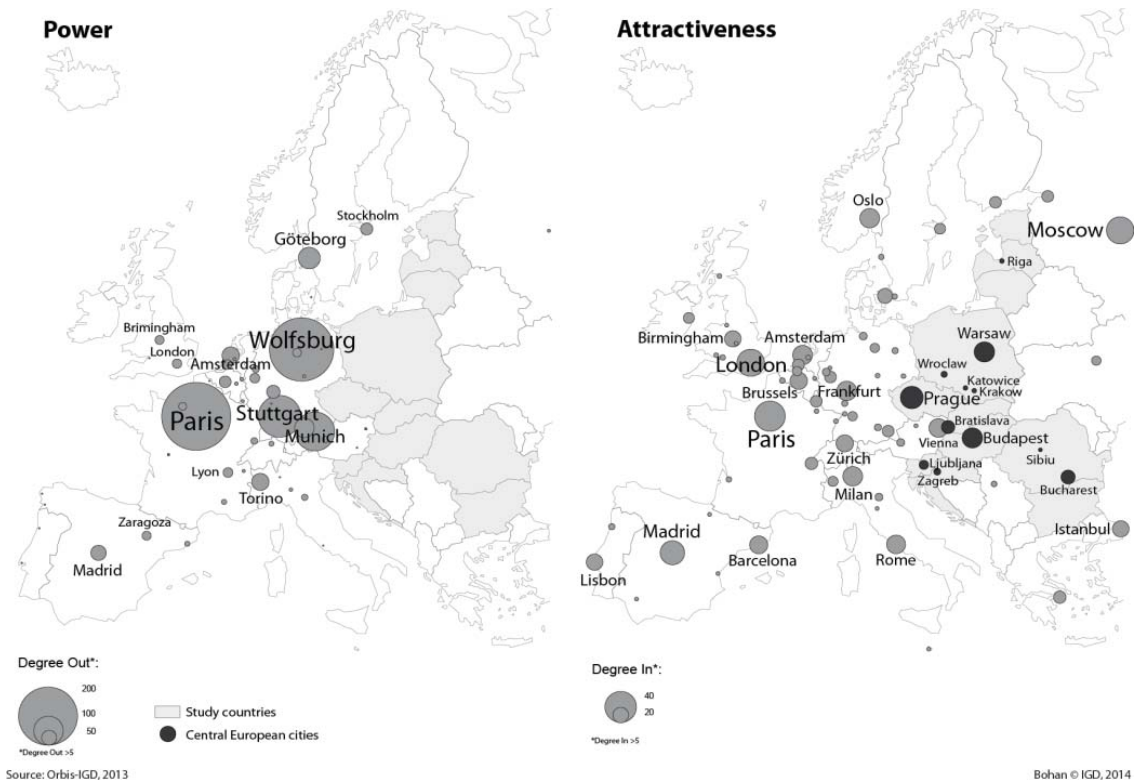
Fig. 2 – Power and attractiveness of European cities in the automobile industry

The automobile industry networks are quite closed at this continental level: 80% of foreign direct investment comes from other countries of Europe. Japan, United States and Korea share the rest of the foreign investments (CNUCED, 2012). China is not yet very present in Europe compared to current leaders. The Asian and American companies mainly cooperate with Western corporations in joint ventures or limited alliances. For instance, Shanghai-based SAIC cooperates with General Motors, FAW with Volkswagen and Dongfeng with PSA. They can expect to grow on the Chinese market, but based on current trends their growth may not affect Central European locations since these are still under the control of Western

companies. For example, Volkswagen, the European automobile leader, already owns the Czech firm Skoda, which would make difficult for Skoda to chart an independent growth strategy, since control is exercised by the German company. A different diffusion scheme would only occur if the older automobile firms like Skoda or Dacia had grown separately, and not been incorporated into the Western European automobile firms. However in these circumstances, these historical Central European firms would probably not have survived without the purchase and investment by Western firms in the very competitive world auto market. The process of development so far seems similar to the integration of the Iberian car industry after the European Union enlargement in 1986. In this case, the most strategic functions of Seat were absorbed by Volkswagen, and moved to the Western core (Lung, 2004).

Automobile functions of Central European cities

The European subsidiaries of the automobile industry have divided in nine functions and five of the most important functions of the automobile industry are shown to enable an easier comparison of support (sales, finance), productive (manufacturing) and strategic (management, R&D) functions.

The sales function, in Figure 3 (a), shows that a large number of subsidiaries are located in three of the main Central European capitals, Warsaw, Prague and Budapest, and to a lesser extent in Bratislava and Bucharest. Therefore, the sales subsidiaries are quite concentrated in capital cities and are much less diffused in Eastern European cities than in Western cities.

By contrast, the locations of the finance subsidiaries in Figure 3 (b) reveal a much more concentrated pattern in the main Western European centres, with only very minor locations of such subsidiaries in places such as Budapest and Prague, showing not only the way control is still exercised in the West but in the underdeveloped nature of the capital markets in the East.

The patterns of the manufacturing subsidiaries have a more dispersed form, with concentrations in many of the Eastern European centres, and Istanbul (Figure 3 (c)). Indeed, Prague and its surrounding region almost

compete with Paris in terms of the number of subsidiaries. In the Western part of Europe, historical centres of the automobile industry, such as Birmingham/Coventry, Stuttgart, Torino and Sochaux (in France) still provide important capacities, but Polish, Hungarian or Czech cities now represent equivalent sizes. Although it must be stressed, these maps are based on the number of subsidiaries, not their size, as not enough comparable data is available for this calculation to be made.

The locations of the management and R&D functions (Figure 3 (d)), confirm that all of the most strategic functions stay in the Western part of Europe and have not shown any significant relocation to the East. Stuttgart still possesses most of the European management and R&D functions, along with Paris, Munich and Wolfsburg. This underlines the remaining peripheral position of the Central European cities in the European organization of the global value chain of the automobile sector.
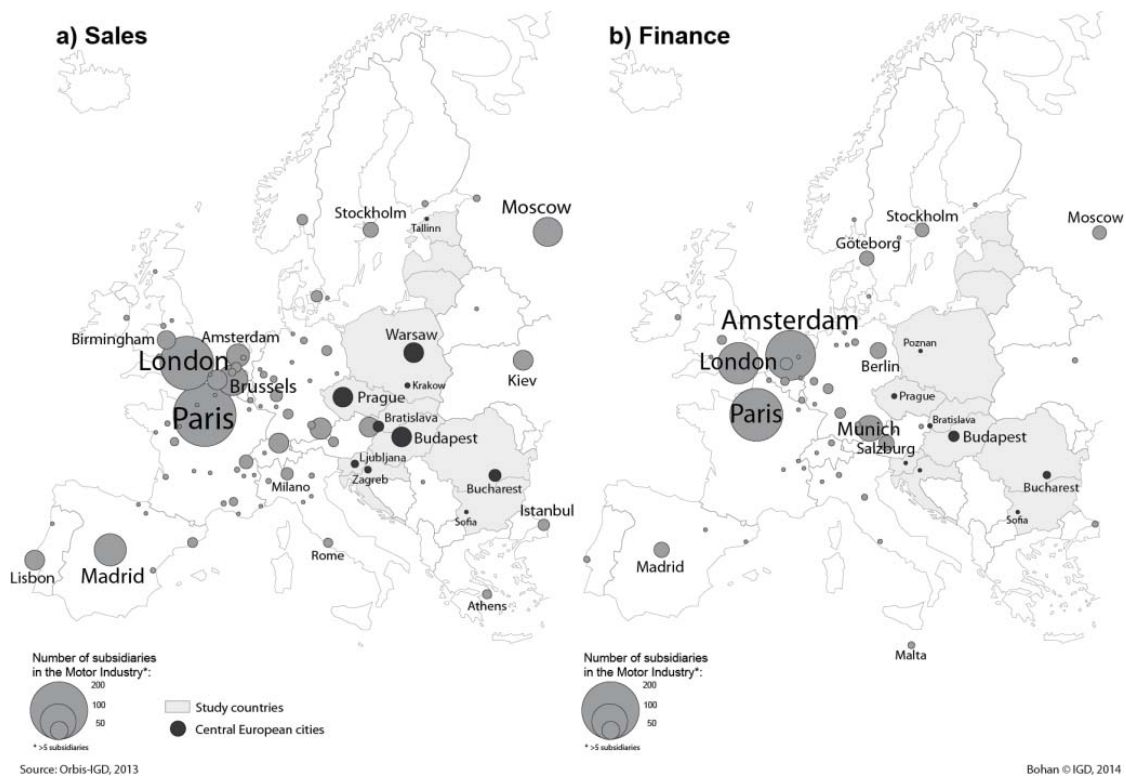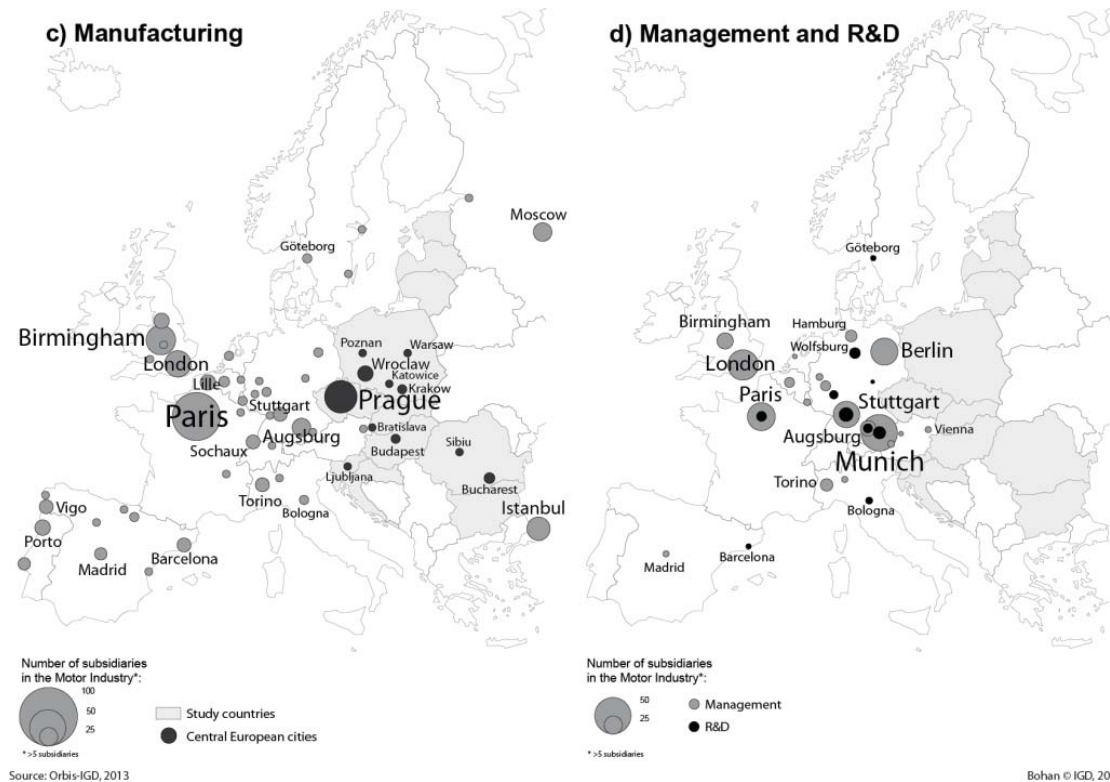
Fig. 3 – Sales (a), finance (b), manufacturing (c), management and R&D (d)
subsidiaries of the automobile industry in Europe

Conclusion

The empirical results of the analysis of the position of Central and Eastern European cities in the networks of the automobile subsidiaries reveal their strong attractiveness for some of the sectors of the industry but not for all the functions of the global value chain. Power (where headquarters are located) is still mostly concentrated in the major Western European cities, which are the historic centres of the automobile industry. Central European cities remain in a peripheral position compared to Western cities because of the re-organization of the local companies incorporated into Western powerful automobile corporations. These can be considered as an extension of the Western automobile industry more than an independent and emerging region because of their lack of strategic functions. Although Europe is becoming more integrated, the Central and Eastern European cities remain quite peripheral in the range of functions they contain in the automobile industry.

Thus, the paper demonstrated that the assumption of Domanski (2003), who forecasted the rapid rise of Central European cities as European technological leaders, has not yet come true. The attractiveness of Central European cities for functions with high added value has not yet been reached. So the industrial upgrading by businesses and institutions is still in progress after 10 years of adhesion to the European Union. Western companies still maintain leadership, which implies the dependence and specialization of Central European cities in low price manufacturing and intensive mass production. With this initial condition creating a strong path dependence, the catch up of Central and Eastern European cities compared to Western cities will be more difficult than expected and will take a long time.

The public action that could accelerate this process is a higher support of the EU (H2020 and other structural funds) in the technological and scientific integration of Central European cities. The goal would consist of reinforcing the local base of historical local firms (such as Skoda and Dacia) who all have been incorporated into Western companies. An innovation or institutional governance reinforcement would leverage all of the urban services and complex entrepreneurial organizations, giving more autonomy to the development of the Central European urban system.

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The Importance of the Territory: Postal Logistics and the Urban System in Brazil

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Abstract:

This paper aims to discuss the Brazilian urban system and the postal topology in the country. The mail has being connecting the Brazilian territory since the 17th century, when it was officially set up. From that time on, the urban system has been allowing postal services to succeed and also has had its development influenced by the development of mail. Since the creation of the enterprise Correios in 1968, the mail has played an important role in Brazil's use and connection of its territory. The methodology for this paper consisted of using the last urban system study made by Instituto Brasileiro de Geografia e Estatística – IBGE in 2007, which demonstrates the present structure of the urban system in Brazil, considering all administrative centers of the 5565 municipalities in the country. We analyzed different data from Correios' network, such as: delivery time from and to metropolis and other major cities; the location of major postal logistic centers in Brazil; the most important route lines for the mail in the country. The results showed that metropolises and major cities are more connected than other urban centers in the territory due to express services that ensure a faster temporality of flux. Because of postal services, a big city in far Amazonia can be virtually approximated, more than a small town near São Paulo or Rio de Janeiro. Even though there are differences in temporality in postal topology, every city is somehow connected to the other parts of the territory, only because of a particular characteristic of Brazilian mail: it is a State monopoly, extending the service throughout the country in all cities. It is the only institution with such capacity in Brazil.

Key words: urban system; mail; State; logistics

Introduction

This paper aims to discuss the Brazilian urban system and the postal topology in the country. In this study, we will focus on the relationship between the main characteristics of the urban system as well as its current transformations and the topology of the mail network in Brazil.

In the late 1990s and in these first years of the 21st century, it was argued that mail would disappear due to radical changes in the transport and communication techniques, affecting the way people send and receive messages and information worldwide. In many places, mail state departments and companies were treated as obsolete, rather than of strategic importance for the country sovereignty and important for the integration of the territory. These thoughts would surely allow neoliberal politics to privatize most of the mail public companies in all continents.

The advent of the internet brought other temporality in communication and the "instantaneous" was possible for the first time in history. From this time on, it was not necessary to wait days or even weeks for a letter or document to reach another part of the world. The electronic mail – e-mail – put a gap between the past and today's communication. Even though the telegraph and the fax are much more ancient than the computer, they never had the spread and the embeddedness the internet has today.

What is not commonly recognized is the fact that great global mail operators – FedEx, UPS and DHL, for example – were created almost at the same time as the internet and talk of the obsolescence of the (public) mail companies. The existence of these global companies reveals at least two points: first, the mail did not and will not disappear, but it is certainly changing in content and meaning; second, mail continues to be or is now even more lucrative than before.

Actually, instead of eliminating the mail service, the advent of the internet improved it considerably. One great reason revolves around what we call e-commerce: after the internet, a new way of shopping (online) is rising all around the world and seems to be irreversible. Nevertheless, the operation in a cyberspace does not mean it does not need its material equivalence to succeed, that is, every product bought must be delivered in a specific place

and in a certain time. This new content opens up a great opportunity for mail companies to improve its performance today, but it also implies more rigid delivery times and a variety of services. Even if many other non-postal companies deal with e-commerce solutions, most of the products bought online are delivered by mail companies, imposing a transformation of activity from the traditional postal services to modern logistics enterprises.

Studies of the mail are not common in geography. In general, many geographers may not have attended to the importance of this activity today or are studying it according to other perspectives, not trying to understand its role in the territory structure and in the urban system. The study led by Reguera (2007), for example, despite its inviting title *"la lucha postal por el territorio"*1, is mainly about geopolitics and philately, describing how the conflicts for territory and boundaries are represented in postal stamps from all continents. The study of mail today is important to reveal the relations between material and immaterial contents of the territory. It can also consider the importance of circulation in the production process and the different connections among cities in the same region or country.

The methodology of this paper consisted of using the last urban system study made by Instituto Brasileiro de Geografia e Estatística2 – IBGE in 2007, which demonstrates the present structure of the urban system in Brazil, considering all administrative centers of the 5565 municipalities, officially the "city" or "town", in the country. Afterwards, we analyzed different data from the Correios' (mail) network, such as: delivery time from and to metropolis and other major cities; the location of major postal logistic centers in Brazil; and the most important route lines for the mail in the country. This analysis uses a system of concepts and ideas developed by geographers from a range of nationalities. Some expressions in Portuguese are all translated to English by us, but presented in the original language in the footnotes (or vice versa). The figures' legends are also in Portuguese.

The text is divided into five parts: this introduction, presenting the text and contextualizing the theme; the second part is Brazilian mail service: historical notes, where we try, in few words, to bring up an idea of the principal transformations of the mail service in five centuries in the country;

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1 "Postal war for the territory" (our free translation)
2 Brazilian institute of geography and statistics (our free translation)

in the third part we present the current structure of the Brazilian urban system in the beginning of the 21st century, according to the last study led by IBGE and try to identify some important transformations by comparing it to previous studies in the past decades; the fourth part is called Postal logistics and the urban system in Brazil: differences and similarities, where we analyze how cities are included/excluded in the mail network and its consequences for the territory; finally, we brought up a conclusion from the ideas developed in previous parts, more indicative of questions than conclusive itself.

Brazilian mail service: historical notes

The letter written by Pero Vaz de Caminha, informing the King of Portugal about the new lands "found" in South America by Pedro Álvares Cabral's expedition, in 1500 is considered the first official Brazilian correspondence. This fact, however, did not inaugurate the mail service at the same time as colonization, once only in the 17th century, in 1663, the mail operation initiated in the colony after the institution of the postmasters. This period was marked by an emergent mail service that did not connect the colonial cities, most of them in the coast, but did ensure a slow communication between the metropolis (Portugal) and some parts of its colony (Brazil), according to Rosario (1993). The first postal communication between Rio de Janeiro and São Paulo was realized in 1773, very late in comparison to the development of the activity in other countries. The first city in the interior to be connected by mail services was Campos dos Goytacazes in 1798.

In the early 19th century, the arrival of the Real Family in Brazil changed the capital of the kingdom from Lisbon to Rio de Janeiro, beginning important changings in the colony. In 1808, the Banco do Brasil, a public and the greatest bank in Latin America was established. For the mail service, a direct connection between Rio and London replaced the old hub in Lisbon, a sign of the relative autonomy of the colony by that time. Fourteen years later the country became independent of Portugal and the mail services started to develop internally. From this period, residential delivery of correspondences was initiated – until that time, addressees got their mail

directly in the post office. The spread of the service to some major interior cities was also established (Poupard 1979).

The technical conditions of the late 19th and the early 20th century ensured an acceleration of the postal system in Brazil. First, the installation of the electric telegraph in 1852, then, the beginning of the transportation by airplane in 1921, changed the material conditions and made the postal network more complex. The Departamento de Correios e Telégrafos3 - DCT, created in 1931, was a decisive mark in this process of modernization (Correios 2012b). During the military period of the Brazilian government, under the ideology of the national integration and the colonization of remote areas such as Amazonia, the DCT was transformed into a public company called *Empresa Brasileira de Correios e Telégrafos*4 – ECT or simply Correios.

This process led to the fragmentation of the mail service and the creation of a new modality, the Serviço de Encomenda Expressa5 – SEDEX. The express mail service was created in Brazil in 1982 (Correios 2012a) and inaugurated a new temporality in the mail, in conformity with the flexibility and just-in-time ideas introduced in production by that time. Later the SEDEX itself was also fragmented into new modalities even more rigid and rapid.

This new business sense, according to Gertel (1991), turned the postal object (letters, packages, etc.) into a commodity, with differences in prices, types and clients served. It also resulted in the possibility of the private companies offering mail. In order to guarantee the public status of the mail, the State created a rule, the law 6538 in 1978, known as the Postal Law. It ensured that the mail service in Brazilian territory could only be offered by the State, which it does through Correios, creating a postal monopoly in Brazil. In addition, it also obliges the State to offer the service in every city and town of the country, expanding its influence to the whole territory. This prerogative was kept even after the military period, when a new Constitution was written in 1988 continuing to prohibit any another agent to offer a mail service in Brazil. The foreign companies, such as FedEx, UPS and DHL can

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3 Mail and telegraph department (our free translation)
4 Brazilian mail and telegraph company (our free translation)
5 Express mail service (our free translation)

operate only from Brazil to other countries and/or with postal objects over the Correios' specification6. Those global couriers tried unsuccessfully to break the postal monopoly before the Brazilian court in 2009.

What is astonishing talking about Brazil's postal history is the 1990s' period. The neoliberal thoughts could be found in almost all Latin American governments, as well as in Brazil. In this country, most public services, including banks, telecommunication and transportation were targets of privatization, marking a new period in the history of these services. The postal politics, however, were not to privatize, instead of what was happening in most of neighboring countries, but to modernize and keep it public at the same time. Today, the company Correios is the biggest public employer in the continent (Latin America) and the most respectable institution in Brazil7.

At the beginning of the 21st century, Correios suffered other complex transformations, including: the function of correspondent bank, offering bank services in its agency all over the country; a kind of "logistics arm" of the State, collecting, treating, transporting and distributing objects in big operations such as the elections, the educational books distribution, vaccine distribution and donation aids in case of catastrophes; the "logistics arm" of the e-commerce market, the only logistics company operating in the whole country.

Brazilian urban system in the beginning of the 21st century

Since the studies led by Labasse (1955) and Rochefort (1960) in France, urban system analyses became important in geography. It does not mean that it was not studied before, but it started to receive more attention from that moment on. The classical study of Central Places in Southern Germany from Walter Christaller in 1933 (Christaller 1966), besides all the criticisms, inspired many geographers on their studies of the early twentieth century.

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6 Correios carries up to 30 kilos and limited-size objects only
7 According to Correios (2012b)

In Brazil, official studies called *Regiões de Influência das Cidades*8 - REGIC have been made by the IBGE, a state institute of research. The latest study was concluded in 2007 and launched in 2008; the previous ones were presented in 1966, 1972, 1987 and 1993. We will now analyze the Brazilian urban system according to the results of the REGIC in 1966 (Figure 1) and in 2007 (Figure 2).

Traditionally a simple colonial urban system, with an important center in the coast and many undifferentiated small towns connected to it (Corrêa 2007), the post-war Brazilian urban system is a lot more complex, but heterogeneous in its territorial structure. In 1966, São Paulo had already reached the highest degree, considered from that time on the "great national metropolis". Rio de Janeiro was considered "national metropolis" and the other metropolises, with a regional role, were: Porto Alegre, Belo Horizonte, Salvador and Recife. The brand-new capital, Brasília, did not appear with an important national role at that time. The territory, analyzed from the urban system structure, showed a hard east-west differentiation, with most cities (metropolis or small towns) concentrated by the coast. Another differentiation was starting to appear between northern and southern parts of the territory, revealing a higher concentration and complexity surrounding São Paulo and Rio de Janeiro, what later Milton Santos (Santos and Silveira 2001) called the "Brazilian core area"9, including the states of the Southeast, South and part of the Center-West regions.

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8 Cities' influence region (our free translation)
9 Região concentrada do Brasil (our free translation)
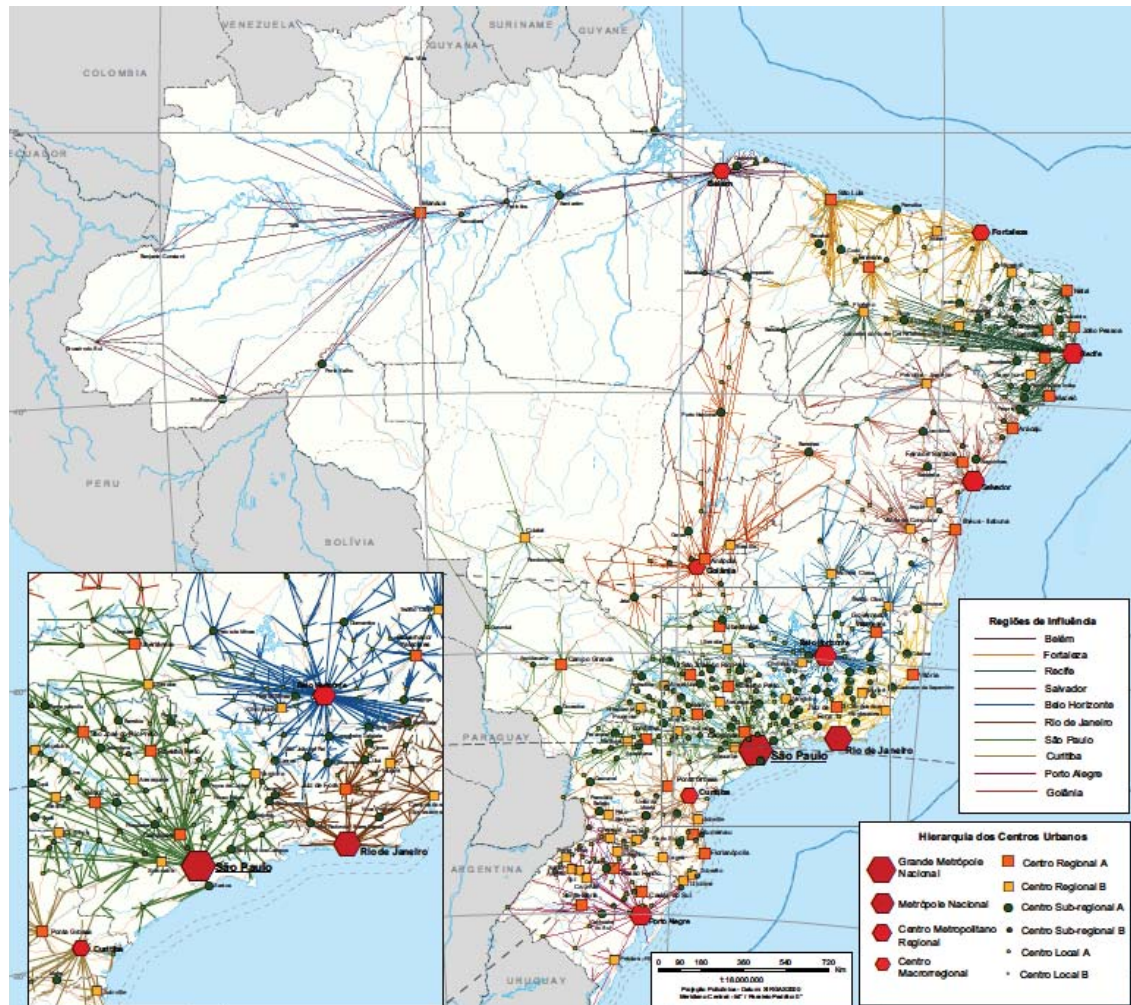
Figure 1 - Brazilian urban system in 1966. Source: IBGE, 2008

In four decades, the changes in the urban system are still ongoing, due to new material conditions – new roads, airports, the industrial migration, new agricultural areas, among others – and immaterial ones – informational flows, new rules and lows, etc. Many cities emerged in the western part of the territory, characteristic of a new urbanization, while the metropolis phenomena extended to other cities. São Paulo continued to be the only "great national metropolis", even more powerful as it can capture, create and transmit information to the entire territory – it is the "omnipresent metropolis", according to Santos (1993). Now Brasília and Rio de Janeiro are both considered "national metropolis", once Brasília has an important public and administrative role (in contrast of the economic command from São Paulo). This structure is now even more complex because the list of four

regional metropolises Porto Alegre, Belo Horizonte, Salvador and Recife has now increased to at least five more important metropolitan centers, with strong regional roles and national importance in some activities; they are: Curitiba, Goiânia, Fortaleza, Belém and Manaus. The urban system became more concentrated in the east part of territory, but also more complex in the southern "core area", presenting many intermediate centers and a deeper territorial division of labor among them.
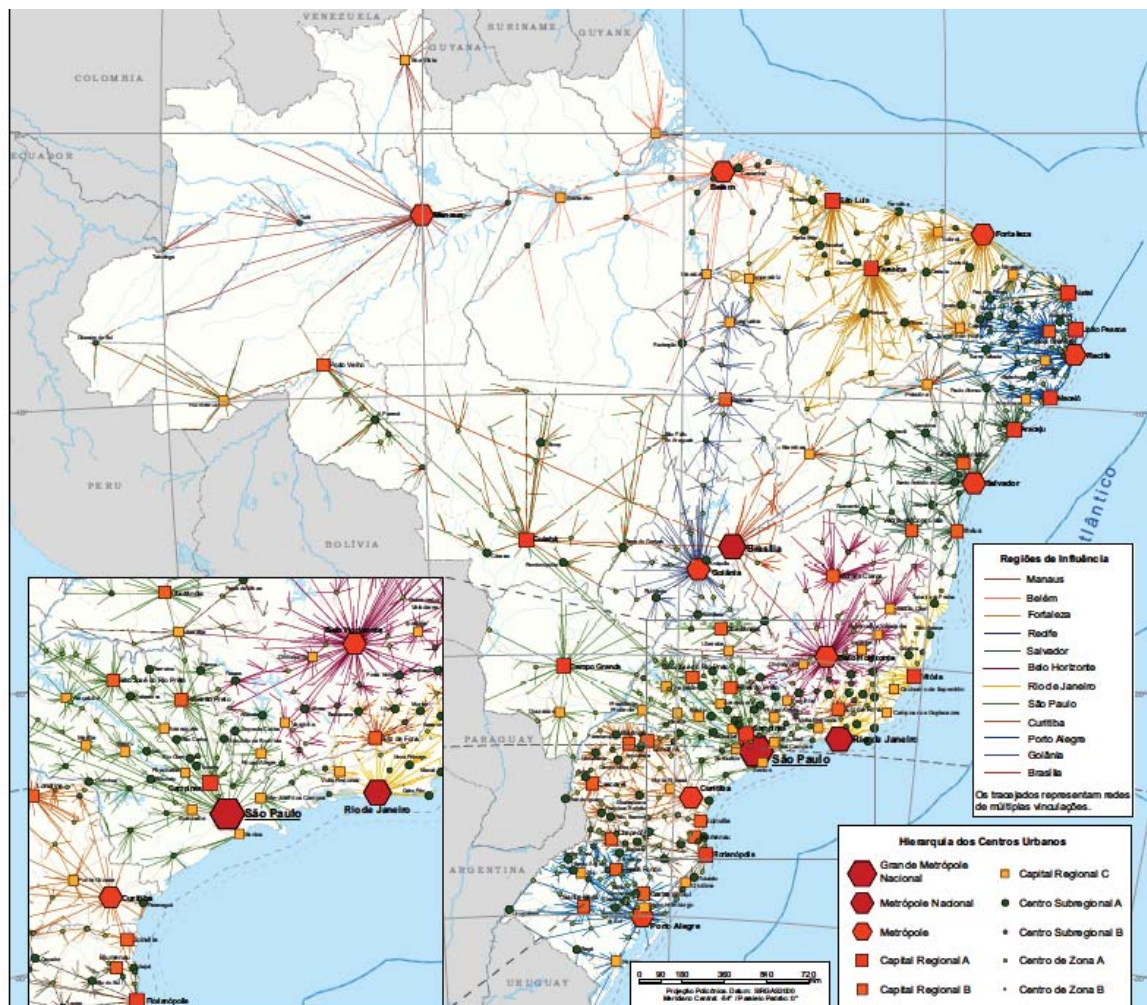
Figure 2 - Brazilian urban system in 2007. Source: IBGE, 2008

Postal logistics and the urban system in Brazil: differences and similarities

The analysis of the postal topology finds a correspondence in Jacques Lévy's thought (Lévy 1993). The topologic metric has connections to the idea of network and has nothing to with the physical distances in the territory. A topologic analysis of a company or service can offer elements to discuss centrality and the role of each center in the urban system.

In the Brazilian postal topology, using the topology of the public company Correios as a proxy, the metropolitan areas have a central role. It is, first of all, caused by the origin of the main flows (in quantity of objects), obvious in case of population and economic activities concentration. But this central role is reinforced by many special conditions of the postal logistics activity. The first of it is the location of major postal logistic centers in Brazil: dealing with almost ten billion objects/year (Correios 2012b) requires a large logistics structure in order to collect, treat, transport and distribute the postal objects to each of the 5565 cities in Brazil. In this tangle of origins and destinations, some cities become logistics centers, gathering the objects and redistributing them to other cities. In theory, every city has its centrality, similarly to the urban system. The schema goes like this:

- Post offices exist in every city, but some major cities have much more than just one;

- From the post offices, the objects (packages, letters, etc.) go to a regional center;

- Then, from the regional center the objects follow to the capital of each state10;

- At last, each state capital sends the postal objects to one important logistics center.

Only few metropolises possess all functions, that is, have the local post office of the neighborhood and the logistics center. These metropolises, with a role that covers more than its own state, are: São Paulo, Rio de Janeiro, Brasília, Recife and Curitiba, in the top stage, Fortaleza and Salvador, in the second one. Metropolitan areas such as Porto Alegre, Belo Horizonte and Manaus are connected to one of the previous centers. In any case, the most important route lines for the mail in the country benefit the capital and

10 Brazil is divided into 26 states and the federal district, where is located the capital Brasília.

metropolitan areas, allowing connections between them despite the rest of the territory.

Medium cities have also an important role, as they allow the connection between local cities and the state capital/metropolis. Generally, their role is restricted, not connecting to other medium cities or cities located in other states. However, recent changes in the postal topology started to break this structure, choosing some non-metropolitan/capital cities as logistics centers. These cities, except for Feira de Santana (BA), are all in the countries "core area", revealing the complexity of the urban system in this area. Examples are: Campinas and Bauru (SP), Uberlândia and Juiz de Fora (MG), Londrina and Maringá (PR) and Joinville (SC). These cities can connect to distant parts of the territory without the intermediation of the metropolis, allowing faster links and another temporality.

Delivery time is an important content of the postal topology. The basic express service – SEDEX is offered in all cities, but the delivery time differs according to the location of the city. This location does not always have to do with distance, but how central is the city in the urban system. Under the slogan "mandou, chegou"11, it seems the whole territory is connected quickly, ignoring the differences of the geographical space. This express service connects all metropolises, capitals and major cities in one day. In Amazonas, for example, the capital Manaus is more rapidly connected to very distant cities, such as Porto Alegre in the far south of the country, than to neighboring cities where the faster way for the mail to get there takes five or six days, usually by boats in the rivers of Amazonia. The country's "core area" has the shortest delivery times, as well as some other metropolises and capitals in other less developed regions. This is in accordance with what Milton Santos called the constitution of a techno-scientific-informational milieu12 in Brazil (Santos 1996), a part of the territory with a greater presence of technique, information and science in its constitution and operation. This milieu appears as a continuous space in the "core area" and just as points and spots in the other three regions.

The express service is even more selective if we consider its variation. In three decades, new modalities of the SEDEX were created, always pursuing

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11 "Sent, delivered"
12 Meio técnico-científico-informacional

the frenesi of the speed. The SEDEX 10 offers an express service with a shorter and precise time, delivering the postal object until 10 a.m. of the following day. The SEDEX 12 is similar to that one, but the delivery time is at noon. More rapid is the SEDEX Hoje service, delivering the objects on the same day of the post. These faster services are even more selective, connecting, as priority: metropolises; state capitals; cities located in metropolitan areas; important medium cities, generally in the national core area; international tourist centers; important industrial cities; one or other medium city in the modern agricultural areas. These cities could be considered as spaces of the speed[13], as Santos (1996) called some areas endowed with upper conditions of fluidity.

Conclusion

The State's role in the urban system continuous to be central and it seems to be even more important in countries with such regional differences, like Brazil. An analysis of the bank topology in Brazil shows that, due to privatization, state capital cities lost centrality as they did not continue to be centers of territorial management[14], as pointed out by Corrêa (2007). The private banks chose São Paulo as the hub of their activities. In the case of mail, cities that are state capitals still have an important role due to the public status of the activity. The Brazilian postal topology is similar to other public services in the country, with a strong centrality in Brasília and in the other state capitals. This model of hierarchy seems to be less concentrated and spreads functions through the territory. While the market seems to result in concentration, State intervention seems to result in diffusion.

The express services are selective and impose fragmentation and differentiation in the urban system. Even when just some parts of the territory have conditions for fluidity, the market anticipates differentiation by requiring speed wherever it is possible, including some cities and excluding many others. It's about a network of networks, where the delivery time is one special condition to be part of a new temporality in the "spaces of speed".

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[13] Espaços da rapidez
[14] Centros de gestão do território

The rules have an important role in the territory. Even selective in some express services, the mail has a unique capillarity in Brazil, covering all cities and bringing more equality to the urban system. This has nothing to do with market, but surely it is about the obligation the Postal Law imposes to the State to offer the service in the whole territory. This aspect points to the inseparability between material and immaterial contents of the territory, the geographical space itself being considered as a "set of systems of objects and systems of actions"15 (Santos 1996).

The importance of location is reinforced in times of globalization. The territory, the distances and the geography remain highly significant despite the writings of many authors at the beginning of this century. The possibility of rigid delivery time and the frenesi of speed increases the selectiveness, which differentiates the cities in the urban system, specializes them and increases the importance of the urban system itself to the success of capitalist activities.

Logistics is another word for corporate circulation. The understanding of what does mail mean today passes by the introduction of logistics concepts in its activities and the increasing role the logistics services (generally related to e-commerce and big operations) are playing in opposition to the old (but still existing) communication function of the letters. The mail does not disappear in times of digital communication, but changes in content and form. In Brazil, the postal topology causes a reinforcement of the existing urban system structure, connecting the metropolises and major cities, but also ensuring the connection of every city in the country and the regional role of the state capital cities.

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Metropolitan Regions and the skilled labor problem: a challenge for regional governance systems?

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Abstract

The lack of a skilled labor force has become a big issue for the metropolitan regions in Germany, for which it is especially important to have sufficient skilled labor force. In order to maintain its competitiveness, it becomes increasingly important for the Metropolitan Regions to develop and deploy strategies and measures of providing a sufficient skilled labor force. A key role for this plays the Regional Governance, which have assumed various forms in the German Metropolitan regions. The aim is to show for the cases of the German metropolitan regions of Rhein-Neckar and Nürnberg how the field of action of providing skilled workers in the region, is being steered by the regional governance. The steering of this field of action follows different organizational approaches due to the respective type of regional governance. Whereas the Regional Governance in the region of Rhein-Neckar shows a strong formal institutionalization, it is less formal in Nürnberg. For providing skilled labor force it seems to be a crucial factor to implement a stronger formal institutionalization, mainly of the cooperation between the political and economic sector. However, the more formal the institutionalization of the cooperation is, the more difficult is the participation mainly for those mostly affected by the lack of a skilled labor force, for example the SMEs. Thus, the challenge is to find the right balance between a stronger formal institutionalization and allowing a high participation of stakeholders.

Key words: Governance, Metropolitan Regions, lack of a skilled labor force

Introduction

In Germany, in the context of both a declining as well as ageing population, a lack of skilled labor is increasingly seen as a potential threat to continued economic competitiveness. This has been heightened by the experience of relatively strong economic growth since the economic crises in 2008/2009. Furthermore, this issue of potential shortages of skilled labor has also filtered down to the regional level, where politicians (and others) are increasingly trying to develop and deploy strategies and measures to improve the supply of skilled labor and thus to enhance regional competitiveness. Such strategies tend to focus on attracting skilled labor from abroad or from other regions in Germany, and on mobilizing more of the economically inactive population to enter the labor market, e.g., by improving the skill level of the resident labourforce or by measures allowing for a better work-life-balance. While at present, it is still the rural regions of the country that tend to be more strongly affected by shortages of skilled labor, some of the larger urban agglomerations and metropolitan regions are also experiencing certain shortages. In fact, the most dynamic urban regions also tend to have a high demand for skilled labor due to a high concentration of research and knowledge-driven industries, and it is in these, where future regional competitiveness might be most at risk.

This article assumes that the regional level and regional governance arrangements are crucial for tackling the issue of securing an adequate supply of skilled labor. As Germany introduced a strategy of delineating official Metropolitan Regions in the context of European strategic development initiatives in the 1990s, this article will focus its empirical investigation on just such urban regions, based on the following two key research questions:

- What can regional governance (and an institutionalized Metropolitan Region) contribute to regional economic development by tackling the skilled labor challenge?

- Which forms of institutionalized regional governance are most successful in dealing with this issue?

To investigate these questions empirical fieldwork was undertaken in the two German Metropolitan Regions of Rhein-Neckar (i.e., the region around Mannheim, Ludwigshafen and Heidelberg) and Nuremberg (in northern Bavaria). Both regions have a relatively strong technology-driven industrial base, and are thus highly dependent on skilled labor to ensure existing levels of innovation and regional competitiveness. Yet, the two Metropolitan Regions show very different institutional designs of metropolitan governance, allowing for a better comparison of the importance of forms of institutionalization and the stringency of regional governance arrangements. The research was primarily qualitative in nature, intensive interviews with key stakeholders in the fields of skilled labor and regional governance forming the primary data source. This was supplemented by documentary research and some basic quantitative data analysis on regional economic and employment structures.

Metropolitan Regions in Germany and their metropolitan governance

Metropolitan Regions have formed a territorial category of spatial development planning in Germany since the 1990s. Their introduction was based on the theory that key urban and metropolitan regions – as dynamic economic agglomerations – fulfill a special role as national (and even Europe-wide) drivers of innovation and competitiveness. These official Metropolitan Regions are no new administrative entities as such. Rather, their spatial delineation is based on the idea of functionally integrated urban regions, including one or several large cities and their relatively wide-sweeping sub- and exurban areas. Territorially, they are comprised of a multitude of municipalities and counties (as forms of local government) working together to improve regional development (cf. Blotevogel 2005, Knieling & Matern 2009). Their extent and institutional structures are largely determined and organized from below, rather than imposed from above, which explains the notable diversity of forms of metropolitan governance among them.

Europäische Metropolregionen in Deutschland, Stichtag 01.05.2012

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Datenbasis: Angaben des Initiativkreis Europäischer
Metropolregionen in Deutschland IKM
Geometrische Grundlage: BKG, Kreise, 31.12.2010

Hauptstadtregion Berlin-Brandenburg	Metropolregion Hamburg	Metropolregion Rhein-Neckar
Metropolregion Bremen-Oldenburg im Nordwesten	Metropolregion Hannover Braunschweig Göttingen Wolfsburg	Europäische Metropolregion Rhein-Ruhr
Metropolregion FrankfurtRheinMain	Europäische Metropolregion München	*dar. Metropole Ruhr*
		dar. Metropolregion Köln/Bonn
Metropolregion Mitteldeutschland	Metropolregion Nürnberg	Metropolregion Stuttgart
		dar. Verband Region Stuttgart

Figure 1- Official Metropolitan Regions in Germany. Source (Bundesinstitut für Bau-, Stadt- und Raumforschung/ Initiativkreis Metropolregionen 2012:7)

There is no clear or universal definition of metropolitan or regional governance. In Germany the term is generally considered to describe a form of regional self-regulation with the object of improving regional development. It usually implies network-based structures of cooperation among a multitude of stakeholders and thus a largely voluntary form of cooperation. Metropolitan governance tends not to be designed in a formal or clearly democratic process, however it is based on a fixed system of rules (Fürst 2003, Benz 2001). It refers to cooperation of stakeholders of different sectors operating on different spatial scales and involving complex structures of planning and coordination. Cooperation extends beyond individual projects or problems and is carried out by certain functional units of organization (Fürst & Benz 2003). The concept of metropolitan governance thus alludes to the regional governance of Metropolitan Regions in Germany (Knieling & Blatter 2009).

It is possible to analytically distinguish two types of institutionalization of regional or metropolitan governance, based on their degree or stringency of institutionalization. The "hard" form of metropolitan governance implies a regional institution or organization with some form of political legitimacy. In most cases this would be a public corporation with its own (more or less large) organizational infrastructure and financial resources. Such "hard" institutionalization is necessary if the regional institution is formally given certain tasks and authorities of government, e.g. as a regional planning authority. "Weak" forms of metropolitan governance are based on more or less formalized networks of stakeholders. They tend to be characterized by a minimum of institutionalization, including basic systems of regulation and the existence of some organizational core unit with administrative functions. Such weak forms of metropolitan governance may be sufficient for the fulfillment of voluntary, rather than state-authorized tasks of regional development (Knieling & Blatter 2009, Benz & Fürst 2003). German Metropolitan Regions show a great variety of institutional designs, spanning from very weak forms of metropolitan governance to hard forms with a regional planning association as an organizational core (cf. Fürst 2001, Knieling & Blatter 2009).

The Metropolitan Region of Nuremberg covers 34 cities and counties, including the municipalities of Nuremberg, Fürth and Erlangen. It shows a relatively weak form of institutionalization based mainly on network

structures of a rather informal nature, having assumed some voluntary tasks of regional development. The institutional design of metropolitan governance in Nuremberg is based on three pillars: Firstly, as a democratic core, the so-called council is comprised of political representatives of all municipalities within the Metropolitan Region. Secondly, companies operating in the region have founded an association in civil law in 2013 with the aim of promoting the region and strengthening its competitiveness. Together with the council of municipal representatives, this association decides on strategies and strategic projects for the Metropolitan Region. Thirdly, seven thematic working groups have been formed in which stakeholders from different sectors work together to enhance regional development, e.g. by generating project ideas. A secretariat forms a small organizational core that has assumed the administrative functions of metropolitan governance and coordinates the activities of the various institutions within the Metropolitan Region. Furthermore, this secretariat develops conceptual strategies and has taken over some specific operational tasks such as regional marketing. In general, the institutionalized metropolitan governance of the Metropolitan Region of Nuremberg has very limited operational capacities. Until 2013 its budget had been small, being mainly paid by the regional administrative districts (a regional level of the state government not coincidental with the Metropolitan Region) whose territories form the Metropolitan Region. With its establishment in 2013, the above-mentioned business association has also started to contribute financially to the Metropolitan Region, thus extending its resources for realizing projects. However, metropolitan governance in Nuremberg is still heavily dependent on the commitment of individual stakeholders (Albert & Theobald 2012. Europäische Metropolregion Nürnberg).

The Metropolitan Region Rhein-Neckar, covering 15 cities and counties around Mannheim, Heidelberg and Ludwigshafen, shows one of the hardest forms of regional governance among all Metropolitan Regions in Germany. This "hard" institutionalization implies that the Metropolitan Region has been assigned competencies and tasks well beyond voluntary cooperation for regional development; most notably, it has been assigned the statutory government powers for regional planning. The institutional design of metropolitan governance is based on three key organizations: Firstly, a regional planning association forms a democratically legitimized core,

controlled by political representatives of the member municipalities. Secondly, an association by civil law includes many important stakeholders from different sectors of society, e.g. politics, business and science, and supports regional and non-profit initiatives. This association, together with the above-mentioned regional planning association, acts as a strategic platform for regional development. Thirdly, a limited liability company has been founded to act as a centralized operational unit. It coordinates thematic networks and working groups and carries out projects and measures of regional development. This limited liability company is co-owned by local governments and key regional enterprises that contribute most of its financial resources. These big regional enterprises, especially the chemical giant BASF SE, also played a crucial role in the foundation of the Metropolitan Region. Thanks to the strong financial commitment of these regional enterprises regional governance in Rhein-Neckar has considerable financial resources and a powerful, well-staffed operational unit (Zimmermann 2012, Metropolregion Rhein-Neckar).

Securing an adequate supply of skilled labor in the Metropolitan Regions of Nuremberg and Rhein-Neckar

When public and private stakeholders in Nuremberg and Rhein-Neckar organized to achieve Metropolitan Region status, both were primarily concerned with improving their regional image and enhancing their international profile and visibility. Since the economic crises of 2008/2009, however, the issue of providing an adequate supply of skilled labor has become a very important element of regional development strategies in both regions. Certainly, there had already been rather well-established tendencies of regional cooperation on labor market issues in the Metropolitan Region Rhein-Neckar before 2009. Similarly, some regional networks dealing with the issue of skilled labor had been founded in the Metropolitan Region of Nuremberg before 2009. Nevertheless, Nuremberg and Rhein-Neckar have adopted very different approaches to the skilled labor issue and regarding the role Metropolitan Governance institutions in the process. This is due to their differing structures and institutional design of metropolitan governance as well as their different histories of regional cooperation.

In the Nuremberg region the institutions of the Metropolitan Region have generally played only a very minor role in dealing with this issue. This is a consequence of the particular institutional design of metropolitan governance with its very small operational unit, but it also follows from the main principles of cooperation within this region stressing the idea of subsidiarity. Therefore, the Metropolitan Region, mainly in the shape of the secretariat, has played a direct and active role only in two areas: firstly, in terms of marketing the region in general, and secondly, in setting up a homepage providing information about the region which might be important for potential migrants, such as job vacancies or schooling opportunities. Furthermore, the secretariat has had a direct role in implementing some labor force qualification projects funded by the European Union and the state of Bavaria. However, the lion share of activities somehow dealing with the skilled labor issue has been undertaken by largely voluntary cooperative networks operating in the region. Most of these networks primarily aim at sharing knowledge, but they also put forward joint projects, driven by interested members of the network. Accordingly, the work of these networks is dependent on the commitment of important stakeholders within the region, while the institutions of the Metropolitan Region only provide background support. However, the institutional level has served as a communication platform and has helped to establish contact with other stakeholders within the region.

Due to the limited role of the institutions of the Nuremberg Metropolitan Region, those stakeholders most strongly interested or in need of action have had to become proactive on their own account, networking, initiating activities and realizing projects. This means that only those projects are realized which promise to be directly beneficial to participating stakeholders. Such an approach helps to respect the principle of subsidiarity so that the Metropolitan Region does not interfere with municipal activities and competences, and that joint regional projects have to be of use to all municipalities. Furthermore, the more informal network structures facilitate the participation of stakeholders from very different sectors and of different spatial scales. On the downside, however, this institutional design with its very limited role of the Metropolitan Region and the leading role of individual stakeholders causes a certain lack of democratic legitimacy and neutrality. This is due to those stakeholders involved in or leading such

networking activities primarily representing certain and partial interests and thus lack legitimacy and authority to work for and on behalf of the entire Metropolitan Region. Moreover, the lack of direct importance of the institutions of the Metropolitan Region for the functioning of thematic networks leaves the latter dependent on the commitment (financial and otherwise) of individual stakeholders and interests, so these networks can be unstable and inconsistent. Furthermore, it makes cost-intensive projects of a general nature more difficult to establish and finance, e.g., for purposes of joint regional marketing or for international recruitment campaigns.

In contrast to the Metropolitan Region of Nuremberg, the institutional design of regional governance in Rhein-Neckar has led to a far more direct role of the Metropolitan Region's institutions and also to a more top-down approach to dealing with the skilled labor issue. The institutions of metropolitan governance have not only realized large regional marketing campaigns and set up a homepage geared towards people interested in moving to Rhein-Neckar. They have also played a crucial role in organizing big information events as well as initiating and conducting a great number of projects to provide skilled labor for particular municipalities or enterprises. Additionally, the institutions of the Metropolitan Region have also played a significant role in supporting the numerous regional networks and working groups dealing with the skilled labor issue. Staff has been made available for administrative support of such networks and for their public relations needs. The general strategy is to bring together and coordinate all skilled labor-related activities and networks under the institutional roof of the Metropolitan Region.

Hence, the institutional design of metropolitan governance in Rhein-Neckar with its large operational capacities enables the Metropolitan Region to initiate and realize more cost-intensive projects, e.g., in the field of regional marketing, while it also allows for stronger support given to networks for their administrative and public relations needs. Furthermore, the strong role of metropolitan institutions for the functioning of the networks ensures these to be more sustainable while also providing them with more neutrality and legitimacy in terms of working for the entire region, and it allows for some central coordination of networks and working groups. Additionally, due to the Metropolitan Region's status as a regional planning association (i.e., it being a public corporation) it can apply for

national and European development programs in its own right, e.g., for labor market or qualification/training projects. Moreover, since both issues are dealt with in-house, regional planning and regional economic development can be much better and more closely coordinated. On the downside, however, the strong role of the Metropolitan Region and the almost inevitable top-down approach that goes along with it make it much harder for individual stakeholders to get access to working groups and networks. Hence, the needs of individual municipalities or stakeholders regarding the skilled labor issue are not necessarily being fully reflected in the operational work of the Metropolitan Region, and various counties' lack of knowledge about regional activities in this field reveal a certain lack of transparency. Furthermore, the significant financial support of the bigger enterprises for the Metropolitan Region means that a number of projects are primarily designed for their specific needs rather than the region at large.

The role of regional governance in ensuring a (future) supply of skilled labor

From the empirical evidence from these two examples it becomes evident that metropolitan governance, quite independent of its particular institutional design, has an important function in dealing with the skilled labor issue. The institutional infrastructure helps to bring together important stakeholders, to coordinate networks and initiatives and to facilitate intraregional exchange. All these aspects are important for tackling the issue of an adequate supply of skilled labor, as this is a highly cross-sectional issue and challenge which requires the collaboration of diverse stakeholders from different sectors and spatial scales. In this context metropolitan governance can function as a neutral scale of governance, reducing intraregional conflicts and developing joint strategies and measures for common problems. Metropolitan governance can also play an important role in making stakeholders and businesses more aware of this issue, as the Metropolitan Region is a highly visible player within the region.

It also emerges that the particular institutional design of regional governance is significant for determining what can actually be done to tackle the skilled labor issue. An institutional design that provides for more than

just a very weak form of governance or pure networking and which develops certain operational and administrative capacities can indeed increase the regional ability to deal with the skilled labor issue. Firstly, "harder" forms of governance can help to provide administrative and public relations support for thematic networks within the region and thus make such networks more stable as well as more democratically legitimate. Secondly, greater operational capacities also improve the coordination of regional networks and initiatives within the Metropolitan Region and improve the cooperation of diverse stakeholders. Thirdly, a "harder" institutional design with more extensive financial resources contributes to the implementation of more cost-intensive projects for the whole region, which may address important problems of most stakeholders. This concerns mainly problems of regional marketing and of regional image improvements in order for the region to appear attractive for potential high-skilled in-migrants – including internet-based information services, recruitment campaigns or the representation of the region at international fairs or exhibitions. To increase the financial resources and thus operational capacities of metropolitan governance, it is important to include and integrate regional enterprises into the institutional governance design. In general, the existence of a public corporation as one institutional element of regional governance helps in the acquisition of funds from European Union and national development programs.

However, the degree of formalization of governance structures and the range of operational capacities do not directly correlate with the effectiveness of regional governance in tackling the skilled labor issue. This is because, firstly, the skilled labor issue is far too extensive to be completely handled at the regional level where it would overstrain any operational capacities and financial resources. Secondly, for various aspects of the skilled labor issue common regional approaches or solutions do not make sense due to sometimes considerable intraregional differences when it comes to economic structures and labor problems. Therefore, a common regional approach is more difficult in big and heterogeneous Metropolitan Region, and for numerous aspects of the skilled labor issue more informal, network-based forms of cooperation are sufficient and more effective. Furthermore, such "weaker" forms of governance help ensure that only such projects are being realized that respect the principle of subsidiarity and which stakeholders consider so vital that they are willing to actively carry them

forward, especially where small and medium-sized enterprises are concerned.

Conclusions

As the empirical evidence from the Metropolitan Regions of Nuremberg and Rhein-Neckar has shown, the regional level and regional governance arrangements are crucial factors for dealing with skilled labor issue as an increasingly important element of regional economic development. Tackling this issue at the regional scale and through regional governance arrangements is appropriate due to the cross-sectional character of this issue and since it allows for an inclusion of all important stakeholders operating at different spatial scales within the region. The specific institutional design of metropolitan governance can form a highly significant factor in explaining the capacity to act on this issue. More formal regional governance arrangements with stronger operational capacities increase this capacity. However, not every aspect of securing an adequate supply of skilled labor requires common regional strategies or measures and a strong degree of formal institutionalization with sizable operational capacities. Hence, institutional design of metropolitan governance has to be flexibly adapted to the specific aspects and measures required to provide an adequate supply of skilled labor as well as to the structures and sizes of metropolitan regions concerned.

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The Space in Transition: from urban-industrial economy to metropolitan-financial economy

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Abstract:

The primacy of metropolitan dimension, which is simultaneous to financial sphere domination, revolutionizes the social space and imposes new forms and contents to society. Thus, there is a new process of productive and regional organization: the metropolitan-financial economy. Given this hypothesis, the space in transition demands renovation, denial and overcoming categories and concepts: from city to metropolis, from urbanization to metropolization, from industrial to financial, from the urban form to the metropolitan form. It is verified that the metropolitan form is related to network, integration and connection, which denies and reaffirms the agglomeration, reunion and meeting, lighting new simultaneities that does not erase the previous ones, but converge and confront each other. The Urban Geography needs to advance in the theoretical and practical field of world metropolization and financialization in search of new space determination demanded by a developing metropolitan-financial epoch.

Key-words: Metropolitan-financial epoch; Metropolization of Space; Network; Connection; Integration

Introduction

Never before in global geography and history has the feeling of having the world in the palm of your hand been so strong. Technological advances in the field of information systems and means of transport, as well as the effective promises of supersensible links between individuals (brain-brain interface, neurological chips), automatization means (internet of things) and new everyday experiences (the sixth artificial sense, futuristic glasses internet integrated), lead to a new form of spatial simultaneity.

Today, what David Harvey (1989) called "space-time compression" and Milton Santos ([1996] 2000) later called "convergence of moments" is the foundation of a new society-space relationship, which establishes the "simultaneity form" mentioned by Henri Lefebvre ([1968] 2001) with much more intensity and depth than half a century ago. The annihilation of the classical urban hierarchy and the exchange intensification within and between city and centrality networks by the metropolis implosion-explosion reveals and points to a space in transition. This setting determines the metropolitan condition as presence and as horizon of a new production of space, establishing the network, the connection and the integration.

The urbanization of society advanced through all the latitudes and longitudes of the planet and opened ways for the emergence of concrete space metropolization. Metropolitan conceptions of urban and regional planning (New York and London in middle of the last century), metropolitan deconcentration politics of space and metropolitan development (France and Brazil in the 60s and 70s), artificial island construction (Dubai in United Arab Emirates, Miami and Balboa in the U.S., Bahrain, Qatar, Kuwait), Chinese ghost towns (Tianducheng, Zhengdong New Area, Kangbashi New Area), failure of American cities (Detroit, San Bernardino, Orange County) and fever of gated condominiums and planned neighborhoods show that only urban space production is not enough to develop new capital accumulation strategies.

A new time of production of space needs to be born in order to allow the acceleration of "capital turnover" and the promotion, update and renovation of urbanization. Thus, metropolization arises as an inexhaustible modernization source of the capitalist production mode allowing an increased reach of territory control and the formation of a new space policy. The metropolization is "the expanded reproduction of metropolis" (LEOPOLDO 2013a), the colonization of urbanization. Thus, it reaches, in the twenty-first century, power consolidation of metropolises and metropolitan spaces in double potency. Thereby, a metropolitan form emerges (network, integration, connection), which denies, but does not erase the urban form (agglomeration, reunion, meeting).

The marks, signs and unfolding of the metropolitan are everywhere. "Gated communities, shopping centers, metropolitan transport networks, business condominiums, planned neighborhoods, hypermarkets, resort condominiums and others make the materiality of political economy of metropolization" (Leopoldo 2014a: 84). We start from the idea that metropolization involves, on the one hand, capital centralization in major metropolitan centers and, on the other, the dissemination of metropolitan contents in and beyond metropolis and metropolitan spaces.

The orientation change of production of space (from urbanization to metropolization) is directly linked to new spectrums of the predominant process of world capitalism: the financialization of the economy. The thesis defended here is that we move from an urban-industrial economy to a metropolitan-financial economy, this transition determines a new epoch (Leopoldo 2014a and 2014b). It is the metropolitan-financial epoch16.

Given the new challenges of the modern world, new concepts and issues are imposed to Urban Geography. Thus, the geographic thought about the

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[16] The original analyzes of Lencioni (2006) and Pereira (2008) on the emergence of the metropolization of space as a decisive moment of the contemporary capitalist mode of production contributed decisively in the investigation of new contradictions and determinations of space. However, the prospect of triadic periodization of modern capitalist sociability and the dominance of the metropolitan-financial epoch from the overcoming of spatial forms of urbanization (agglomeration, reunion, meeting) by the metropolization (network, integration, connection) are entirely my responsibility. I thank teacher Wayne Davies for helping to point out the scope and limits of this intellectual research in development.

city and the urban needs to update itself in order to capture the space in transition and its new determinations. Empirical studies of Urban Geography, which became a tradition in this specialized field, need go hand in hand with theoretical renovation; otherwise, they will be doomed to be mere idea replicators. In order to start a debate in Urban Geography and beyond, we did an exercise to understand what is universal and what are the differences of contemporary world, based on practical research and critical approaches.

From urban-industrial economy to metropolitan-financial economy

Henri Lefebvre (1972), in "The Urban Revolution", utilizes the historical periodization to speak about the emergence of the "urban society" that illuminates a new world of contradictions. There would be three convergent, opposing and juxtaposed periods: the agrarian era, the industrial era and the urban era. According to Lefebvre (1972), the urban formulates itself, as it is discovered and revealed, becoming at the same time real and virtual, with concrete and utopian predominance of the reunion and of the meeting.

In "The Postmodern Condition", David Harvey (1989) discusses a geo-economic conception of transition with heuristic base on the regulation school. According to this eminent geographer, the twentieth century saw the transition from Fordism to flexible accumulation, a trajectory with intense metamorphoses in way of life, work organization, relationship between state and market. Harvey notes the "space-time compression" as determiner of the contemporary world, which challenges the experiences of everyday life.

Milton Santos ([1996] 2000), in "The Nature of Space", periodizes geography and history from the triad: natural means, technical means, and technical-scientific-informational means. The empire of new social variables, which is increasingly technical, scientific and informational transforms space-time, since the most remote times, when man still had a certain relation of subordination to nature. For the Brazilian geographer, the fundamental connection is the technique, which is the main form of relationship between man and nature, society and environment.

These historical and geographical conceptions of universal chronology and chorography ratify a radical transformation of capitalism in the second half of the twentieth century. One way or another, it advances on understanding the predominant moments of social space-time. However, we point out the need of proposing a new way of knowledge of world history and geography periodization, from the predominance of the following production forms: agrarian-commercial economy, urban-industrial economy and metropolitan-financial economy.

In official literature, it is recurrent to find prospects of a transition from agrarian-commercial economy to urban-industrial economy. However, the transition from urban-industrial economy to new moment, a metropolitan-financial economy, did not receive a more detailed treatment. There is no understanding of this term we are calling metropolitan-financial economy. According to the interpretations, it seems that we still live under the dominance of the urban-industrial economy, even if the new forms and contents of processes in development, elucidated by these same readings, point to a new spatiotemporal configuration, a new simultaneity.

The metropolitan-financial economy is a new capitalist frontier, a new moment articulated and convergent to the agrarian-commercial economy and to the urban-industrial economy. It dominates, but retains traces, processes and contradictions linked to the previous economy. Each of these economies determines means to its respective societies and mobilizes spaces and times of its historical and geographical present. Each economy only resolves itself with and in its own space.

Space is a simultaneity of social relations of production. It is not a mere land where history takes place. It is its own history in movement. As each economy requires a space and a time, illuminating specific processes of production and reproduction, we can talk about periods, eras, epochs, moments that are not thought as separate and split steps. Each time dialogues with its preceding and its posterior.

The agrarian-commercial economy determined an epoch. In fact, capitalism consolidates with trade. In this movement, the exchange of agricultural products and precious metals overseas led to the consolidation of accumulation European centers and the intense exploitation of labor in the American, African and Asian colonies. In this dynamic, cities are established

as a place of achievement of agricultural surplus, administrative and commercial centers. Marx ([1867] 1985) said that the capital begins its true saga at this time, in the sixteenth century, with profound changes in economic structures, in the emergency of capitalism.

The agrarian-commercial epoch is strongly linked to subordinated incorporation of a new continent to capitalist logic: Latin America. In the words of Quijano (2005: 9) "Latin America was both the original space and the opening time of the historical period and the world we still inhabit, the first historical entity/identity of current colonial/modern world-system and the entire period of modernity". With the same line of thought, but with a reading of the metropolitan regionalization of world space production, we propose the idea of a "primitive transatlantic metropolization, the basis of the hierarchical relationship between European metropolises and its colonies (led by Latin American cities)" (Leopoldo 2013b: 4) as the geopolitical foundation of the agrarian-commercial epoch.

Therefore, the elementary dynamics of metropolization as concentration is present since the origin of capitalism and unfolds itself in other historical and geographical moments. In the urban-industrial epoch, which begins in the eighteenth and nineteenth centuries, the metropolization as concentration progresses with continued focus on Europe, later moves to the United States. While the European and American commercial cities become increasingly industrial cities, peripheral cities continue to appear as points of sale and export of agricultural and mineral products.

Gradually the peripheral cities expand its industrialization and urbanization. In peripheral capitalism, these processes are linked to concentration politics towards the strengthening of certain regions of the national territory. The peripheral metropolises arise crowned by slums, where the wageworkers reside (without means for field production), demanded by factories in operation and installation. The concomitant process of industrialization and urbanization changes the way of life, everyday life and social relations of production, expanding the capitalist process worldwide. New technologies, means of transport and communication ferment new society-space relation based on the urban-industrial economy.

At the end of the first half of the twentieth century, the urban-industrial economy reaches its apex, with the diffusion of American ideals of consumption, technological advances and the growth of applied science. At this time on the innovation and ruins left by end of the Second World War, for the first time an integrated conception of metropolitan space emerges: the New York metropolitan region, designed by Robert Moses an interconnected mode according to Harvey (1989).

The transition from the dominance of an urban-industrial economy to a metropolitan-financial economy is limited to the period between the concrete emergence of capitalist metropolitan space in the U.S. in the middle of the last century to the politics of metropolitan deconcetration in peripheral countries in the 1970s and 1980s. A deregulation of the financial sphere and the neoliberal policies mobilize new strategies of capital through the metropolization of space.

The metropolization as politics of space sets up new resolutions in all domains of the reproduction of the social relations of production. The financial sphere becomes denser and the productive restructuring mobilizes new technologies and inputs, shaking the structures of production of value. At the same time, the mediatic information boosts forms of alienation. Thus, opening the doors for the metropolitan-financial epoch and its contradictions of space.

The space in transition: network, connection and integration

In the metropolitan-financial epoch, the metamorphoses in all spheres of life resonate with intensity in the ways of life, in space production and in human communication. Forms of space and society production modify themselves intensely. Integration, network and connection end up defining the simultaneity of social relations in contemporaneity and new concrete and abstract composition of space.

The way the subway system is organized and installed in metropolitan regions illustrates the different means in which integration, connection and network are established. In 1863, the first subway system in the world began

to operate in the metropolis of London, which was later expanded to metropolitan region and other English cities. At this time, the subway system illuminates the metropolitan space. But, concretely, as we have seen, the metropolitan space only came to light in the post-war period with the integrated conception of the New York metropolitan region, consolidating itself later as a social and productive condition beyond the urban space.

If we consider the metropolitan space from the constitution and expansion of the metropolis or mother-city, we can infer that it was present-absent somehow in other historical moments such as in the Greek urban network. However, only in the second half of the nineteenth century, that the subway system reveals the metropolitan space as real and utopian need of emergence of a new world and a new order. However, it is in the "integrated metropolitan planning" of New York that the metropolitan space, nearly a century later, acquires its more radical contours.

The international adoption and incorporation of the subway network or better "metropolitan transport network" produces some necessary conditions to the expansion of world metropolization. The network introduces a convergent reticular structure, which allows the dialogue between distant places. From the core network is established lines and nodes that articulate with all near or remote locations. The network covers an extension socially broader. Thus, it becomes possible to advance policentrality, the expanded reproduction of metropolis, i.e. the production of metropolitan space.

Thus, the network releases the urban agglomeration to reach another level: the metropolitan region. Agglomeration is transformed into network, which resolves itself in the convergence of a reunion of cities. Several integrated agglomerations produce a metropolitan network. Insofar as the metropolitan web progresses on cities, centralities, neighboring and distant spaces, expanding the network, the metropolis turns into itself and for itself17. The metropolitan web constitutes a contradictory unity of urban fabrics.

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[17] The purpose of the network concept, Castells (2000) points out theoretical formulations of the socalled "network society" and Lencioni (2006) highlights the unfolding of the networks in the transformations between what is local, regional and global. In discussing the emergence of the city-region by metropolization of space, Lencioni (2006) proposes the notions of "territorial proximity network" and "relative proximity network".

In this dynamic, the integration works in space articulation, fostering connections and adherences to metropolis and metropolitan web logic. As in the subway system, where each station integrates certain places to the metropolitan web, the integration is the combination of spaces in a serial and multifaceted mode.

The integration actualizes the necessary conjunction between spaces, centralities and cities linked to the metropolis logic and determines the production of metropolitan space. The integration actualizes both in a simple scale such as in the case of Fortaleza metropolitan region18 and in a complex scale such as in the case of the city-region of São Paulo. In the first situation, the integration is constituted as "network of centralities (Leopoldo 2013a) and in the second as "network of metropolitan regions". Thus, we can speak of complex metropolitan integration and simple metropolitan integration.

Thus, the reunion is denied and integrated meeting takes place. As a particular time determined by the transition from the urban form to the metropolitan form. Integration as unit of binder times of urban spaces to metropolitan totality indicates spatial connections. In the subway system, some integrated stations allow connections with other lines of the network. Each connection allows shortcuts, detours, meetings and ways. Possible meetings multiply with new connections in all directions of the metropolitan space, which extends itself beyond the metropolitan region established by the state. The metropolitan space is the contradictory simultaneity of social relations of production integrated in network through connections.

By integration and connection, the various latitudes and longitudes of the metropolitan space are associated in networks. The spatial and temporal links with new technologies of communication and transport worldwide, financial globalization and formation of global market fertilize a universal metropolitan network through international integration and connection of logics and processes of metropolises and metropolitan webs. In this same line of thought, Sassen (1996: 212) says that

> Economic globalization does indeed extend the economy beyond the boundaries of the nation-state. This is particularly evident in the leading

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18 Cf: Silva (1992) and Amora (1999). About the production of coastal metropolitan space of Fortaleza, see: Dantas (2009) and Leopoldo (2013a).

economic sectors. Existing systems of governance and accountability for transnational economic activities and actors leave much ungoverned when it comes to these industries. Global markets in finance and advanced services partly operate through a "regulatory" umbrella that is not state-centered but market-centered. The new geography of centrality is transnational.

Therefore, the new geography of metropolitan spaces is transnational, but also national and regional. Integration and connection to networks are performed in all geographic scales with different intensities between metropolises and its metropolitan spaces. The metropolitan-financial economy highlights new possibilities on the world stage, but also in joints and specificities with and in national and regional levels.

Understanding the relationship between what is metropolitan and what is financial in the twenty century as a sociospatial process is a great challenge. In fact, the metropolitan-financial economy is not found everywhere with the same intensity. However, if its presence did not apparently materialize, it is found as a last determination, in the virtual mode.

More and more people live in metropolitan regions, where the main economic activities in the world are concentrated. In 1990, there were 10 metropolitan regions with more than 10 million inhabitants and, today, they have nearly tripled to 28, they have grown to 453 million people (UN, 2014). These are the major financial centers that impose the new logic of capital accumulation. The movement of metropolization combines itself with the dynamics of financialization.

The metropolization of space and the financialization of economy pave a new way sedimented by integration, cleaved by network and disposed in connection. This space-time dominated by a metropolitan-financial economy keeps in its core the marks of the urban-industrial economy and the agrarian-commercial economy, becoming an intense, dispersed and fragmented simultaneity.

Rediscovery of the world and space as simultaneity: conclusions and horizons

Each epoch has a specific and dominant space-time. In the agrarian-commercial epoch an agrarian space-time prevailed; in urban-industrial epoch, an urban space-time prevailed. In turn, in the metropolitan-financial epoch the metropolitan space-time predominates.

The metropolitan-financial epoch presents a spatial simultaneity such as simultaneity in networks, which demands integration and connection. So the urban centrality disperses and gains ground beyond the territorial boundaries of the city, then emerges the policentrality. When talking boundary, thinking in terms of "network of global cities" (SASSEN 1996) or "network of global city-regions" (Scott; Agnew; Soja; Storper 2001), we can speak of a transcentrality. Therefore, the creative destruction of centralities, the intense construction of policentralities, the constitution of global metropolises in network (transcentralities) and the world expansion of metropolitan contents is the continuing challenge of metropolization of space.

The world urbanization has reached its ultimate consequences. Its adventures are still widely experienced in the human geography and history. However, we now live on the prevalence of metropolization as a determining process of the reproduction of the social relations of production. Thus, Urban Geography must seek to understand theoretical and practical senses of this new world and cooperate in the rediscovery of the present and future of metropolitan society in genesis.

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Business Condominiums and urban insecurity in Brazil

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Abstract

In the middle of the 1990s, many business condominiums started to be built in the most important cities of Brazil, especially in São Paulo State, by real estate investments. In the Brazilian context, it is a new urban form that is growing; there are more than 100 developments in São Paulo State and others in major cities like Rio de Janeiro, Curitiba or Porto Alegre. Our research in São Paulo State shows how developers use the sense of urban insecurity to legitimate and commercialize their business condominiums. The sense of urban insecurity is used to promote a sort of security environments in Brazil, not only residential and shopping centers but also business condominiums. These developments result in fortified urban enclaves, whose role is only to increase private spaces, gated communities, segregation or else the urban sprawl without urban planning, because the city is in the hands of real estate investors who use the discourse of urban insecurity to their advantage. Nonetheless, such discourse is more marketing than reality.

Key words: new urban forms; business condominiums; urban insecurity; secure environments

Introduction

Business condominiums are real estate projects aimed at offering spaces for the placement of productive activities, especially industrial units and provision of logistic services. They are linked to the real estate circuit acting in Brazil within the last 20 years, which has diversified its presence beyond residential condominiums and shopping centers, spots that are already quite traditional in this circuit.

The objective of this paper is to discuss business condominiums as new urban spaces in current expansion in Brazil and to analyze how they rely on the discourse of urban insecurity as an influencing factor in the locational decision of companies. Interview data with real estate promoters and companies settled in business condominiums will be used. The focus is the metropolitan areas in the State of Sao Paulo, in which approximately 130 undertakings of this kind were investigated. Moreover, an updated mapping (with a wider view on the entire national territory) has been developed. This allows us to state some things regarding the Brazilian context as a whole.

Characterization of business condominiums

Business condominiums are projects of real estate origin. As such, they can be considered an amplification of the agents linked to the real estate circuit's strategies, since they translate into a new offer of spaces prepared exclusively to receive economic activities. In contrast to other classic forms of industrial agglomeration, which in Brazil are promoted predominantly by the public power (for instance: industrial districts, industrial parks or local industrial arrangements), business condominiums are products of private initiative as a result of the actions of various economic agents that work together, each as a part of the real estate circuit: promoters, constructors, real estate agents and administrators. As such, its main goal is obtaining land or real estate income, revealing the intentionality embodied in the process of production of space. Aerial photographs of two important business condominiums can be seen below (Figures 1 and 2).

Figure 1- Techno Park Campinas, enclosed allotment, aerial view. Available on: <www.technopark.com.br>. Date of access: December, 2014

Figure 2- Empresarial Parque Anhanguera, modular sheds, aerial view. Available on: <www.retha.com.br> Date of access: December, 2014

In order to accomplish their goal and become saleable and differentiated spaces, business condominiums (in relation to the business condos themselves) are adapted to a psychosphere19 created based on current discourses, such as the development and innovation means, sustainability, familiarity with nature and living/working in securitized spaces.

There is a strong correlation of business condominiums with variables of the contemporary period. This can be stated because elements of the current technical system are densely incorporated to the development to operationalize the discourses and conditions announced by their investors. According to M. Santos (2004 [1996]) the historical periods differ by the developed and applied techniques, and the resulting technical systems "[…] involve forms of producing power, goods and services, ways of relating men among them, forms of information, forms of discourse and interlocution" (2004 [1996]: 115). In this regard, a series of functionalities comes from the technical objects connected to the business condominiums. These are indicative of the association between real estate promoters' actions, contemporary requirements of productive activity and, the discourses elaborated and disseminated by the marketing, creating a psychosphere of insecurity.

Many characteristics concern what is expected from the organizational and territorial conditions emerging with the productive restructuring started in the decade of 1970 (Benko, 1996). These functionalities, from the security apparatus and access control that reinforce its separateness from the neighborhood to a series of communicational objects that position the places globally, mediate the relationship between companies and the world as a potentiality.

The security apparatuses allows us to define business condominiums as enclosed spaces, comprising walls, gates, gratings, barriers, bulletproof cabins, arming of security personnel and even biometric scanning as well as surveillance tools, constituted by simple video cameras or even thermal cameras. Such functionalities have an essential importance for the

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[19] To M. Santos (2004 [1996]) psychosphere relates to the universe of ideas and the dimension in which the production of a sense takes place, providing rules to rationality or stimulating the imaginary. Psychosphere and technosphere must be understood complementarily and as the result of a society.

recognition and distinction of business condominiums, since access control and surveillance comprise one of the most popular slogans used by entrepreneurs and, as will be seen on the following topics, are attractive to companies.

An approach to urban insecurity

The discourse of urban insecurity has been used by real estate promoters for the making of enclosed spaces or "fortified urban enclaves", as they are defined by Caldeira (2000). In their approach to processes in contemporary cities – the production of enclosed residential spaces – Sposito and Góes highlight that "[…] it is about a new dimension of reality, which can no longer be disregarded" (2013: 3). In analysing business condominiums, it is the surveillance functionalities and access control that allow us to classify them as enclosed spaces. Such functionalities are one of the main concerns of real estate promoters when developing their business condominiums and commercializing them.

The offering of a sense of security from outside the building complex through these modern and sophisticated functionalities may be the best example of one of the emerging characteristics within the context of current urbanization, for which there is a trend for the production of enclosed urban enclaves (Caldeira, 2000), which can be of many kinds (most commonly residential condominiums and shopping centers, but also corporate buildings or business condominiums):

> They are physically demarcated and isolated by walls, gates, empty spaces and architectonical details […] Controlled by armed guards and security systems, which impose rules of inclusion and exclusion. They are flexible: due to their size, the new communication technologies, work organization and security systems, they are autonomous spaces, independent from the surroundings, which can be located practically anywhere (Caldeira, 2000: 258-259).

In the case of business condominiums, the installation of restaurants, hotels, stores, or gyms and other spaces of relaxation that signal rationality of a closed space independent of its surroundings can occur. That is why we can state that the real estate promoters aim to install all the equipment needed for everyday business, and workers who attend the venture.

Contradictorily, people who are outside, living nearby or commuting cannot enjoy these services. It is important to highlight these characteristics of the urbanization process triggered by business condominiums because they negatively affect the whole of social life. According to C. de Mattos: "[...]new forms of exclusion, segregation, fragmentation and slums, which have negatively affected the social life of most large urban agglomerations" (2006: 51).

In Brazil's case, we can also point to a growing appeal of the media reinforcing this urban insecurity discourse, motivating it through news and violent scenes propagated everywhere by TV, satellites and internet that allow real-time contact with viewers. Sposito and Góes warn that these devices cause "[...] fear to circulate through repetition and sensationalism, with results as inversions, from which often the particular assumes the role of rule" (2013: 175).

Fear has worked as justification for the expressive growth of such enclosed spaces, whether residential, commercial or corporate (Caldeira, 2000), or even as new urban habitats as evinced by Sposito and Góes (2013). To Pedrazzini (2006), who compares urban violence in many parts of the world, it is an unrolling of the process of globalization itself and, likewise, would be a factor with universal explanatory power in the world today. Urban insecurity has gradually assumed an important position to explain urbanization:

> This context raises, in societies with large disparities as the Brazilian one, the exaggerated valuation of new real estate products which are on the market, holders of control and surveillance systems and representative of the idea that it is possible some security in a world of imponderability (SPOSITO 2011: 140 - emphasis added).

Accordingly, we may ask what this implies in the urban fabric and the sociospatial setting. This phenomenon, whether of residential or business nature, implies the occurrence of a diffuse urbanization, a concept that has been worked in Brazil by Sposito (2005), whose characteristics include spatial fragmentation of the urban fabric causing a discontinuous urban form, followed by the phenomenon of spatial segregation, often motivated precisely by these new forms called urban habitats.

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The enclosed space as a factor of locational decision-making

One of the evidences that the enclosed space of business condominiums becomes attractive to businesses is the active emgagement of this condition as a factor in locational decision-making. To analyze their participation, we have applied questionnaires to representatives of companies settled in business condominiums that played some role in the locational selection process.

Choice factor	Scoring
Security for operating in a watched area	74
Easier access to the highway system	44
Proximity to Campinas (profile and clients)	25
Proximity to São Paulo (profile and clients)	21
Availability of ready structure	20
Search for an "innovation environment"	19
Means of communication offered by the condominium	13
Availability of human resources in the surrounding area	5
Price of favorable area	-
Proximity to Campinas (research and professional centers)	-
Proximity to São Paulo (research and professional centers)	-
Green area companionship in the condominium	-

Table 1- Techno Park Campinas – Importance of locational factor (by scoring20) 2007

Our analysis begins with a specific business condominium, Techno Park Campinas, as the main case study. We interviewed all companies of this business condominium, reaching a general framework showing the location factors considered by them (Table 1).

The security offer outstripped the other factors such as access to transport routes and proximity to workforce. We can also add, as a way to connect locational decisions to the discourse of urban insecurity, that more companies moved to Techno Park Campinas in 2005 and 2006, exactly after the peak of urban violence in Campinas in the years of 2004 and 2005,

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[20] Since on average two or three factors have been reported, it is assigned a maximum score (4) for when quality has been identified as the main point and the minimum score (1) for when the identified quality figured in up to fourth place in locational decision.

according to data from the State Secretariat of Public Security of São Paulo (2007).

In the case of Techno Park Campinas, the concern of its promoters with the operation of a gated and guarded space is emblematic. This can be evidenced by partnering with a private security company called Graber, to design the enterprise's sophisticated security system. This did not occur as a contracted service, but really as a partnership because Techno Park Campinas is one of the pioneer business condominiums in Brazil and the concern about surveillance and gating of the space was incorporated into the project from its initial conception.

During the final survey of 113 business condominiums in the State of São Paulo (Finatti, 2011) the proposed review of the location factors for companies in business condominiums was redone. The resulting Table 2 shows the cumulative score of 25 companies interviewed.

Choice factor	Scoring
Security and access control	74
Proximity to circulation axes	46
Divisão de gastos	16
Condominium infrastructures	14
Proximity to workforce	11
Innovation environment	1
Relationship with companies of the condominium	-

Table 2-. Locational factors of companies in business condominiums (by scoring21) 2011. Source: Elaborations of the author based on interviews with companies settled in business condominiums, 2011

It is noteworthy that an important pattern repeats itself: the two most important choice factors are security and access control, followed by proximity to circulation axes. Between the first two, once more security stands in first place, with the same 74 proportional points, almost twice as many as the second most important factor.

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[21] Since on average two or three factors were reported, it is assigned a maximum score (4) for when quality has been identified as the main point and the minimum score (1) for when the identified quality figured in up to fourth place in locational decision.

When opening the analysis to 113 other business condominiums, we can observe a similar pattern that appears to have become an inherent characteristic of business condos in Brazil. We can also expose some discourses of real estate developers who take their security systems as publicity, mottos of their enterprise, as shown in Table 3.

Project	Description	Source
San Jose Industrial Business Park	"This development was designed after a complex study of the needs of most small and medium businesses looking for a place to headquarters. The project has the quality of the first world, in a very prime location, with all the infrastructure ready [...] The development was fully designed so that you have broad space, greenery, lighting, cleanliness and safety."	Institutional (Apr. 2009)
Barão de Mauá Industrial Condominium	"ACIBAM Condominium has complete infrastructure, with total area of approximately 1,150,000 square meters, 750,000 m² of allotted area, including 400,000 m² of circulation and preservation [...] passage of natural gas, **24-hour surveillance with concierge and hourly rounds** [...] The companies comprising ACIBAM Condominium have their vision centered on integrated and sustainable development."	Institutional (Jul. 2011)
Techno Park Campinas	"The design of Techno Park Campinas rests on three concepts that resulted in the success of this pioneering venture [...] Strategic location - Anhangüera Highway, 104 km / **Modern integrated security system** / Environment that encourages the development associated with sharing of services."	Institutional (Jul. 2011)
Eldorado Industrial Business Center	"Eldorado Business and Industrial Center was an idea that emerged in 1999 to address the lack of supply of land for small industries and service providers in the region [...] It has all the infrastructure that a company needs and is located in a strategic area [...] **Integrated security system and 24-hour monitoring**."	Institutional (Jul. 2011)

Table 3- Discursive elements in the advertisements of business condominiums. Source: Elaborations of the author based on collection of advertisements of business condominiums, 2011

In the examples above, different approaches related to security systems of the projects fulfill the role of attracting businesses. The importance of such discourses is to show how these features are incorporated into business condominiums, given their importance in the real estate promoters' discourses and as a locational factor of effective influence.

It is necessary, finally, to highlight that state security could not be considered as a factor of asset location in business condominiums, because

companies already invest in their own security even outside of condominium spaces. However, we believe that the security systems of business condominiums are attractive because not uncommonly they are more sophisticated and complete than firms would possess in private and isolated locations.

The psychosphere of urban insecurity as a driving force

Once again using Techno Park Campinas as an example, Figure 1 below shows the delocalization sites of the companies within the urban fabric. We can clearly observe that the companies that migrated to the business condominiums were in the safest areas of the city.

However, during the surveys, these same companies stated that the main motivation for them to relocate to a business condominium had indeed been the offer of security. Out of 80 companies that were asked about the real robbery rate in their property, only one answered that was the case.

This situation means that, in fact, in the company's point of view enclosed spaces are an active factor in the locational decision-making of firms, but we can highlight that their influence results more significantly from a psycho sphere attached to what is believed to be a rise of urban insecurity than the real experience of such insecurity.
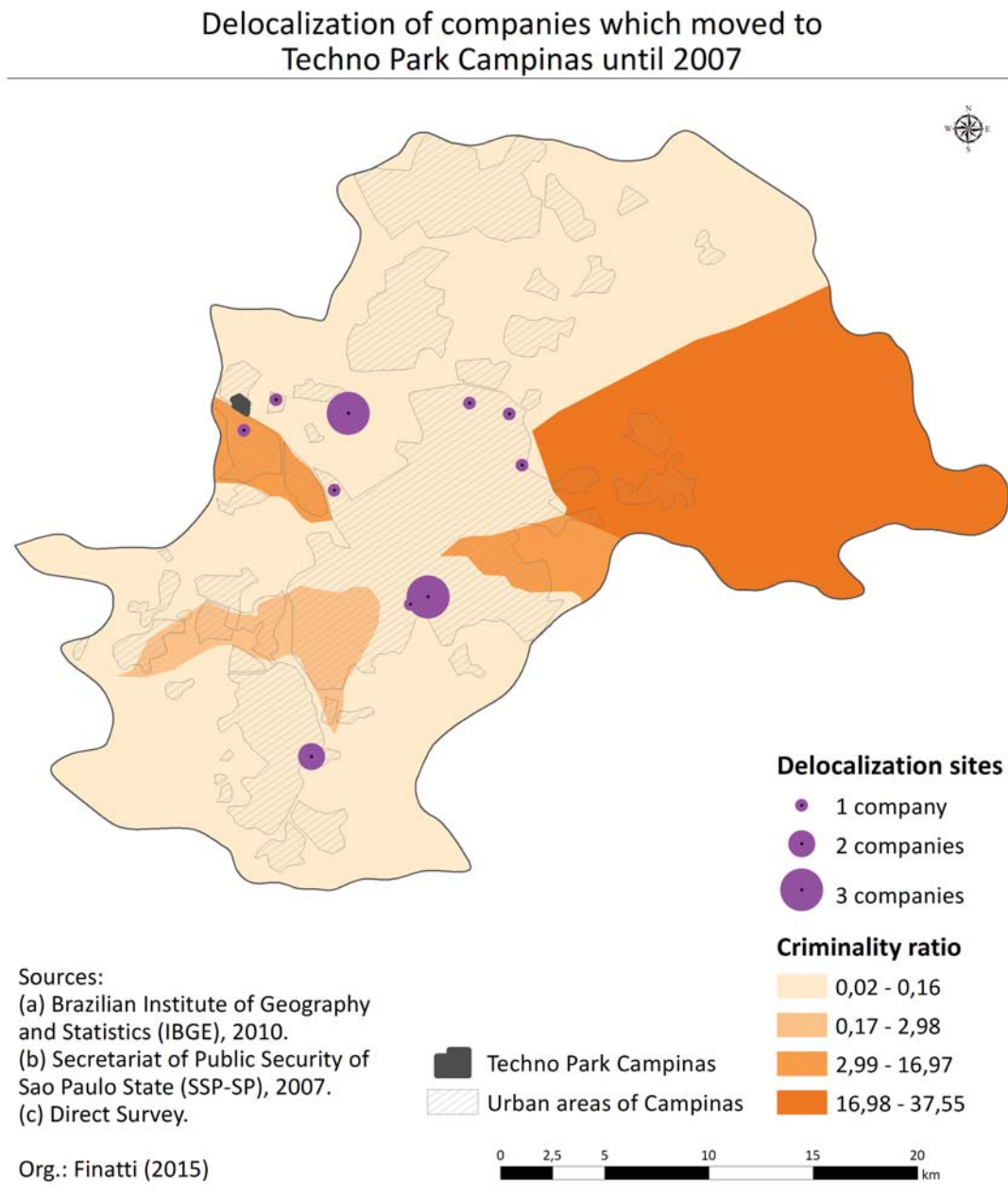
Figure 1

Obviously, we do not intend to use the map and its analysis as the final argument of this matter, since they would be insufficient. In general terms - which is shown also in the researches of Sposito and Góes (2013) on enclosed residential sites – but the fear generated by insecurity has been seriously taken into consideration even when the person or company has not experienced anything real.

Although there has been an increase of criminality (based on the

statistical rates of the Secretariat of Public Security), we can also verify that a well-elaborated discourse is able to shape locational actions and decisions. To M. Santos (2002), the "violence of information" would be one of the striking characteristics of the current period; it creates a new "enchantment of the world" in which discourse and rhetoric are the beginning and the end. Even though it has its bright side, such as allowing the knowledge of the planet and men in their intrinsic reality, the bad side is when we get totally convinced by it. The job of advertising, in charge of convincing people, becomes much more powerful and present once it has turned into something that anticipates production (Santos, 2002). This means that first the demand is produced, and only then the offer.

There is a strong relation between the world of news production and the world of production of things and norms. Advertising and media have today a relevant penetration in all activities. In the past, there was an ethical incompatibility between announcing and performing certain activities, such as in the medical or educational field. Nowadays everything is spread, and politics is largely subordinated to its rules […] Events are manipulated before being delivered to the reader, listener or spectator, and that is also why in today's world tales and myths are produced simultaneously (Santos, 2002, p.40).

The resulting psychosphere legitimates the production of new urban spaces such as business condominiums, at the same time as it impels locational redefinitions.

Conclusion

The business condominiums result in a certain specific urban form, with a distinctive spatial configuration regarding the incorporation and distribution of technical devices. In this paper, we highlighted the roles of monitoring and fragmentation of the outside space, with the aim of promoting a securitized environment.

Our analysis tried to show how the appeal to urban insecurity is linked to the actions of real estate developers, either analyzing the form itself (and its purposes) or the discourse of these developers. Moreover, we showed how

actively the psychosphere of urban insecurity participates in the relocation of companies. Insecurity, as a discourse spread by the media and used (or even stimulated) by real estate promoters, or even urban violence in fact - regardless of its intensity - are elements that, as has been highlighted by Sposito and Góes (2013) and directly verified in our research can no longer be denied within the interpretation of cities and the urban. The use of urban insecurity and the promotion of modern conditions to the productive and business activity give support for real estate promoters to amplify their work field. Currently, business condominiums are spreading to the most important state capitals of Brazil, in all regions of the country, both in total number and in territorial extension.

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Tall Buildings as Urban Objects for Sustainable Cities? A New Approach to Characterise Urbanity of High-rises

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Abstract

Building skyward is considered as a solution for European cities aiming for higher density and international visibility. This is reflected in the emergence of new high-rise forms: mixed-use towers and sometimes 'vertical cities'. However, there is a lack of research concerning the impact of these tall buildings on the urbanism of existing cities. The objective of this paper is, therefore, to fill this gap and analyse the way high-rises relate to their urban surroundings and impact the city on a larger scale. This paper presents a literature review on skyscrapers and sustainable cities which shows the necessity for towers and their related semi-public spaces to be integrated within the existing urban fabric. In the context of privatisation of public spaces and the appearance of new contemporary urbanity, we find that the main emerging issue concerning these new towers is their ability to be 'urban', which requires tools to analyse and characterise. Our aim is to propose a new approach to the issue of high-rise buildings in European cities by providing an analytical grid composed of a set of criteria that can determine the degree of urbanity of tall buildings. Our findings can help in designing, developing and planning better integrated and more urban towers, that are not only architectural but also urban objects for sustainable cities.

Key Words: Tall buildings, sustainable cities, privatisation, Europe

Introduction

Despite a controversial scientific and societal debate, building skyward is experiencing a new rise in France and in Paris. New high-rise forms are indeed appearing on the French building market; more urban and multifunctional than the pioneers of the 1970s; they are now justified as intensifying objects of the existing city. The ability of these "pieces of vertical city" to enable intensity and urbanity (urban quality) is then to examined. At first, through a historical perspective of the evolution of concepts of towers in France and around the world and through an analysis of built and planned towers within the Ile-de-France region, we show that social demand for a new form of "vertical city" exists. Expanding on the technical, social and territorial characteristics related to these particular objects, we propose a reflection on their ability to be 'urban'. These considerations highlight the issue of public-private relationships at organisational and spatial levels concerning both production and integration of such projects within the urban fabric.

Historical perspective of the evolution of high-rise concepts in France and around the world

Chronology of worldwide approaches to high-rises

Since the beginning of the urban society, the status and role of high constructions have evolved. Initially, and until the late nineteenth century, towers and high buildings were intended for the expression of political or religious power. In the early 1900s, with the first habitable towers dedicated to the tertiary sector, a turning point occurred in North America: high-rises became symbols of the economic power of some great American companies. Then, in 1950, by playing a role in the ideological confrontation between the United States and the Soviet bloc, towers reconnected with political power. These skyscrapers, symbolic objects and synonyms of economic power and innovation, also had a strong influence on interurban competition: first between New York and Chicago from 1900 to the 1929 economic crisis, and

then in the 1990s when the global "race for height" started (Peet, 2011). Since then, countries have been competing to have one of the world's highest towers as an acceptance of the capitalist ideology. Nowadays, towers represent more than ever the strength and modernity of a nation, its economic power and its acceptance of globalised lifestyles of global cities (Didelon, 2010; Firley & Gimbal, 2011).

France, like other European countries, has not taken part in this "race for height" so far (Taillandier & Namias, 2009). Most Parisian towers are residential and were built between 1965 and 1975 in response to a housing shortage (Brunet, 2010). The majority are built on artificial ground, and respond to the concept of vertical separation of functions advocated by modern urbanism. In this context of post world war economic prosperity and rise of tertiary sector, the demand for office spaces was becoming increasingly urgent in Paris and the Ile-de-France region. In response, during the 1950s, the French government proposed the construction of the Parisian business district, La Défense. This business district, also built on artificial ground, is since well-placed in the international office space market. While policy guidelines had prohibited the construction of tall buildings in Paris (since 1974), we have recently noted a comeback of planned towers within Paris. To keep up in the international interurban competition and display an image of a twenty-first century city, Paris has decided to erect a few symbolic towers within its territory. These towers are then considered as solutions to the new challenges relating to the pressure on land and densification needs. They become tools for intensifying the city according to the principle that the inclusion of a high-rise in a mono-functional or undeveloped area could create or regenerate the attractiveness and intensity of the neighbourhood (Castex & Rouyer, 2003; Pousse, 2009; Schwanke, 2003; Taillandier, 2009). According to these principles, some outlying neighbourhoods have been chosen by the City of Paris to receive high-rise development as a symbol of renewal.

A new generation of towers: more multifunctional and more urban.

When considered in the logic of "urban acupuncture", the intensifier role of towers is governed by certain conditions. Indeed, the urban intensity depends on many factors other than just the built-up density: an intense city

is a city of short distances where the links between the functions and uses, the accessibility, the time and space continuity, the proximity, the diversity, the mix of urban functions, and the quality of public spaces, are essential (Da Cunha & Kaiser, 2009). By grouping urban functions in a restricted area while ensuring space and time continuity, towers could provide an opportunity for intensifying cities. In this case mixed-use towers can be considered as a solution to "rebuild the city on the city".

Since the beginning of the 21st century, in the United States and China, a new building concept has been appearing: the Hybrid or mixed-use building. Its emergence is strongly related to the context of urban densification and a still greater scarcity of useable land. The specific feature of these hybrid buildings is the mixing of several urban functions in a single envelope at a scale that breaks with the proportions of the traditional city, while perfectly integrating into it. This scale-break is particularly true for mixed-use towers implementing the same principles of diversity and density by overlaying upright urban functions; these therefore are special cases of hybrid building (A+T Architecture Publishers & Holl, 2011; Schwanke, 2003).

Mixed-use buildings are becoming more and more developed in France; most of them are high-rises. Many new towers of the 2000s differ significantly from the pioneers of the 1960s and 1970s; they now offer more often a mix of functions throughout the building and become mixed-use towers. They also try to be more "urban" by integrating themselves into the city and its network of public spaces, and by treating their physical and visual relationships with the ground and their surroundings (Evo, 2008; Pousse, 2009; Taillandier, 2009).

The principle of urban diversity at the building scale is brought to a climax with the concept of the Vertical City or the city-in-the-sky. These terms are used today to characterise towers which are more human and more liveable and whose links to the ground and the neighbourhood are particularly elaborated. They mix urban functions which are interconnected by a network of common spaces open to the general public, from the ground up to the top, that are similar to the traditional urban fabric (Pomeroy, 2007; Yeang, 2002). To this end, the tower lives 24 hours a day and seven days a week and is highly accessible to the public; it offers common inviting spaces that interact with the ground and the public realm of the horizontal city.

These open to the public pedestrian spaces can take different forms (sky-court, atrium on the ground floor, vegetated sky garden, street-in-the-sky, open lobbies, usable in-between spaces…) and could evoke a "sense of place" and become new semi-public spaces of the dense 21st century cities (Pomeroy, 2007; Yeang, 2002). The search for an urban insertion of these streets in the sky could allow the tower to shape the life and attractiveness of the neighbourhood and may enable urbanity and intensity (Castro, 2009).

We ask, therefore, how are these new constructions, intended to intensify and be a part of the symbol of the modern city, different from the towers built previously?

Overview of high-rises within the Ile-de-France region

Definitions

There is no international or even French definition of "tower". In France, the only term recognised and used in the regulations is "immeuble de grande hauteur" (IGH) literally "high rise building" in English. It means any building exceeding the maximum height accessible to emergency fire vehicles: 50 meters for residential buildings and 28 meters for all others. Thereafter, we designate as tower any building taller than it is wide that exceeds the limit of IGH regulations and stands out from the historic Parisian canopy or from the neighbourhood of reference; that is to say having a significant impact on the skyline of the city. Likewise, there is not only one definition of mixed-use tower. We designate as mixed-use any high-rise building which vertically mixes at least two main urban functions (offices, housing, shops, hotels and services)22.

Mixed-use towers in the Ile-de-France region: analysis of functional diversity and urban integration

During the last ten years in France, an increasing number of mixed-use towers projects have been proposed. They offer programs nesting more and

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[22] From CTBUH definitions,
http://www.ctbuh.org/TallBuildings/HeightStatistics/Criteria/tabid/446/language/en-GB/Default.aspx

more functions and public or common areas in order to convince investors and citizens how attractive they can be (Taillandier, 2009). By conducting a census of the towers in Ile de France comparing the available databases23 and on the ground observations, we found that there were mixed-use towers built in the 1970s, well before the new generation of the 2000s. We counted five towers that vertically mix at least two urban functions (regardless of the proportions of distribution) in the hundred towers built in Ile-de-France.
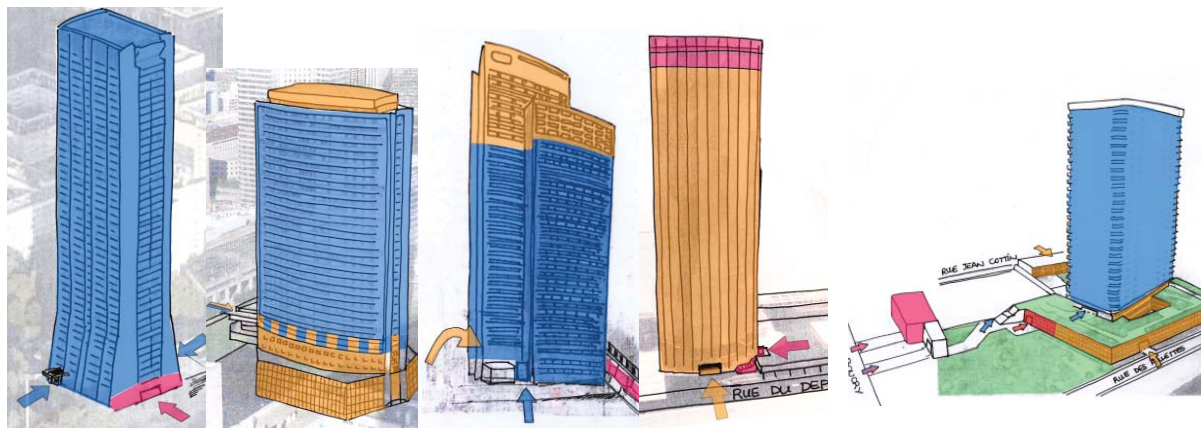
Défense 2000 - 1974	**Eve** – 1974	**Les Poissons – Ciel** - 1974	**Montparnasse -** 1973	**Boucry** - 1974
Puteaux	Courbevoie	Courbevoie	Paris	Paris
136 m	109 m	128 m	210 m	99 m
Housing + nursery school	Housing + offices	Housing + offices	Offices + panoramic restaurant + touristic panoramic floor	Housing + offices + higher education + medical center
Legend : blue = housing, orange = offices, pink = services				

Figure 1- The five mixed-use towers found within the Ile-de-France region

We analysed the identified towers using the characteristics of the intense city. We first considered the functional diversity (distribution and

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organisation of functions) and their urban integration (physical and visual continuity, public spaces).

We initially observed some homogeneity in the types of functional diversity of existing towers. We counted very few cases of "real" mixed-use high-rise overlapping several functions: rather we notice only one main function to which is added a side-line function (usually shopping or services). We however note differences between the existing mixed-use towers and the future planned towers. The new generation of towers tends to firstly be less mono-functional; of over one hundred built towers in Ile-de-France (having a height over 90m) only five are mixed-use, while today of the less than twenty high-rise projects planned, seven are mixed-use. Secondly, we find that the new mixed-use projects do not necessarily overlap functions much more than the towers of the 70s. However, where the towers of the 1970s completely separated flows and entrances of various uses, the new projects aim to combine users in indoor and outdoor common areas that are often open to the public.

Finally, other differences come to light concerning the urban integration of these towers. First, all of the mixed-use towers of the 70s are totally or partially built on large deck. Second, their entrances are not located at the street level and all break from the form of the traditional Parisian urban fabric. And third, traditionally there has been no physical or visual continuity between the street and the inside of the tower while new projects acknowledge their anchoring to the ground and look for a better integration into the existing city.

According to the number of projects of mixed-use towers within the Ile-de-France region and to the differences observed with the older generation of the 70s, we note a real social demand for new forms of mixed-use and urban towers. If their goal is to enable intensity, we then highlight the prime importance of that urban continuity, quality of public spaces and urbanity, even though these buildings are mainly produced by private stakeholders whose objectives are sometimes antagonistic to those of the public.

A comeback of high-rises within the Ile-de-France region: a renewal of public-private relationships

This public-private issue raises the problem of the actual ability of "vertical cities", and more generally mixed-use towers, to enable social ties and urbanity so essential for implementing the intense city. Indeed, many debates focus on the process of mutation or even disappearance of the urbanity, or urban quality, of contemporary cities (Banzo, 2009; Cybriwsky, 1999; Ghorra-Gobin, 2001, 2006; Pomeroy, 2007). These are directly related to discussions on the noted mutations of contemporary public spaces which are theoretically traditional places for diversity, exchange, confrontation and urbanity (Bassand, Compagnon, Joye, & Stein, 2001; Bertolini, 2006; Fleury, 2010; Foret, 2010; Garnier, 2008; Korosec-Serfaty, 1988; Mitchell, 1995; Picon, 2001). Although there is a debate on the very term 'privatisation', a phenomenon of mutation of these public spaces is widely recognised. It is materialised by a general requirement for control of people and uses, summarising both the need for safe places and attractiveness, as well as the tendency to limit the number of activities and users (privatisation of some public spaces, opening to the public of many privately owned spaces) (Dessouroux, 2003; Fleury, 2010; Gasnier, 2006; Ghorra-Gobin, 2006; Paquot, 2009). These new forms of public spaces considered as privatised by some authors are also seen as new generators of a different but existing sociability (Banzo, 2009; Cybriwsky, 1999; Korosec-Serfaty, 1988; Pomeroy, 2007). Although still widely debated, these issues of urban quality and public spaces have become a challenge for the stakeholders of contemporary cities (Germain, 2002), and high-rises are no exception.

The mixed-use tower as part of the intense city must take these considerations into account; its spaces (inside and outside), privately owned but more and more open to the public, can be considered as new forms of places of sociability of contemporary cities, provided that they ensure a certain continuity with the traditional public spaces (Cybriwsky, 1999; Pomeroy, 2007).. We decide to consider these privately-owned spaces that are open to the general public as potential places of sociability. It is therefore a question of their ability to enable urbanity and to interact with the public spaces of the horizontal city.

However essential is the implementation of urban intensity, these social considerations are unfortunately not always included in the priorities of private stakeholders of the city. In particular, high-rise construction is taking place in the context of globalisation and territorial competition that changes

the stakes for the production of the city (Baraud-Serfaty, 2008; Boisnier, 2010; Nappi-Choulet, 2009; Renard, 2008; Sassen, 2004; Theurillat, 2009). If it is seen as an urban marketing tool and a way of programming urban intensity (Castex & Rouyer, 2003; Didelon, 2010; Huriot, 2011; Paquot, 2008; Pélegrin-Grenel, 2011), high-rise construction nevertheless remains a private object developed and owned by stakeholders (sometimes de-territorialised) with short-term economic and financial profitability objectives (Didelon, 2010; Nappi-Choulet, 2009). However, its towering vertical scale and its symbolic aspect make its impact on public territory not to be underestimated, as the opportunity for development can also cause an important social and urban divide (Pousse, 2009; Schwanke, 2003; Taillandier, 2009). This particular scale, as well as the very complexity of the project, involves collaboration between public and private stakeholders, from not only the early stages to the end of the project but also afterwards. The issues of urbanity and territorial insertion, specific to the public's objectives, are added to those specific to investors, such as profitability and risk minimisation: the tower then reflects the duality between public and private interests at the intersection of the principles and practices of sustainable development and the globalised economy.

This duality, intensified for mixed-use towers or "vertical cities" seeking to be well integrated into the territory, is now also to be taken into account regarding the ability to enable urbanity. Mixed-use towers are associated with a system of specific technical, social and territorial constraints which seem to further complicate their implementation. Further, new issues on the definition of an intense urban object must be integrated into the contemporary city and extend or enable urbanity coming from:

- A lack of adequate regulatory environment,

- Strong private ownership, in addition to an expanded territorial impact,

- Complicated implementation due to functional diversity and height,

- Specific high financial and investment risks,

- An expanded political and social concern.

How can urbanity be enabled or extended in this particular system of constraints?

These findings concerning the territory, stakeholders and public spaces reveal precisely a duality between public and private sectors in both the production of the building and its spatial organisation. The issue of the ability of such objects to enable sociability and to "be urban" requires special thinking on the concept of urbanity and it's consideration at building scale. It is then necessary to consider mixed-use towers as objects of the city and think about the characteristics that can improve urban quality: characteristics of both spatial organisation and production. This new scale of urbanity is to be further considered in order to characterise the contribution of high-rises to the city and, more broadly, of large mixed-use buildings combining neighbourhood life at the building scale.

Conclusion

Following a census and an analysis of existing and proposed mixed-use towers within the Ile-de-France region, we have shown that, in the context of international interurban competition, there is a demand for a new form of high-rise buildings. This new form of towers is clearly differentiated from the pioneers of the 70s and breaks with the principles of modern urbanism from this time in order to contribute to the compact city. These high-rises are mixed-use and look for urban insertion. Assuming mixed-use towers or vertical cities as potential generators of a twenty-first century urbanity and, therefore, as a tool of the intense city, we emphasise the importance of public-private issues in terms of spatial and organisational considerations. It is necessary to first rethink the concept of urbanity at the specific building scale and secondly, to propose the characteristics which apply to high-rises in order to analyse their potential urban contribution. In the longer term, this will lead to new political and operational strategies for better integration of these objects in urban areas during the twenty-first century.

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An Investigation of the Processes of Urban Image Construction in Dublin, Ireland.

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Abstract

Contemporary cities are increasingly shaped by rapidly transforming political, social, economic, environmental and cultural processes operating on a global scale. In this dynamic environment, cities are forced to compete for a diminishing pot of available investment. Arguments presented by Tretter (2009), Scott (2006, 2008), Bagaeen (2007) and Kearns and Philo (1993) suggest that cities view attractiveness and competitive advantage as symbiotic processes in an attempt to attract potential funding. The generation and promotion of urban images has become central to the processes of place making, place marketing and branding, discussed by Kavaratzis & Ashworth (2005), Kavaratzis (2004, 2012) and Warnaby and Medway (2008, 2010). Economic competition, the quest for internationalisation, an improvement in quality of life, urban transformation and the commodification of urban landscapes, play an intrinsic part in the production of these images. This paper focuses on what and who are the key driving forces shaping the construction of urban images in Dublin, Ireland? Drawing upon a visual analysis of promotional images of Dublin and a critical discourse analysis of Planning and Development documents, it argues that a disconnected image of the city has been created through the various processes of entrepreneurial urbanism, which questions what is the overall image of Dublin that is being portrayed? The paper concludes by highlighting a number of key findings that may be of relevance to cities more broadly.

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Key words: city image, city marketing, urban transformation

Introduction

Global urban transformation in the last three decades has occurred against a backdrop of neoliberal politics promoting international competition among cities. This inter-urban competition in turn has given rise to a culture of creating globally recognisable images as a means of competing for international capital. The combined processes of urban design, planning and architecture produce these images which are presented on the global marketplace for consumption through traditional marketing and branding strategies once reserved for the business domain but now a key characteristic of entrepreneurial urbanism. Hall and Hubbard (1996) outline this business-like manner in North American cities favouring risk taking, profit motivation, inventiveness and increased competition, as examples of entrepreneurial governance in motion.

This paper examines the processes responsible for the construction of urban images in Dublin, hypothesising that a dialectical relationship between urban design and city marketing is central to the understanding of the overall transformation of a city. Drawing on empirical research, the discussion outlines how the activities occurring in Dublin exemplify wider global processes of urban image production and their connections to the urban political economic framework shaping urban transformation.

The politico-economic context of Dublin's Transformation

The Irish economic boom of the late 1980's and 1990's supported by a thriving construction industry fuelled Dublin's most recent urban transformation. David Harvey (2005 [Reprinted 2009]) in his description of Neoliberal ideology below, identifies how urban landscapes simultaneously produce and become a product of the processes occurring on them. Jones and Ward (2002) in addition to Brenner and Theodore (2002, 2005) suggest that a disjuncture exists between the ideology of Neoliberalism and the daily

practice of neoliberal policies. Collectively they consider the removal of state intervention from market practices as an empty gesture, suggesting that in practice central government still has a hand in these activities. This argument is reinforced by McGuirk and MacLaran (2001) suggesting that a strong central influence upon planning and development remains in Ireland. Dublin's transformation throughout the 1990's and early 2000's supports these arguments, highlighted by fiscal and tax incentivised urban regeneration facilitated by central government policies.

Urban Entrepreneurialism

Ward (2003b) discussed how the economic focus of the language used in urban policies from the mid-1990's forward reflects inter-urban competition. One of the most poignant elements at this time was a shift in governance from managerial to entrepreneurial, highlighting the prominence of partnerships which emerged through the privatisation of local government. It is suggested by Ward (ibid) that these coalitions represent the reorganisation of urban politics with responsibility and power residing in the numerous enterprises, a widely utilised example being Public Private Partnerships. For example the introduction of Public Private Partnerships in Dublin including the two responsible for the construction of the Bord Gáis Energy Theatre and the Convention Centre Dublin, resemble those established in London to rejuvenate the London Underground or New York's promotion of sustainable development though privatised networks and PPP's. A recurring theme across these partnerships is the aim and need to attract and secure investment. This process supports Ward's suggestion that "Cities are the economic drivers of the regional and national economy" (Ward, 2003a, p. 123), a belief reiterated by the Department of Environment, Transport and Regions in the UK in their statement that "The renaissance of British cities is essential for the continued economic competitiveness of the nation" (2003b, p. 200), thereby emphasising the importance placed on cities to attract investment. However, what once was considered innovative and new is more aptly ascribed to the homogenisation of cities as a result of globalization (Lawton and Punch, 2014). The widespread adoption of idealized visions for cities can be understood as following what is considered best practice for attaining international capital investment. However, can it be argued that

partnerships such as these are not as innovative as they seem if they are to be found in almost if not all cities which have engaged in this form of new urban politics?

Urban Image Construction

City Marketing and Urban Design are identified by this research as core tools for achieving recent urban transformation, for their ability to apply entrepreneurial strategies on the landscape while simultaneously representing cities on the global marketplace. If all cities are competing for resources then the goal of Urban Design is to produce places where quality matters (Peck, 2005). Urban Design creates spaces for people but not just a physical space rather an all-encompassing approach inclusive of the social processes which will occur there. Carmona and Tiesdell (2007) describe this as an anti-space as it is not necessarily specifically designed; more often it is an outcome of the design of surrounding spaces. The complete product that is created on the landscape manifests as one marketable representation of the patterns that exist between the people and the structures within that space. This research proposes that this image is just one interpretation of city life which has been chosen for its ability to promote characteristics of a competitive global image but questions whether this image selection is an organic evolution or purposefully chosen by key urban actors.

In an attempt to raise city profiles on a global scale one frequently engaged upon tactic is the adoption of a star architect, Los Angeles, South Korea, Bern, and Abu Dhabi are examples of cities following this approach (Bagaeen, 2007, Warnaby and Medway, 2008) . The need to acquire international acknowledgement is inferred from the core belief that the future of cities lies in the ability to attract economic investment through inter-urban competition. This in turn is achieved through the adoption of active city marketing strategies. Their origin in the corporate world reinforces the business-like manner engaged upon by cities against a neoliberal political framework. The rise of the star architect including, but not limited to, Cesar Pelli, Frank Gehry, Norman Foster, Zaha Hadid, not to mention Daniel Libeskind and Santiago Calatrava, has become increasingly popular since the rise of the Bilbao Effect, which followed the success of Frank Gehrys design for the Guggenheim in Bilbao. Warnaby and Medway

(ibid) take this idea of architect induced tourism in their article on iconic bridges and discuss the role these international names play in promoting a culturally forward city. Kong (2007) accentuates this point in her discussion on "culture-led" regeneration having a significant impact on place image, which in itself attracts people to the city in question. The combined success of well-designed urban spaces supported by high profile marketing strategies produces and promotes images of cities accessed by commercial and public sectors alike that become central to sustaining economic development.

Methodology and results

A multi-method approach combining visual analysis techniques and critical discourse frameworks is utilised in this research to investigate the driving forces shaping the construction of urban images in Dublin.

Visual Analysis

The visual nature of the two framing disciplines of this research, Geography and Urban Design is emphasised by the use of visual analysis and photo-elicitation methods. One of the intended methodological contributions of this research to existing arguments is to highlight the benefits of utilising visual methodologies in urban and social research. This research further emphasises the value of incorporating visual analysis into traditional sources of qualitative research methods as a means of accessing greater levels of understanding about how images represent experiences and interpretations of urban life. This research aims to go beyond the composition of the image to include analysis of the "context of production and publication" (Christmann, 2008, p. 1)

Kolbe's (2007) similarity of aim to the aims and objectives of this research reinforces the appropriateness of this method of analysis for this research. The focus of visual analysis initially centred on image content. Images of the city of Dublin were taken from a variety of sources, including websites such as the national tourist authority, local authority departments and international corporations in addition to open access websites such as Google Images and Getty images. Kolbe (ibid) suggests looking beyond the

language used to promote the city and instead focusing on the description and how this aligns with the image used for promotion. Working within this framework developed by Kolbe (ibid), Christmann (ibid) and Bohnsack (2008), websites and advertising images were analysed in terms of the gaze of the creator, the pose of the subjects and the experience portrayed. Images were then further analysed to uncover the meaning embedded within the image and its relationship to the overall context of the imagery. To extract this information the images were grouped, first according to the source of the images, and subsequently coded according to various themes that came out of the preliminary phase of analysis. This style of cross-analysis facilitated the comparison of images and themes across various media sources. This process also highlights if images, in terms of content, format and style, differ within or between media types.

Through the dual phase of visual analysis which was undertaken to understand and analyse the image or images which are being projected of Dublin unexpected results pertaining to the common images associated with Dublin were returned. Table 1 below highlights that the top images returned show a preference for traditional architectural styles in addition to urban spaces. Interestingly, despite the investment in high profile buildings and incorporation of world renowned architectural designs images of traditional architectural styles with a long connection to the landscape was returned with higher frequency. One justification for this suggests that buildings and subsequent images take time to settle into their environment and build familiarity with the users of the physical space they occupy. However, greater discussion around the incorporation of images into marketing Dublin will explore this topic further during the interview phase of research.

Website	Brochure	Online Photograph Database
River Liffey Bridges	Halfpenny Bridge	Halfpenny Bridge
O'Connell Street	Trinity College Dublin	Temple Bar
Dublin Skyline	Pint of Guinness	IFSC
Spire/ Monument of Light	Christ Church/ Georgian Dublin	O'Connell Bridge
City Centre Spaces	Spire/ Monument of Light	Four Courts

Table 1- Recurring Images of Dublin

The appearance of the River Liffey bridges in these results is anticipated given their ability to present a symbolic relationship to the past while 'bridging' to the present day in addition to their physical presence on the landscape. Given the widespread competition among cities actively pursuing entrepreneurial agendas and the various strategies they engage upon in doing this, it was poignant to see a preference for more traditional features of the Dublin landscape rather than images projecting some of the contemporary architectural styles and developments that are synonymous with recent urban regeneration strategies.

Critical Discourse Analysis

Critical discourse methods were utilised to establish the influences that government policy has, both directly and indirectly, on the shape and image of Dublin's urban landscape. A pilot content analysis of UK planning and design documents was undertaken to establish any outside influences upon Irish documents due to the frequency and trend for the transfer of ideas amongst key urban and policy actors (McCann, 2002, McCann and Ward, 2010). An extensive list was compiled systematically of the various local and central government urban policies shaping development in urban Dublin since the introduction of the first Urban Renewal Act in 1986. This starting point was chosen as this policy introduced the first phases of development which began reconstructing the city centre and bringing people and businesses back into the city after a period of out migration and urban decay. This form of multi-scalar in-depth analysis not only highlights whether there is a push to adopt particular urban images but where the impetus for using these images originates. If the initial foresight for image selection can be understood then a greater understanding of the outcome of these policies can be reached. The question framework for this analysis included an examination of both the content and language used in the documents to understand the purpose and meaning of the document in question. Utilising this form of analysis facilitates the determination of whether there is a political agenda toward promoting certain types of images.

Discussion: The Processes Creating Dublin's Urban Image

Dublin city centre, bound by the Grand and Royal Canals, has undergone vast transformation physically, socially and politically throughout the last forty years. During this time, the city experienced periods of economic stagnation while also booming during the Celtic Tiger era. The combination of Ireland's accession into the European Union in 1973, the 1986 Urban Renewal Act and subsequent Urban Renewal Act 1989 emphasised the potential the city held for future development. This already changing landscape was further supported by the introduction of the 1987 Finance Act offering lucrative tax incentives in a bid to attract foreign investors. These steps convey an active national attempt to propel the economy and physical structure of the city forward. Dublin is just one example in a global pattern of cities that were actively engaging in an entrepreneurial urban agenda associated with neoliberalisation and the promotion of strong inter-urban competition. A dominant representation of this type of urban regeneration was the vast waterfront redevelopment projects undertaken from Baltimore to London. Knowledge intensive industries as represented by global corporate brands, the following of which are located in Dublin's own Financial Services Centre; KPMG, Price Waterhouse Cooper, AVIVA, Citi Bank, began to replace traditional heavy industrial activities previously associated with dockland and waterfront locations. There has been extensive work published on waterfront and dockland regeneration across the globe with a very detailed insight provided by Moore (2008) on the case of Dublin. However, it is the outputs of the regeneration process which sets this research apart from the vast body of urban regeneration work as it examines the images that are created through the regeneration and transformation of the urban landscape. The Industrial Development Agency (IDA) in Ireland have acknowledged the importance of company logos and signs on the exterior of high-profile buildings as critical to illustrating the success of the city and building confidence, albeit subconsciously, in potential new investors. The landscape is thus directly incorporated as a tool in sending a message about competitiveness and global standing.

The reciprocal nature of the relationship between urban design and city marketing in delivering a neoliberal urban agenda for cities was highlighted during a critical evaluation of the literature framing this research, yet there was little discussion within this field linking the two processes together. In light of this understanding, this paper suggests that both urban design and city marketing are necessary tools for carrying out urban transformation as they embody neoliberal urban strategies that frame current political urban structures. Carmona et. al. define the role of the urban design process in creating a global profile, as the process of "making better places for people than would otherwise be produced" (2003 (Reprinted 2007)), a point which is reinforced by central government outlining a need for higher quality urban design. With the importance of design filtering down from central to local government it possible to understand how urban design has been incorporated as a tool for implementing urban change at a national to local level. During the interview phase of this research it is intended to uncover the reasoning for this prioritisation of urban design as a means of achieving successful urban spaces and who the key actors in this process are. However, it would be negligent to consider this process as an entirely positive process, rather it is spurred by policies that produce social disparity and are aligned with a concept recognised for creating social inequalities. In fact, this discussion shows that current urban design is helping to create a neoliberal landscape encouraging heightened inter-urban competition while responding to local pressures of urban entrepreneurialism (2002).

The results of the critical discourse analysis of policy documents and promotional materials produced four key themes for further investigation, one of which was urban design. A recurring point of emphasis throughout the planning documents was the role urban design plays in delivering a better quality of place for people. In an interview with a local authority representative (April, 2014) it was suggested that the aim of providing a higher quality urban environment was to attract a wider audience to the city. This statement reinforces the entrepreneurial agenda of cities as they compete in a competitive global marketplace to attract people and investment alike. The comments made in this interview further emphasise the symbiotic relationship between urban design and city marketing as the process which projects these images to the target audience. As cities compete with each other for investment and and visitors alike it is important

to circulate vibrant and positive images of what they have to offer while simultaneously creating an attachment to place for the visitors and users of these spaces as they create memories, be it daily routines or holidays, while there.

Considering the overall reach of these constructed urban images, not just the processes creating them, it is possible to understand how these images actively create a global image for the city as they interact on a global platform. Postcards were once the dominant medium through which visitors shared experiences of their travels upon their return along with personal photographs, travel books and TV programmes showed highlights of countries to audiences ready to digest these images but with today's high speed internet access and image databases people have access to a wealth of images of these locations at their fingertips without leaving their home or office. Therefore it is more important than ever for cities to be promoted to as wide an audience or audiences as possible.

Conclusion

The early results presented from the research highlights the interconnectedness of urban design and city marketing as tools of entrepreneurial urbanism and the images which are created as a result of these processes. It is the combined results of these strategies that present the global image of Dublin as it is received on the global competitive market. This paper has presented an overview of the current research and preliminary results arrived at to date. A number of questions have arisen out of the results from both the visual analysis and critical discourse analysis and it is these which will continue to guide the direction and investigation undertaken over the remainder of the research.

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Residential Segregation and the Spatial Pattern of Housing Provision in Post-Reform Chinese Cities: A Case Study of Shenzhen

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Abstract

The growth and transformation of cities in China continues to absorb migrants from both ends of the economic spectrum, giving rise to socially mixed cities. Concurrent with this transformation is the elevated level of residential segregation owing to the emergence of new forms of enclave urbanism, such as gated communities and urban villages. Factors including the historical legacy, land institution and property-led development have contributed to a divided residential pattern at the neighbourhood level. However, at larger geographical scales, the degree of segregation depends on whether the provision of different housing types is systematically segregated among urban districts. This paper unravels the spatial logic of the divided pattern of the population by analysing the distribution of both urban residents and housing provisions in Shenzhen. As expected, migrants are segregated from local citizens due to their constrained housing choice, but owing to the widespread distribution of urban villages, a rather low degree of segregation is manifest at the sub-district level. This residential pattern is salutary as it maintains a spatially equitable setting that enables deprived groups to reside within short catchment areas of jobs and amenities. Nevertheless, urban renewal programmes targeted at urban villages are

likely to jeopardize the somewhat reasonable composition and distribution of the housing market and can aggravate segregation at the large geographical scales.

Key words: segregation, migrants, urban village, low-income housing, Shenzhen

Introduction

China is an increasingly industrialized and urbanized country with an estimated 666 million people, or nearly half its population, now living in urban areas, an increase of 13% over the 2000 figure. Rapid urban expansion has been a major contributor to the loss of around 124,000 km2 of arable land (a 10% loss) between 1980 and 2008 (Peng 2011). As peri-urban agricultural areas are also usually heavily populated, many rural village settlement areas have been engulfed by this expansion, forming village-like enclaves within the new urban landscape. These so-called urban villages[24] (or chengzhongcun in Chinese) are seen as one of the main sources of residential segregation in Chinese cities (Liu and Wu 2006; Song et al. 2008).

Residential segregation refers to the spatial concentration of ethnic or socioeconomic groups, often resulting in a residential mosaic across urban spaces. Ghettos, immigrant enclaves, and gated communities are some examples of segregated urban spaces. Caused by the voluntary or involuntary separation of people (Marcuse 1997), residential segregation works against the goal of assimilation and integration of different social groups. Moreover, as resources and amenities are unevenly distributed across urban spaces, places of residence have potentially important consequences for the life-chances of residents and their progeny. High levels of segregation are believed to be an important factor that reduces societal opportunities in labour market participation and in areas including politics, education, and culture (Musterd 2005), often leading to concentrated and enduring poverty.

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[24] In western literature, the term 'urban village' often refers to the urban planning concept that aims to create communities that are environmentally friendly and self-sustainable. However, in this research, the urban village refers to the village settlements located within urban built-up areas.

Ethnic or racial segregation is the most prominent form of segregation in European and North American cities, where the concentration and isolation of ethnic minority groups has received substantial attention. The effect of such segregation is regarded as a major hurdle for obtaining social equality between ethnic majority and minority groups and the assimilation process for immigrants. In China, however, ethnic segregation is only present at the regional scale due to the distribution of ethnic minorities in the western region and a Han dominance in most coastal and central cities. The intra-urban residential pattern is mainly manifest as socioeconomic segregation (Li and Wu 2008). While housing the new wealthy class, Chinese cities have also become home to a growing number of poor households, disproportionately composed of rural migrants. The dramatic urban transition has led to a widening wealth gap within the urban population and an urban space that is increasingly divided.

Research has found that residential segregation in post-reform Chinese cities is achieved through differentiated tenure groups, which stem from pre-existing institutional privileges rather than household preference or life stages (Li and Wu 2008). As a legacy of state-led urban development and socialist housing provisions, urban poverty is associated with certain housing types (i.e., dilapidated inner-city neighbourhoods, declining workers' villages and urban villages) (Liu and Wu 2006). Especially for rural migrants who are excluded from obtaining subsidized housing, most of them can only afford low-rent apartments in places like urban villages. Such migrant enclaves segregate their residents from the more privileged local residents, the result of which can have socioeconomic consequences. It is thus hypothesized that the spatial distribution of different housing types might determine the residential pattern of different social groups, creating concentrations of privileged or under-privileged classes.

This paper examines the residential segregation of migrants and local *hukou* holders25 with an emphasis on the provision of urban village housing in Shenzhen, one of the cities where the urban transition have been most profound. Shenzhen was one of the first Special Economic Zones, where

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25 A *hukou* is a record in the system of household registration required by law in China. The *hukou* system divides people into two tiers—rural *hukou* holders who benefit from rural land distribution and urban *hukou* holders who have access to urban resources such as education, medical care and subsidised housing.

foreign manufacturers set up plants, closely followed by local manufacturing centres. The migration to Shenzhen has been astonishing: of the 14 million residents in Shenzhen, 95% were born elsewhere. This paper unravels the spatial logic of the divided pattern of the population by analysing the distribution of both urban residents and housing provisions in Shenzhen. To address the inconsistency of segregation measures due to the scale effect, multi-scale analyses are employed to obtain a more comprehensive understanding of the implications of residential segregation at different geographical and administrative levels. Dedicated local segregation indices are determined using high-resolution data of population and housing provisions, helping to suggest reasons and implications for the differentiated segregation levels and patterns.

Segregation with Chinese Characteristics

The increased spatial mobility of capital and labour gives rise to greater segmentation of the urban space based on ethnicity, occupation, income and other socioeconomic attributes. The processes of social differentiation inevitably lead to residential segregation—the uneven distribution of social groups across space. Segregation denotes socio-spatial inequalities, as groups living in different places have unequal access to resources and opportunities. It also impedes interactions of social groups and the establishment of social relations.

Residential segregation has a long historical standing in Chinese cities. In numerous dynasties, residential separation between the ruling class and the masses was maintained through physical walls and building codes (Chang 1970). Both class and ethnic segregation existed and were characterized by occupational homogeneity (such as official elite) and personal wealth heterogeneity (Belsky 2000). Even though Chinese cities in the imperial era had visible walls, their "soft edges" allowed free urban–rural interaction and suburbanization (Lin 2007). By contrast, in the post-1949 era, cities under Mao had their visible walls removed and replaced by many "invisible walls" that separated them from the rural society and controlled population mobility (Chan 1994). This rigid household registration (hukou) system of

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rural–urban segregation and differential treatment has underpinned China's social, economic and political structures ever since.

With the rural population ruled out of urban jobs, access to housing in cities was intimately tied to urban hukou status. Within cities, residential segregation was unacceptable to the socialist regime and a neighbourhood concept was introduced to arrange the city into uniformly self-contained units (danwei). In this system, where people lived and what amenities they had, depended on their workplaces rather than their socioeconomic attributes (Logan et al. 1999). With uniform apartment buildings accommodating employees from high-ranking officials to ordinary workers, the residential pattern in socialist Chinese cities has been characterized by relatively homogeneous work-unit compounds. Consequently, social spaces in the pre-reform era were mainly built upon different land uses rather than social stratification (Yeh et al. 1995).

The 1998 urban housing reform in China has significantly changed cities' residential profile and improved residents' housing consumption. The reform abandoned China's old system of linking housing distribution with employment and led to the rapid development of the housing market. Concurrent with these changes is the dramatically worsened housing inequality and residential segregation (Huang 2004). With privatization of public sector housing and the emphasis on commodity housing development, the lack of local hukou is of less significance in constraining migrants' housing choices. However, soaring housing prices entails a major concern, and housing options for migrants are extremely constrained (Li 2012). More affordable housing options are accessible for households with local urban hukou, while migrants, regardless of their income level, do not qualify for such options. As China's market economy deepens, the mechanism of market remuneration is becoming increasingly important in shaping poverty patterns, especially for groups who are excluded from state welfare, such as rural migrants and laid-off workers (He et al. 2010). With the transition of the determinant of residential segregation from institutional factors to socioeconomic factors, social groups are increasingly divided through the spatial variation of housing forms—from privileged neighbourhoods to low-income enclaves (Li and Wu 2008). Complex tenure forms characterize the housing market, where the provision of different housing choices provides a key to understanding the segregated urban population.

Measuring Multi-scale Segregation

Though there are significant social implications, the study on segregation is inherently a geographical problem (Brown and Chung 2006). It basically examines whether different phenomena are more divided or mixed in space. To measure the levels of such spatial division, segregation indices like the index of dissimilarity (ID) (Duncan and Duncan 1955) are the most effective method. First employed to measure the segregation of the white and black population in American cities, the index is defined as:

Where wi and bi are black and white population counts in spatial unit i, and W and B are the total white and black population counts of the entire region. D ranges from 0 to 1, indicating no segregation to perfect segregation, respectively.

Segregation measures like ID are highly sensitive to scales. As the index D is purely a function of the homogeneity within a spatial unit, in general, the smaller the spatial unit, the more homogeneous the population mix and thus the higher the value of D. When data are aggregated to adjacent values, they are spatially "smoothed", and thus less variation is preserved at the aggregated level. This is referred to as the so-called modifiable spatial unit problem (MAUP) (Wong 2004). To deal with the problem, multi-scale analyses were recommended to gain more comprehensive insight into the spatial segregation pattern of population (Fotheringham 1989).

To examine and relate the segregation values obtained from different scale levels, Wong (2003) proposes a methodological framework to decompose segregation values derived from the dissimilarity index at the local level to the pure local segregation and regional segregation. The decomposition accounts for the sources of segregation at different scale levels so that segregation values from different scales can be associated conceptually.

According to the decomposition framework, the regional segregation (RDj) of region Ωj is calculated using:

Meanwhile, the local segregation is introduced by the local unit level for region Ω_j. When the regional segregation is separated, the local segregation (LD_j) can be defined as:

Different from ordinary local segregation measures, the local D index measures the segregation at the local level conditioned by the regional level. When the local D is mapped, it can indicate the spatial variation of segregation contributed purely by the local units. Using both the local D and regional D allows us to explore the spatial variations of segregation at different scales and from different sources. This methodology is adopted in this study to develop a consistent depiction of segregation patterns of population and housing provisions at multiple scale levels.

Study Area and Data

Shenzhen is a young migrant city established in 1979 as an experiment of China's open-door policy. The operation of a market economy in Shenzhen has enabled its astonishing urbanization and economic growth. Shenzhen's rapid economic growth drives the equally large-area mass production of the built environment. Spatial expansion of urban land has swallowed its rural hinterland, creating 320 urban villages (Figure 1). With urban development in the surroundings, urban villages distributed throughout the city become an interwoven component of the urban economy and society (Hao et al. 2012).

Shenzhen used to comprise two distinctive administrative divisions: a Special Economic Zone (SEZ), functioning as the city centre for tertiary development; and a non-SEZ area, featured by extensive industrial development. In both regions, former collective farms were replaced with urban built-up landscapes, and their village settlements left untouched have become one of the most conspicuous by-products of Shenzhen's urban explosion. In a state of quasi-urban jurisdiction where rural collective land ownership remains, the villages enjoyed a high level of autonomy, allowing the indigenous villagers to build illegal housing for migrant tenants.
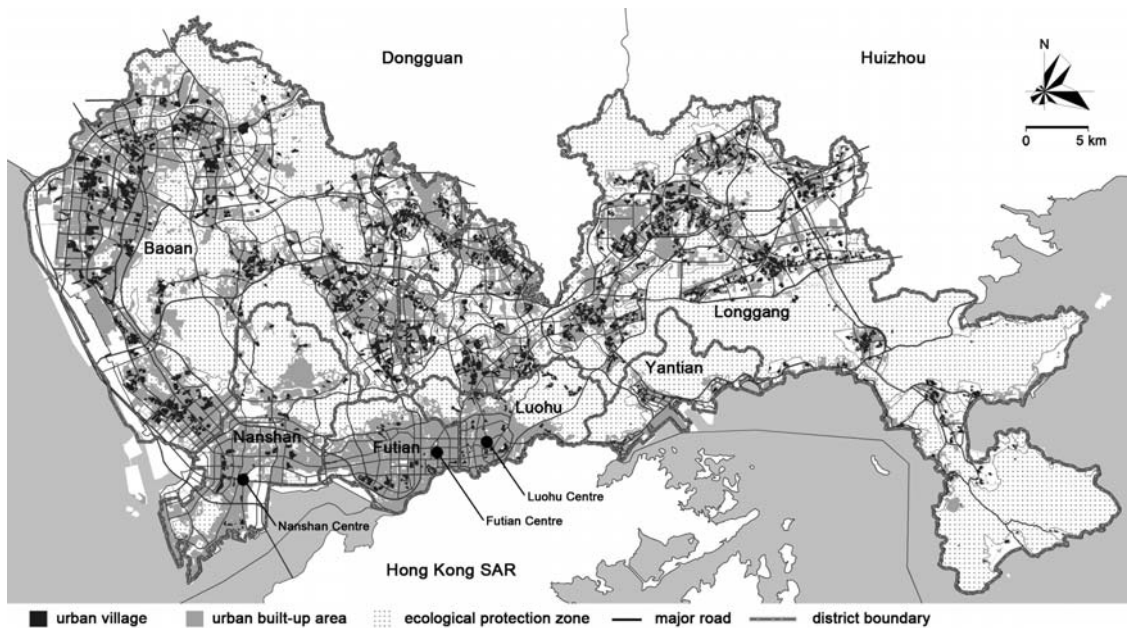
Figure 1- The distribution of urban villages in Shenzhen, 2009 (Source: Urban Planning and Land Resources Commission of Shenzhen Municipality)

In 2009, urban villages were a housing market of a total floor space of 173 million m2, equivalent to 42% of the total floor space of the entire housing sector. Urban villages are thought to accommodate over 7 million people, the vast majority of whom are rural migrants. The physical growth of urban villages during 1999–2009 was striking, contributing to an increase in floor space of 105 million m2. By contrast, the development of commodity housing yielded 58 million m2 floor space in the same period (Shenzhen Statistics Bureau 2010).

Data for this research comes from the Household Registration Database provided by the Shenzhen Public Security Bureau. The 2009 population data, including 14.8 million resident records, are believed to more accurately keep track of the presence of migrants. Data on housing types, their capacity and locations, are provided by the Shenzhen Municipal Building Database. The 2009 building data cover physical and spatial information of all 615,702 buildings in Shenzhen, including that of all urban village houses and ordinary housing estates. The following analysis primarily uses these two databases to determine various segregation measures and to compare spatial

segregation of non-hukou residents and local hukou holders, as well as of urban village housing and ordinary properties.

Segregation and Housing Provision in Shenzhen

As a migrant city, Shenzhen's 14.8 million people are composed of only 2.3 million local hukou holders (15.2%) and a majority of the 12.6 million migrants (84.8%) do not have local hukou. In all six districts, the proportions of migrants are considerably higher than the proportions of local hukou holders. It is also evident that the four central districts—Futian, Luohu, Yantian and Nanshan—have much higher percentages of local hukou holders (22-31%) than the outer districts (7-8%). This is because urban development is diverse and different groups of the residents are unevenly distributed across districts. The central districts are home to company headquarters, government organizations and high-end service sectors, all of which provide better pay and more secure jobs. In the outer districts, the prevalence of factories and lower-end services is a magnet for non-hukou migrant workers.

In Shenzhen, urban villages provide 38% of the total residential floor space, while ordinary housing provides the other 62%. Nevertheless, the urban villages house half of the total population, reflecting the substantial contribution of urban village housing to the city. Across the six districts of Shenzhen, neither the urban village housing nor the ordinary housing is evenly distributed. Urban village housing is mostly distributed in Baoan and Longgang, where this particular housing market supplies almost half of the total housing space. The four central districts still maintain a large stock of urban village housing, with percentages in total residential floor space that range from 16% to 21%. In the central districts, the smaller number of urban villages and the smaller size of each village determine a lower share in the total housing provision than their counterparts in the outer districts; however, the building and population densities of those centrally located urban villages are the highest in Shenzhen (Hao et al. 2013a).

The uneven distribution of population and housing across space at three levels—district, sub-district and residents' committee26—is captured by the

ID (Table 1). Residential segregation at larger scales is low, because while the uneven distribution of urban population is significant at smaller scales, when the data are aggregated to adjacent values, less variation is preserved at the aggregate level. However, even at the level of the district, segregation between migrants and local hukou holders is considerably high, which is largely due to the over-representation of local hukou holders in the central districts and the over-representation of migrants in the outer districts. There is relatively little variation between the inner districts or the outer districts. This pattern is a direct result of the functional difference between the city's SEZ and non-SEZ areas.

	Migrants vs. *hukou* holders	Village vs. ordinary housing
ID_district (6 units)	0.379	0.282
ID_sub-district (56 units)	0.418	0.315
ID_residents' committee (633 units)	0.593	0.538

Table 1- Segregation of migrants and housing types at different levels

As urban development is diverse and migrants with different socioeconomic status are unevenly distributed, the social structures of urban village residents also vary across districts. The socioeconomic status of the residents of an urban village may be linked to the types of jobs available in the respective district. For instance, in the SEZ, significant proportions of urban village tenants are office and tertiary sector employees. Outside the SEZ, the majority of urban village tenants are industrial workers and employees in small and/or informal businesses. Because the population composition of migrants and local hukou holders is much more unbalanced than the housing type composition of urban villages and ordinary housing, the ID for population is significantly higher than the ID for housing provision.

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[26] A residents' committee is an urban residential area and its residents administrated by a sub-district. In Shenzhen, the population of a residents' committee ranges from 682 to 286140, with an average number of 23432. As of 2004, all urban villages in Shenzhen were administratively converted to residents' committees.

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At the level of the sub-district, the ID between migrants and local hukou holders is 0.418; and ID for segregation between village housing and other housing increases to 0.315. Judging from the small changes from the value at the district level, the segregation at the sub-district level is mostly contributed by segregation at the district level and especially by the difference between the SEZ and outer districts. At the sub-district level, since urban villages are distributed across almost all units, the added degree of segregation is limited.

At the level of the residents' committee, the levels of segregation are extremely high for both population and housing provisions. While a residents' committee has an average population of about 23,432, the ID indicating segregation between migrants and local hukou holders is almost 0.6. To put it into perspective, in Shanghai, a residents' committee has an average population of only 3,000, and the ID between migrants and local hukou holder is still lower than 0.3 (Li and Wu 2008). In accordance with the residential segregation, it is evident that urban village housing and ordinary housing are also highly segregated indicated by a very high ID of 0.538.

At the level of the district, Baoan has the highest level of RD between migrants and local hukou holders, while the RD of Futian is moderately high due to the under-representation of migrants (Figure 2a). In terms of housing provision, both Baoan and Longgang have the highest RD because of the higher proportion of urban village housing (Figure 2b). The moderately high RD of Futian is a result of the under-representation of urban village housing in the city's central business district.
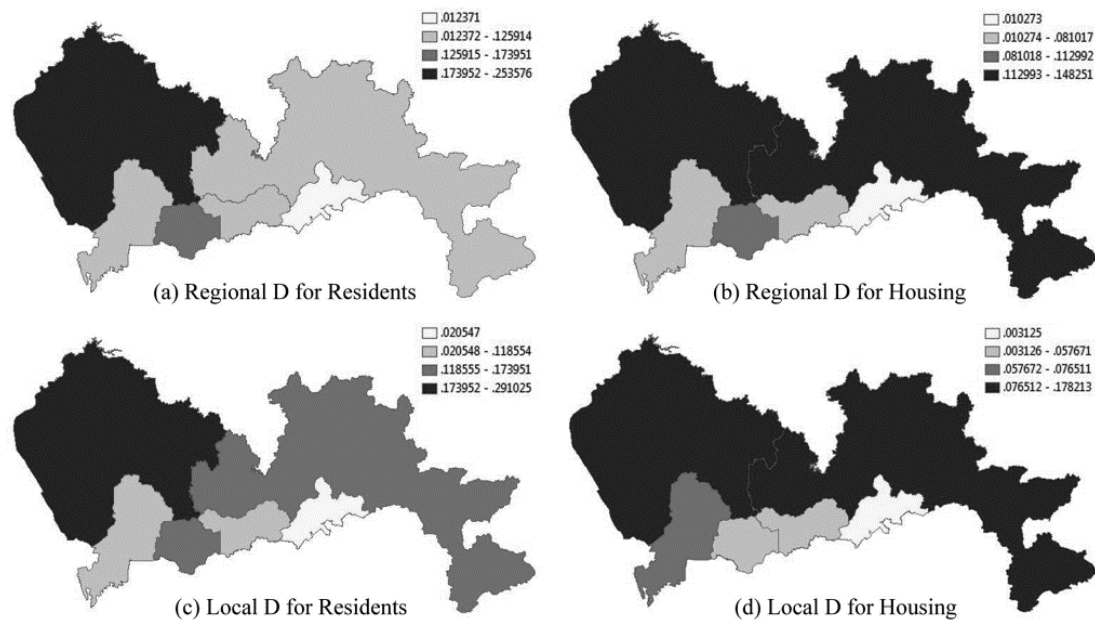
Figure 2. Decomposed segregation measures at district level

The maps of LD (Figures 2c and 2d) illustrate intra-district segregation of population and housing provision, regardless of the segregation across districts. For population data, the highest LD for Baoan indicates that the level of segregation between migrants and local hukou holders is the highest in Baoan, followed by Longgang and Futian. Baoan has the most segregated districts at both regional and local levels. While Baoan has the highest concentration of migrants, certain sub-districts in Baoan have become the most segregated migrant enclaves. Although migrant population in Futian is under-represented, the relatively high local D indicates that the small proportion of migrants in Futian is highly segregated at the sub-district level. Luohu and Nanshan have relatively low levels of local segregation. In Yantian, the level of segregation of migrants and local hukou holders is the lowest.

LD for housing provision identifies that Baoan and Longgang have the highest level of local segregation between urban village housing and ordinary housing. Some sub-districts are concentrated with more urban village housing than other sub-districts. When urban village housing is more scattered in distribution, the local segregation becomes comparatively less prominent. The outer districts are the most segregated at both regional and

local levels, representing urban villages in certain sub-districts in Baoan and Longgang are the most segregated residential areas in Shenzhen.

At the level of the sub-district, Figure 3 shows regional and local Ds for population and housing provisions respectively. For both population and housing, RDs identify the highest valued sub-districts in both the centre and peripheries of the city. However, similar to what was explained for the district level RDs, a high RD in the city centre is actually a result of under-representation of migrants and urban village housing. High RD in the outer districts (Figures 3a and 3b), which is due to the concentration of migrants or urban village housing in certain sub-districts, explains the high local Ds at the district level shown in Figures 2c and 2d.
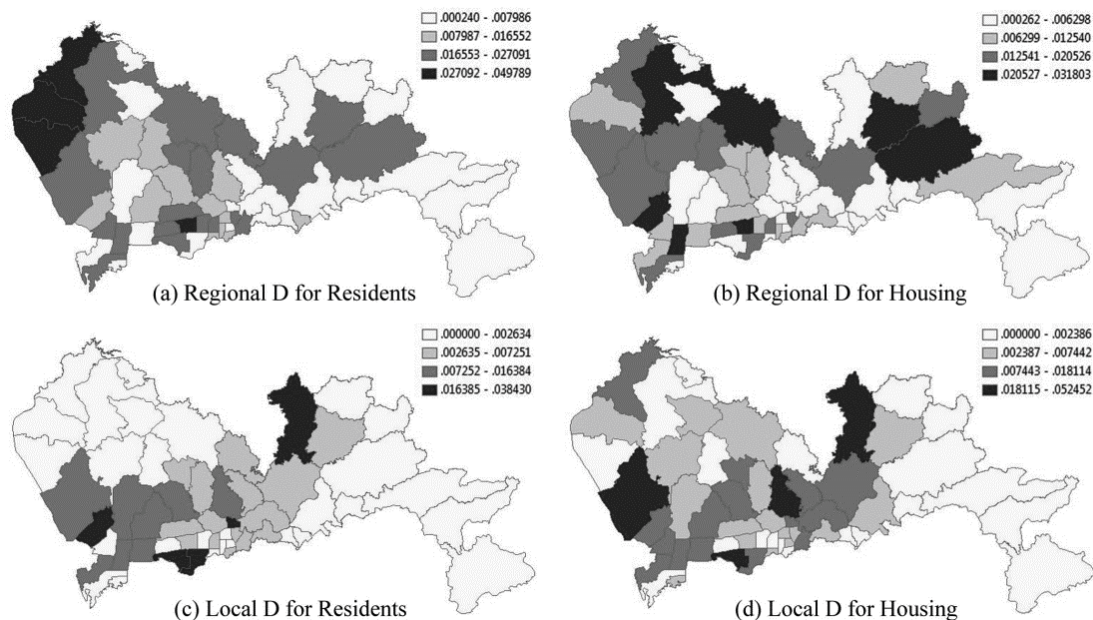

Figure 3. Decomposed segregation measures at sub-district level

From Figures 3c and 3d, the segregation identified by LD shows a completely different pattern. The comparison between Figures 3a and 3c indicates that units with the highest regional D exhibit a low local D. This reflects that when different spatial scales are under scrutiny, the degree of segregation may significantly vary between scales. Certain sub-districts accommodate a larger proportion of migrants and thus exhibit higher segregation at the regional level, but the migrants living in the sub-district

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are relatively more evenly distributed within the sub-districts, showing low segregation at the local level. Moreover, in a migrant city like Shenzhen, migrants also include many people who are highly educated and well paid in employment. They do not possess a Shenzhen hukou because of institutional constraints or the preference of keeping their hukou affiliated with another place.

The measure of regional and local D indices illustrates how the segregation of migrants and local hukou holders is created at each geographical and administrative scale. While the segregation at the district level is already significant due to the concentration of local hukou holders in the SEZ, the segregation at the sub-district and residents' committee levels adds an additional dimension to the problem. At the sub-district level, the outer districts manifest high degrees of residential segregation because of the differentiated development of local economies. But at the residents' committee level, the outer districts generally have low residential segregation because of a highly even distribution across these small administrative units. By contrast, due to the demolition of numerous urban villages in the city centre, the central districts suffer greater residential segregation at the small scale. Urban villages that still remain in the centre become pockets of the most segregated enclaves.

Conclusions

This analysis discovered that residential segregation in Shenzhen is formed in a structure of systematic division at three administrative levels: the separation of population between the SEZ and the non-SEZ due to their distinct modes of development; the separation of population among sub-districts due to specific local economies and associated employment opportunities; and the separation of population among residents' committees due to the availability of housing types. Migrant labourers were absorbed into the city. However, being seen as merely a means of production, migrants are confined to the city's labour-intensive hemisphere. Ironically, rural migrants are "walled" in certain districts that were only recently expropriated from rural communities and in urban villages that are still under de facto rural jurisdiction.

Given the socioeconomic status of migrants, the presence of urban villages has decisively shaped the segregation pattern in Shenzhen. As constellations of cheap rental neighbourhoods, urban villages play a dual role: At the neighbourhood level, such spaces are undoubtedly a form of segregation rather than a locus for genuine integration; but at higher geographical and administrative levels, they allow the penetration of migrants into the city's capital-intensive hemisphere and enable a relatively even distribution of migrants across urban sections. Assimilating migrants into prime urban locations enables them to have a closer proximity to employment and amenities, and thus better situates them to seek life chances (Hao et al. 2013b).

The implementation of village demolition and redevelopment may reduce the degree of segregation at the neighbourhood level. However, residential segregation will inevitably be exacerbated at the district level, which is likely to deprive the migrants of the opportunities in the city in terms of labour market participation and access to public amenities. Research has shown that rapid residential and job decentralization are found for low-income earners and the residential distribution of high-income households has a trend toward centralization. All the evidence shows an alarming sign that the lowest strata of the society are being driven out of central districts of cities or even the cities as a whole. The invisible hand of the market has been deepening segregation at greater geographical scales and establishing an invisible wall around the core of China's big cities. To investigate the process more closely, future research should examine the changing patterns of population distribution due to the redevelopment of urban villages and other types of low-income neighbourhoods. Moreover, it would be useful to explore to what extent migrant's access to employment opportunities and urban resources are influenced by displacement and relocation as a result of large-scale urban renewal projects.

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