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URBAN PLANNING, INDUSTRIAL ACTIVITY AND THE CITY

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1. Introduction

Society is run by different systems working at different levels. They sometimes cross path, while at other times they travel in parallel. This varies in time and location. The objective of this paper is to analyze the relationship between two different systems: the "system of urban areas" and the "economic activity system". The relationship between them is defined by a set of rules contained in urban planning; otherwise, it is defined by the lack of urban planning and, consequently, by the absence of these rules.

Different levels of government institutions can also decide the way in which activities are located in a region, in a metropolitan area, or in a given city, through the existence or nonexistence of urban planning. The second objective of this paper is to answer the question regarding the need for establishing a set of rules for the development an urban area. Although there are multiple positions to be taken up this question, the two that follow could be considered as opposite ends of a continuous line:

1. The market should rule without government restrictions. Furthermore, local governments should encourage private planning ("Thatcherism position" in the 1980s, U. K.);
2. The role of urban planning must be increased. Planning should return to improving the physical environment. Due to environmental problems and the need to formulate a new paradigm of city development under sustainable theories, urban planning must return to center stage ("Post-Thatcherism", in the 1990s, U. K.) (Ingram and Hopkinson 1994).

As a final point of this introduction, the third objective of this paper is to underline and list the main features of industry and urban planning in the 1990s. The purpose of this document is to use it as a "table of contents" for discussing the A.G.E. ¹ Seminar on "La industria en la planificación urbana", to be held in Girona (Spain), the 22nd. and 23rd. of September 1994.

2. Urban Planning and Economic Activity

To begin with, urban planning refers to the task of making plans for an urban area². Intrinsically linked to urban planning, the concept of zoning constitutes making divisions of areas that are distinguishable from adjacent areas through some distinctive character feature.

In a way, one can speak of the city as the container, and economic activity as contents, to be arranged so that residential activity and economic activity have some kind of relationship. One may say that normative urban planning defines the relationships of the elements within an urban system³, for the present as well as the future. It may be observed that urban systems change as a consequence of changes in the production system, as illustrated by the pre-industrial and post-industrial-futuristic cities in Figures 1 and 2, in appendixes A and B. Consequently, modern zoning is used in urban planning to clarify the relationships among different territorial uses.

In the 1980s and 1990s, production systems have changed from mass production to flexible production systems. In general, these changes are gradual -which does not mean slow-, with no break between production systems (Gillespie 1991; Pallares-Barbera 1993). Otherwise, the dynamics of these changes in economic activity incorporate elements of both systems, as well as new achievements and inventions. Consequently, relevant elements that have been incorporated -or should be incorporated- in the discussion of urban and production systems play an important role in the changing focus of urban planning:

- 2.1. The inclusion of environmental⁴ and ecological⁵ theories (Hall 1986) as a result of the

progressive popular consciousness regarding environment conservation, sometimes called the "ecological revolution";

2.2. The speed of high technology renewal in production systems, in addition to innovations in information technology, has propitiated spatial changes in the form of decentralization of economic activity (the "technological revolution"; also called the "four industrial revolution"). Most authors agree that this result is already very obvious⁶ in developed countries, while others claim that it is difficult to observe a clear tendency of decentralization, at least in some activities. If the tendency toward decentralization were clear, it could be a solution for saturated urban areas showing scale dis-economies in some activities (Hall 1986);

2.3. The incremental rate of the "service economy" as a percentage of total production and total employment (the "services revolution"); in addition, another important element must be taken into account, which is the tertiarization and flexibility of manufacturing firms, incorporating high-tech innovations at each level of production; which change the labor structure and practices:

- a. the logistics of labor know-how into the production system -for instance, working-in-group practices-,
- b. the labor skills required, and
- c. the firm's management.

Flexibility of firms is used here in the sense that the different parts of the production are done by diverse firms (through contracting and sub-contracting relationships (Solé i Valls 1991)); i. e., the value-added output is incorporated by different independent firms, which form the nodes of the economic network.

Of course, the increasing trend of the service economy⁸ has affected urban space and city dwellers, in the form of:

- a. increased daily commuting,
- b. metropolitan expansion: expanding the areas devoted to residential suburbs close to the urban center,
- c. increase in the demand for public transportation,
- d. increase in the amount of private vehicles in the city and, consequently,
- e. larger traffic congestion problems in the urban-metropolitan areas.

Thus, the city is subject to two urban phenomena, although their degree of influence remains controversial, which are: a) neighborhood "gentrification"; and b) "urban filter" of the populace. Gentrification refers to a process initiated with the renovation of old, poor residential areas in the city center; which are occupied during period t_1 by a low-income population. In period t_2 , this group moves, and a high-income population settles into this newly renovated neighborhood. Gentrification areas are generally located close to city centers (in Europe), and to the CBD⁹ in the U. S., and they are well located with respect to urban jobs. Linked to gentrification is the urban filter process, which refers to the increasing demand of "white collar" jobs in the city, resulting in a higher demand for good residential areas in the city, with the consequential increase in the price of land, which send lower-income population groups outside the city. An assumption that is intrinsic to this theory is that white collar jobs are better paid than non-white-collar jobs, which is not always true. For instance, jobs in commercial services in general do not pay as well as those in manufacturing;

2.4. Sustainable development and the city. Related to 2.1, if the general belief is that industrial activities are a "must" for generating the economic base of the city, industry, city and urban planning have to be linked together under some general philosophical and structural belief. Moreover, the ecological revolution establishes the relationship between "economic space" and sustainable development of this space. Economic space is understood to be those relational spaces considered at different levels:

- a. social interactions,

- b. interpersonal synergies, and
- c. social actions

These levels determine the capacity for innovation and the economic success of specific local areas. Camagni (1991) defines this as "innovative milieu".

Sustainability and economic development relations are currently held under a theoretical and multidisciplinary debate¹⁰, in which there is a friction between what should be the level of use of natural resources and the level of economic production. This debate is still going on, and there is no agreement. Surprisingly, one should take notice, of the wide use of the word "sustainability" by politicians and intellectuals. This, however, does not rest importance from the academic debate. Otherwise, it is evident that many such concise and precise contributions to help global debate on sustainable development by different disciplines would help to clarify the topic under discussion.

The lack of accuracy in sustainable processes and definitions is due to imperfect knowledge of the current and future economic developments of society, of the technological influence at all levels of society and of future generations' needs (Page 1977), as well as to the uncertainty of natural resource conservation petitions in the immediate future as a result of a higher degree of society's ecological education and consciousness.

2.5. The location of clean industry in the city. Related to 2.4.

3. Role of Local Government in Urban Planning and Industrial Activity

As was said before, city and industrial activity have been always linked together. Nowadays, the higher value-added generating activities in the city are due to service activities (Ajuntament de Barcelona 1994). In the 1990s, fragmentation of the manufacturing processes, in which service activities required by manufacturing that were once performed inside factory walls as a part of the whole activity to be done now by another firm, or firms. Most of the time, these firms are located within the city. These phenomena increase the tendency towards a service economy dominating the urban arena. Even so, local governors still believe that the industrial sector is the skeleton and engine of the city's economic activity: "La indústria continua sent el nucli vertebrador de l'economia de l'àrea de Barcelona". Ajuntament de Barcelona: La indústria a Barcelona. Barcelona i tu. La Barcelona industrial a debat. 1994.

This is why local government is interested in finding solutions for the allocation of manufacturing activity in the city, and to take as leadership in articulating the economic activity of the city and its metropolitan area. There is a tendency in manufacturing that is located in large plants to move to the outskirts of the city, and to reduce the factory in order to increase efficiency, as dictated by new production system guidelines. As a consequence of this factory movement, there is sometimes a large quantity of urban land prepared for new zoning. It is at this point where local urban planning tries to find suitable solutions. Should this land be devoted to economic or residential activities?. If to economic activities, should they be manufacturing or service activities?. If manufacturing, what type of manufacturing?

Of course, the city as an urban agglomeration most often includes just the city and its metropolitan area. Together, this must be thought of as a system where all the elements - economic activity, population, and transportation- have different interrelationships. This means that any change in one of the elements of the system affects the others. Thus, concepts of productivity, environmental pollution, logistics, public services, traffic and commuting should also be taken into account in promoting a city's activity and in increasing the quality of urban life.

Consequently, manufacturing activities in the city should have at least the following characteristics or requirements:

- Smaller factories with no or fewer negative externalities ("clean industry"),
- Activities using low volume inputs, producing low volume outputs (to decrease traffic congestion),

- High value-added manufacturing (capable of incurring and assuming higher cost produced by agglomeration) (Ajuntament de Barcelona, 1994),
- Production plants that must be closer to immediate demand (in which the locational rent is very important),
- Assemblers of the last stage of a product going to final demand, complying as well with the other restrictions.

In addition, there should be a clear statement in the industrial policy of a city regarding diversification or concentration of the economic base, or at the least, there should be an ongoing study of what is more suitable for each period in a given city. There is no common acceptance of which one gives the best results for a city's economic development (Mas-Colell 1993; Krugman 1991; Porter 1990; Guinjoan and Cots 1988). Sectorial diversification in the economic base of the city is important when an economic downturn affects a sector -because of maturity of the sector or external elements producing crisis. Sectorial concentration is important to the city for the increasing returns to scale and scope economies generated in a territory, and for positive externalities coming out from activity cluster. So, should be two parallel scenarios in the economic-territorial sense in order for a city to be a successful "factory", and to keep an increasing economic trend subject to the changeability of the city's competitive advantages over time and against global competitors:

First. The sectorial concentration of the economic base of a city by groups of economic activities that are related in an economic network. The characteristics of such activities would be: a) high dynamic activities; b) R&D, included in their production chain; c) capability for introducing higher flexibility in their production systems, and capability for diversifying their product to other sectors.

Second. The sectorial diversification of the economic base of a city including the city's older remaining activities, with sectors in different stages of their life-cycle in which some of them would be in the first stage of their life cycle while others would be in their maturity.

The above exposition leads us to the conclusion that urban planning must take these two groups into consideration when zoning. In addition, the city should be capable of offering a good industrial atmosphere (Marshall 1923), which is in part possible because of good urban planning. The elements are the following:

- a) the existence of related and supportive services and industries strengthening the economic network;
- b) good infrastructure network -usually provided by the government, or with government support (Porter 1990);
- c) enhancement of synergies created by the city as clusters of diverse elements (creation and diffusion of knowledge, concentration of universities and businesses);
- d) mixed usage: "Hotels d'activitat";
- e) ability to facilitate the vertical and horizontal transferal of technology;
- f) management of industrial land;
- g) offer of good quality industrial land;
- h) encouragement of ID characteristics of cooperation and coordination, which diminish transaction and information cost; thereby enhancing the comparative advantages of the city.

4 Concluding Remarks and Further Research

The above leads to the answer to the primary objective of this paper: whether or not urban planning is necessary in post-industrial cities. Furthermore, this paper goes beyond answering this question, in that it establishes and gives recommendations to institutions involved in urban planning matters for development of the new industrial city.

It is not the intention of this paper to offer the last word on these matters. Rather, the purpose of this paper is to bring up questions in this topic, by setting up an exhaustive list of concepts and topics related to urban planning and industry and the relationship between them.

It is very difficult to offer a definitive conclusion, given the amount of elements entering in the analysis. But, above all, the direction of the research on this topic is still open and should ask the following questions:

- Is sustainability the right conceptual mark in discussing how economic activities should be developed in the city?
- If this is so, how should sustainable development be defined in the urban structure, in relation to its economic activity?
- If the sustainable development conceptual mark is accepted for developing economic activity in the city, then the pre-defined concept of urban planning should change, or at least new meanings should be added. Should it then be called the city and sustainable urban planning, and be prepared to stand by that compromise?

NOTES

1. Asociación de Geógrafos Españoles.
2. When the concept "urban" refers to a territory which constitutes a city. Urbs, city.
3. A geographical system is "a set of elements together with relations between the elements and among their states" (Hall and Fagan 1956). Thus, it has three basic ingredients elements, states, and relations between elements or states (Huggett 1980).
4. In geography, theories which are based on the combination of external and intrinsic conditions that affect the growth and development of a territory.
5. Theories that deal with the science of the relationships between organisms and their environment.
6. Gillespie (1991).
7. We understand tertiary as those economic activities related to services; taken from the classic division used in European academics in which: a) primary activities refer to the ones related to agricultural activities; b) those referring to industrial activities; and c) already defined.
8. Some authors link this trend to that of transition in the city from the mass production system to the flexible production systems (Ferrer 1990). That is, they refer to an urban planning characteristic of Fordism, or Post-Fordism.
9. Central Business District.
10. Definitions and discussions of the concept of "sustainability" may be found in the following works: Pearce et al 1989, 1991; Rees 1990; Common and Perrings 1992; Holling 1973, 1986; Constanza and Daly 1992. This is not an exhaustive list of references.

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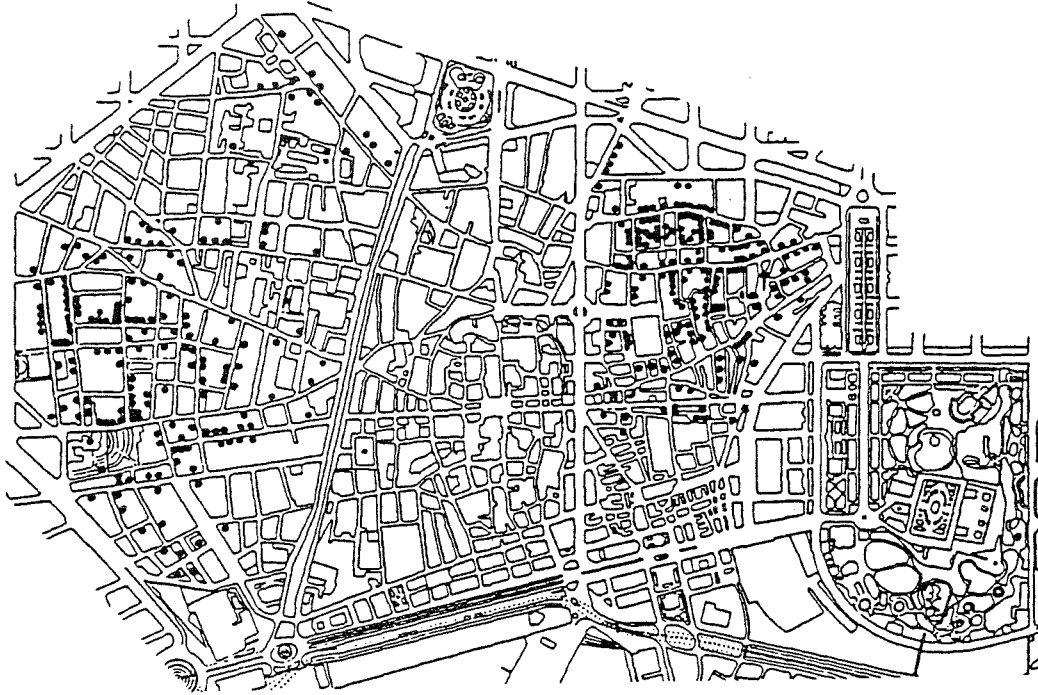
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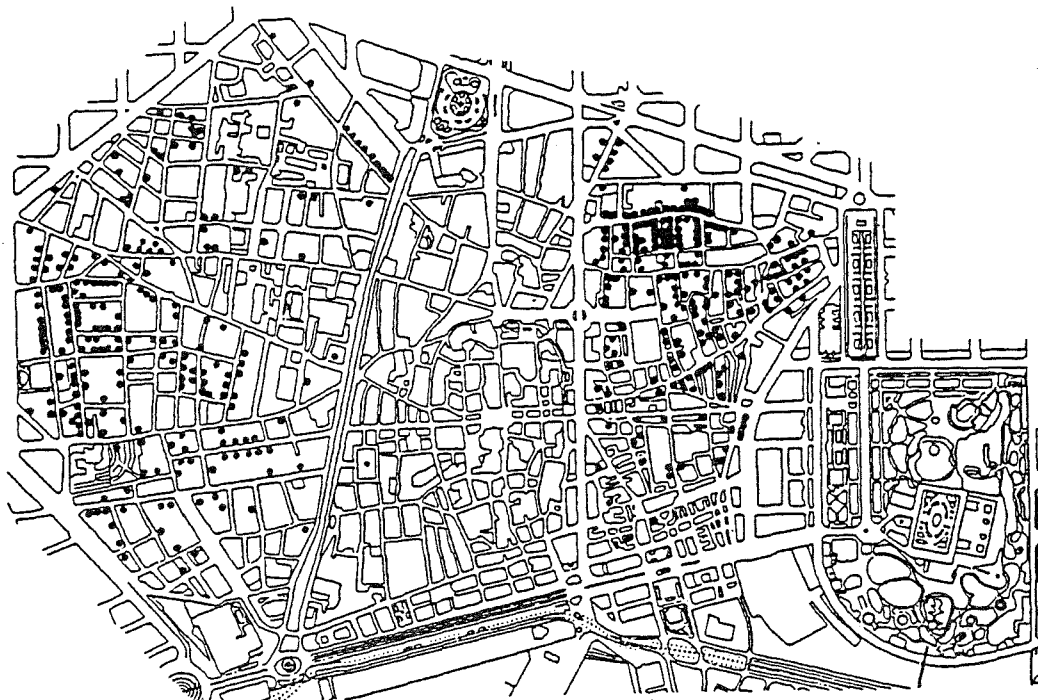
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FIGURE 1. Urban system in a pre-industrial city



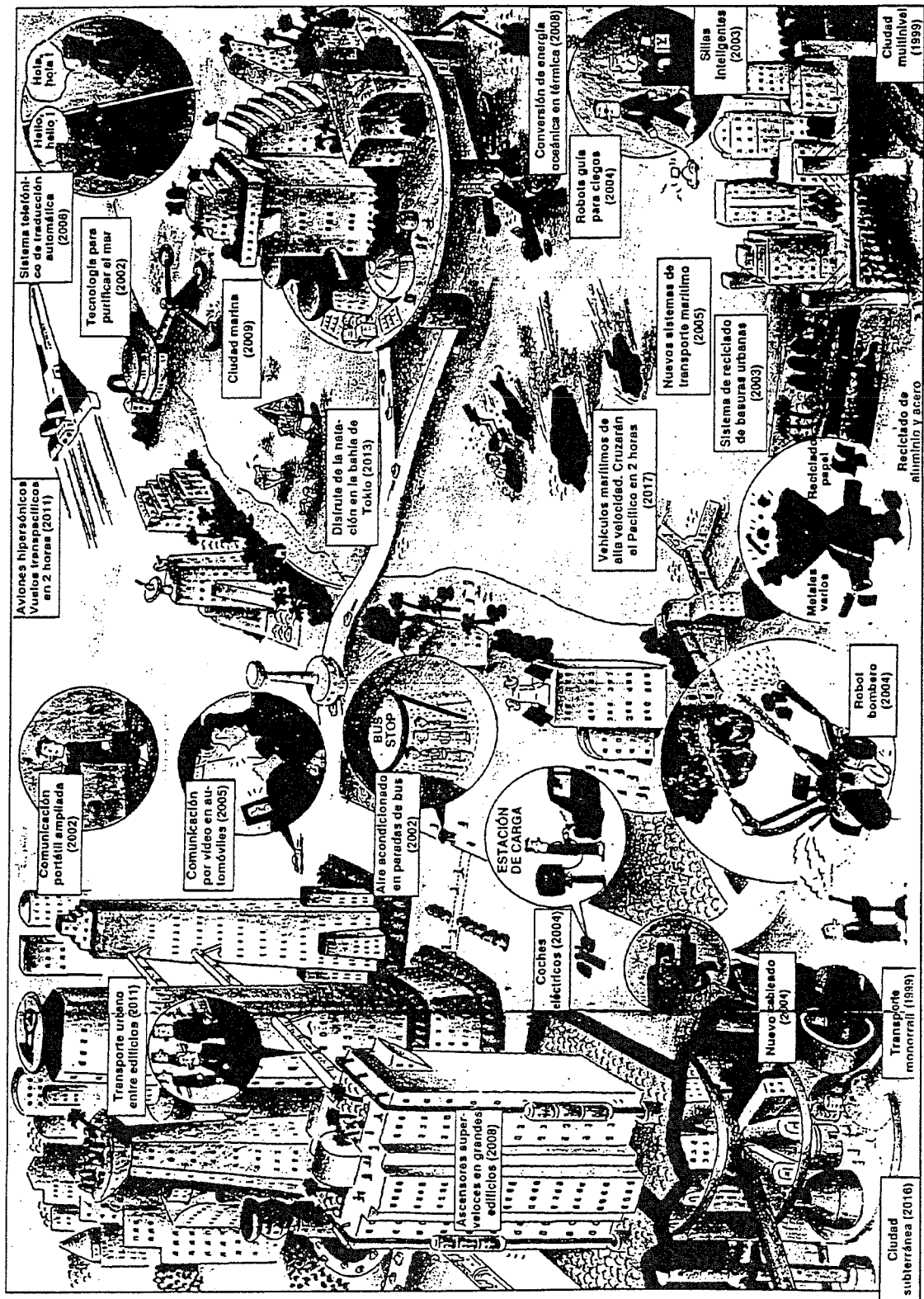
Localització d'indústries tèxtils. 1846



Localització d'indústries tèxtils. 1856

Source: Caballé and Nicolau 1993.

FIGURE 2. Urban system in a post-industrial-futuristic city



Source: Rego, 1994