

Urban Growth on Two Continents in the 19th and 20th Centuries

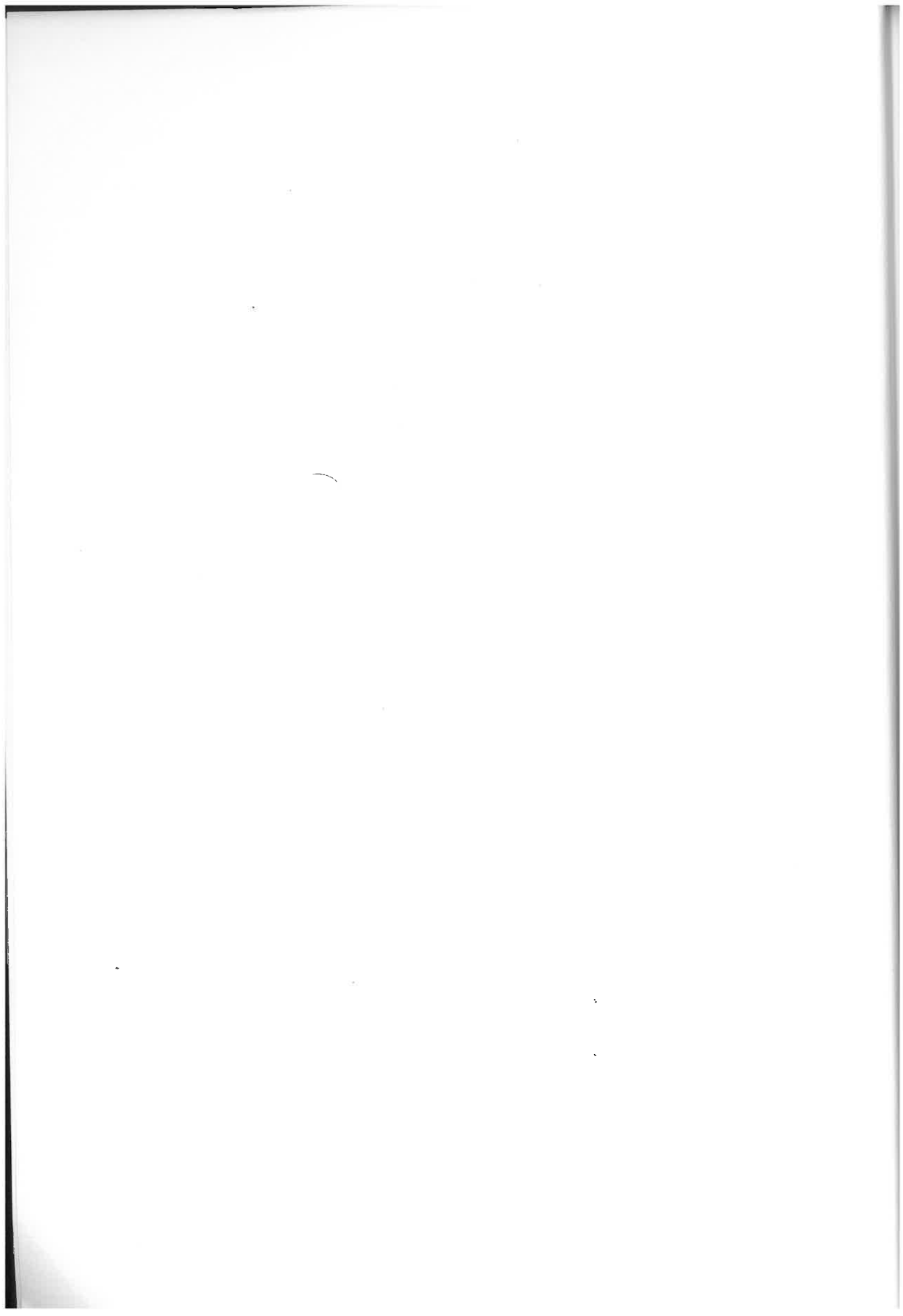
**Technology, Networks,
Finance and Public
Regulation**

**Andrea Giuntini
Peter Hertner
Gregorio Núñez
(Editors)**

EDITORIAL COMARES



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AND PUBLIC REGULATION



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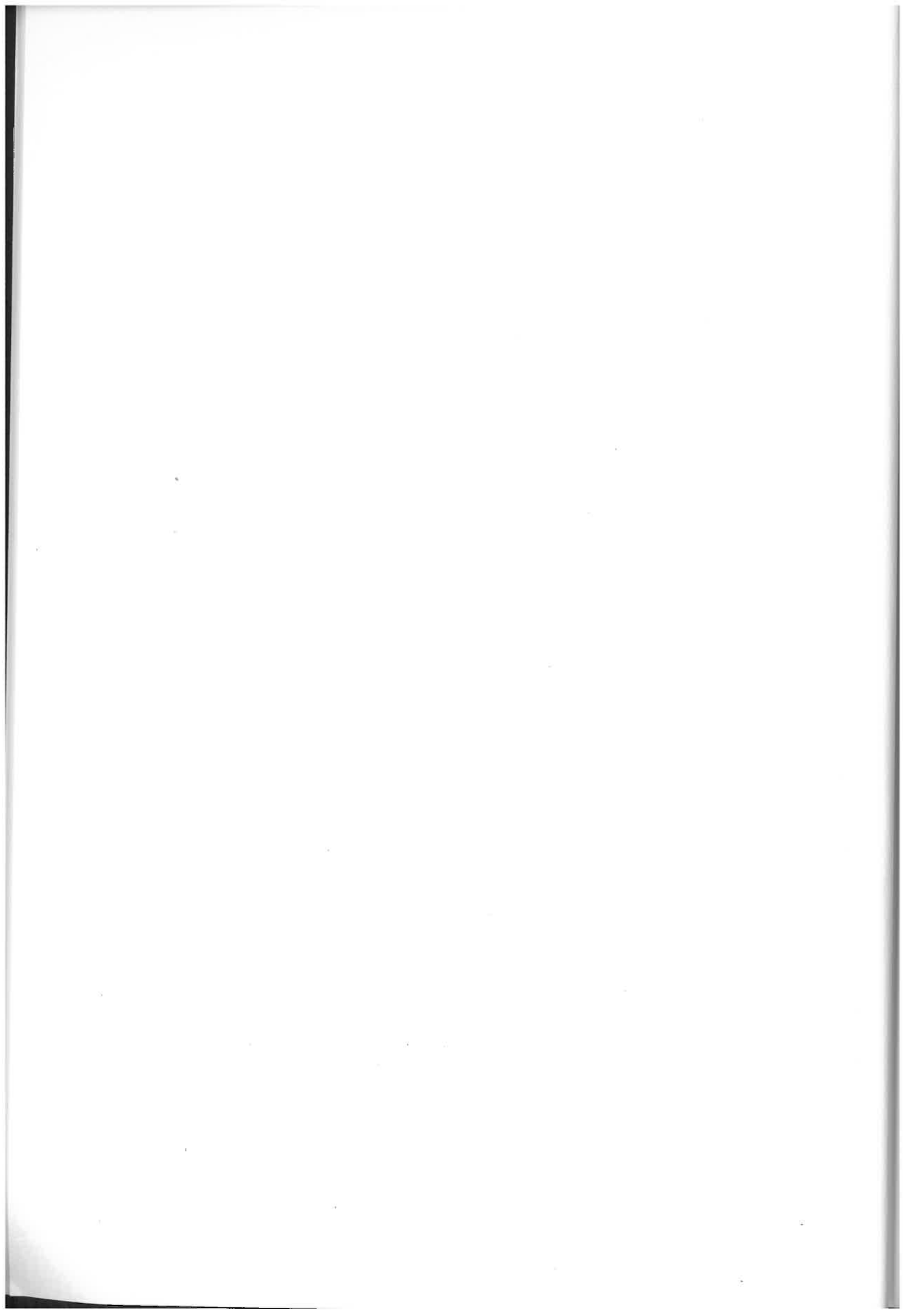
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Introduction

GIUNTINI, HERTNER and NÚÑEZ

This volume emerges from a series of meetings held over a number of years by different specialists from a variety of countries who are experts on the history of cities during the industrial age. Specifically, they worked on the set up and administration of the municipal services of these cities¹. It has been a long journey which significantly encouraged the growth and maturity of the subject. The original group of experts was, at one point, larger than the collection of authors whose work is reflected in these pages. There are varied reasons and a number of practical contingencies, which are not all strictly scientific, which have led to the final exclusion of some texts. However, the participation of those authors in the debates was useful and it confirms, from the very beginning, the idea that the panorama offered is wider and more articulate still than is manifested here. The aforementioned meetings took place during recent years with the aim of studying urban services and infrastructures from an historical perspective throughout the second industrial revolution. Therefore, the chronological framework starts in the mid-nineteenth century, when the explosive growth of industrial cities generated serious demographic and social problems on a scale previously unknown. This framework continues until the second half of the 20th century, which is when the advanced societies of Europe and America finally managed to establish the valid criteria and the necessary instruments to solve such challenges. Included in the great historical process that some specialists have labelled the “first globalization”, the

¹ These meetings took place as seminars or sessions of general and specialized historical congresses in Halle (1997), Madrid (XII Congress of the International Economic History Association, 1998), Bordeaux (V Congress of the European Business History Association, 2000) and Helsinki (VI Congress of the same EBHA, 2002).

subject here presented offers a broad and very significant sample of the urban history of the world.

The societies of that period were ill prepared to tackle such issues. However, the urban environment that had caused the problems soon generated a wide variety of collective answers and experiences aimed at solving them in a variety of ways and in a different place and time. This was a true revolution in both the demand and supply side of modern urban services, many of which were newly conceived. Such a process generated strong evolutionary pressure in the sense that many authors have summarized under the term of "modernization" which affected the entire social fabric. This definition ranges from purely demographic factors to the most sophisticated cultural aspects, obviously including fundamental economic and political components. The modernization of urban services involves at least three factors or main categories concerning the sample of services that interests us:

- a) a true organizational and political revolution,
- b) momentous technical changes, and
- c) a completely new fiscal and financial economy.

To the aforementioned factors, we have to add the changes that occurred in the way of life which have always seemed to be closely related to the regular use of such new urban services, illustrated by the emergence and expansion of a new modern urban culture and its gradual extension to the majority of the citizens. Undoubtedly, this modern urban culture is the most fruitful product of the changes which came about in the relationship between the inhabitants of the cities and their local authorities in their newly acquired roles as either users or managers of the new collective equipment. Motivated by very different expectations and attitudes from those of the past, the modern citizen required from his authorities a wider, more varied, and technically more sophisticated range of services. Such new requirements influenced particularly the field of the infrastructure and the municipal services. The introduction of a wide range of new technologies generated a vigorous transformation in the public attitude regarding the City councils: from a passive adaptation to the conditions imposed by the lawmakers, they moved into a higher level of participation and a greater freedom of choice made possible by significant investment. There was a new perception of society as the object of permanent change, in which new user demands obliged the supplying local Administrations to provide newer and more significant public goods and services. In the end, politicians, officials and municipal technicians adopted and encouraged such changes promoting a profound reorganization from which emerged the new local ways of life and the modern consumption patterns.

At that time, there came about two different but mutually complementary processes. Firstly, there was a significant acceleration of the assimilation and integration processes among different economic and social entities operating in the urban arena. Secondly, the emergence of public opinion figures at the very origin

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of what sociologists have defined as “mass society”. Gradually, daily life experienced a growing uniformity lead by market forces. Services such as street lighting, hydraulic and sanitation systems, trams, telecommunications, and so on, exerted great influence on the life and work habits of the citizens. Their relationship also changed on scale and diversity unknown until then. When the population of the city grew, when the way of life changed, when attitudes towards the performance of public authorities were modified, urban functions had to adapt and therefore assumed renewed characteristics. This represents the origin of the mass society, whose significance were critically underlined more than seventy years ago by the Spanish philosopher José Ortega y Gasset. Sooner or later, other assimilation and integration processes followed, affecting the forces and organisms which usually cohabit in the heart of cities, in the form of new mechanisms for social action.

The thesis of Alfred Chandler Jr. on the emergence of the “visible hand” in the context of the great industrial corporation of the time is widely known. In the specific field of business history —a discipline in which several of the following articles should be included— is a classic argument that links the appearance of mass consumption to the establishment of new technologies, and the necessary organizational and governance modalities required to assist them (CHANDLER 1987). We can add that parallel organizational changes, closely related to those instituted within the large industrial corporations, were also applied to the management of the local public sector. Moreover, contemporary municipalities have represented a truly innovative environment in which future developments of the modern way of life have been tested. As occurred in private companies, also in the City Councils and, later, in every public corporation, politicians, managers, and technicians saw a growth of their number and competencies, of their decision-making role and, obviously, of the amount of resources under their control, to be put to the service of new collective projects (see RUGGE 2000). In both cases, large-scale finance could be achieved in formal financial markets. Once the opportunity had been established to extend the Chandler scheme to the analysis of local public organizations, it is important to underline that, between the public and the private fields, there was a shifting border territory within which, “public visible hand” competed with the private “visible hand” under conditions that were neither transparent, nor always contradictory. At that time, this frontier shifted gradually, sometimes in favour of the expansion of the public system, and other times turned in favour of the private system, and vice versa. In reality, these modalities of social action established a slow but steady tide, which rose and fell according to social preferences (cfr. HIRSCHMAN, 1986). This constitutes a process which today, with our broader historical perspective, we can conceive as a recurrent historical-institutional cycle which, against the wilful opinion of those who prefer public solutions, and the adamant convictions of those who prefer a purely private option, we interpret as a necessary and endless historical process.

The local "arena" is always significant at any time during which civilized societies are to be studied. In the late 19th century this arena assumed a scale and a complexity which allow us to consider it as one of the main contemporary core phenomena or even the main engine of progress (see HALL 1998). This situation obliges us to study many complex collective decisions, often conflicting ones, which occurred in a context in which technologies also became progressively more complex; organizational and financial options—in particular the massive use of long term financing resources by means of formal financial markets—grew largely in scale and variety. Nevertheless, it is a matter in which, as Lionel Frost recorded ten years ago, the historical-economic point of view remains too frequently obscured (see FROST 1993). To summarise, one of the objectives of this compilation is, in fact, to renew and expand an argument that, without being new, finds in the field of urban collective services a new impulse which could revitalize the debate.

The aim of this book is, in fact, to develop both ideas; the reader will find a wide range of topics, elements and conditioning factors concerning different aspects and cases of urban renewal. The plan adopted includes a wide international perspective. The thematic wealth of the studies included in this volume is also revalued by the diversity of the points of view sustained by different authors, and by the presence of different opinions. Another additional advantage consists in the fact that these papers are not centred on those brilliant and very original *innovative milieux* studied by Peter Hall, which were indeed pioneers of the process and whose influence has been felt in world history throughout generations. On the contrary, these pages include diverse cases and countries which were marginal in some sense and where imitation or foreign imposition took over from innovation. This is probably the main reason why these cases are often either not widely reflected in international historiography, nor studied from other points of view. An extensive bibliography at the end of the volume reflects the current state of the question, not only in general but also in terms which concern the national cases under consideration: Argentina, Austria, Brazil, England, France, Germany, Italy, Portugal and Spain.

1. NEW PERSPECTIVES

In recent years, the studies of the past and the future of cities have intensified in a significant way within a scenario that is also presented as undergoing profound changes. The growing interest in the subject has been encouraged by the increasing requirements of daily life and the worrying perception that this daily life is becoming more and more uncertain. This created renewed demands that give rise to request for help in order to imagine future municipal governance and the new instruments necessary to carry this out. Moreover, globalization raises further questions,

sometimes alarming and always controversial, that create the necessity of accurately foreseeing this changing environment into the one in which we will soon find ourselves. Therefore, a wide range of questions, the answers to which different disciplines claim to be able to provide, confronts us now. Nowadays, all cities, and not only the largest ones, seek to become the centre of some international event which would become the spark that would light the entire transformation of the urban entity, favouring its position in the global network (Borja and Castells 1997).

It was precisely in the city where many of the new elements of economic and social development were tested. The very "Welfare State" was municipal in its origins before becoming a national objective. A fact whose significance would allow us to suggest the term "Welfare City" to describe it. Crucial episodes of the innovative process took place in the cities, to the extent that all cities, and not only the largest or the most advanced, become the stage on which this social drama was played out. The new order was a result of the industrial system, of the internationalization of technology and finance, and of the improvement in communications. These factors changed the positioning of opportunities, and fuelled the population's capacity to respond to these stimuli. In the final analysis, these changes should be judged in the most general terms and, specifically, on their influence on costs and benefits to citizens.

Faced with such great problems issues, but also endowed with large capacities and resources —often unsuspected by the protagonists themselves— many cities turned out to be privileged arenas for collective experimentation and for the setting up of the so-called urban technical networks. Such networks were the result of momentous changes and they summarise the problems and opportunities of urban life in the context of industrialization; these features made them into an outstanding object for analysis, and therefore very much appreciated in recent historical studies.

The growing complexity of the management of cities brought about by industrialization, lead to the search for new methods, new strategies and new technical alternatives which would allow the physical and functional reorganization of urban systems. This explains the interest that social scientists are recently manifesting regarding a subject that is classical in so many other aspects, but is now being reconsidered in the light of the novelties involved in the globalization processes. Even the media, the cinema in particular, feed renewed interest of the urban question in the collective conscience. It speaks again of cities, of urban functions, of the renewed role that urbanization will have in the third millennium. Although scholars sometimes study the subject following similar interpretive paths, they often appeal to different paradigms and categories. In this way, the scenario has become the crossroads of the studies of urbanists and urban sociologists, architects and urban historians, geographers and anthropologists, jurists and political scientists, or experts in the study of Public Administration. Each and everyone of them has found himself, in recent years, faced with the need to change his outlook

and to be appropriately equipped for the analysis of such topics in rapid mutation. The apparent interest in the current issues has also find his way into historical studies, with the conviction that a full understanding of the current processes necessarily goes hand-in-hand with the reconstruction of historical facts. A connection is thereby forged between the past and the present; this applies not only to the conceptual and theoretical elements, but also to the actual and material aspects.

The starting point for many of the current reflections on the future of the city laid to the conviction that globalization broke every analytical paradigm on urban phenomena and demands a rethink of the role of urban services and infrastructures. It is not superfluous to affirm, once again, that even now some of the greatest transformations in the contemporary economy are happening in the cities, and that the urban processes acquire, once again, a key role that seems to reflect the most provocative novelties to which these new economic conditions subject us daily.

However, after stressing the multifaceted nature of this truly Proteos' kingdom, it is appropriate to stress the continuity of old problems, either potential or effective. For example, those related to urban ecology, which is the origin and focal point of most issues (see TARR 1996), or those related to the influence of national authorities (see RUGGE 1992). This leads us to the eternal and continuously revitalised issue of local autonomies. All these aspects have been strengthened by globalization and the emergence of networks of mutually interactive and highly competitive cities (WARD 1998).

In the more developed countries of Europe and North America, the prodigious development of some urban centres was linked to the need to stabilise and, therefore, to sustain the new urban population. This population became increasingly relevant due to the gradual accumulation of human capital which was of vital importance for economic development (WILLIAMSON 1990). Social networks were brought into action in previously unfamiliar ways in order to sustain this growing population with sufficient supplies of basic consumer goods and to endow it with reasonable health and living conditions. All this took place in an atmosphere characterised by high costs and the need to deploy full market and monetary economies. The emerging industrial economy created the need to find a solution to the negative ecological balance of pre-industrial cities where, despite the regularly slow rate of growth, terrible living conditions prevailed and the population could only be sustained through the speedy rotation of the immigrant population whose health was soon affected by the living conditions. But the needs of industrialisation and the accumulation of human capital required considerably more than mere living conditions. They required more and increasingly varied goods and services which encouraged the growth and the diversification of that complex phenomenon known today by the terms "human capital" and "social capital" [see (GLAESER and MARÉ 1994) and (RYAN 2001)]. This also gave rise to the need for significant investment in other areas such as education, the design and development of new instruments of

social solidarity, the construction of a new collective image, the setting up, in effect, of new institutional regulations and systems. This is why the period that concerns us saw a tendency towards diversification at the same time as growth; and this was not limited to the ecological environment. Once again, the new requirements of the day went hand in hand with new opportunities, both technical and organisational, and it is worth remembering that neither would have existed in a less dense or less problematic or slower growing ecological environment. On the other hand, given the situation at the time, the foundations were established for some of the most significant business developments since the end of the 19th century: from the construction of mass-produced dwellings and the regular supply of food, fuel and drinking water to, in the fullness of time, the education of the recent arrivals and their families together with the availability of an entire range of consumer goods and public services. These elements were highly productive for the cities themselves and, occasionally, very profitable for both providers and organisers. All this created a whirlwind of technical, organisational and financial change which ultimately provided satisfactory solution to those problems caused by the urban habitat of the large agglomerations which were growing in size and density.

2. INFRASTRUCTURAL DEVELOPMENT DURING THE SECOND INDUSTRIAL REVOLUTION: OLD AND NEW PROBLEMS, ORIGINAL SOLUTIONS

In our attempt to analyse the role played by infrastructures and services in the process of economic development, the need arises to clarify precisely the subject of our research. This need is even greater given that this is a subject which only recently has acquired full definition and complete autonomy in the context of urban history. Therefore, it would have seemed appropriate for us to take the broadest view, which would have enabled us to include within our field of analysis the entire range of elements that, in all cases, help to maintain the unity of a city. Space would have had to be found within our study even for the construction of army barracks, police or fire stations, hospitals, schools and so many other buildings as well as the management of the services for which those buildings had been constructed. However, if we had adopted that breadth of scope we would have had to deploy enormous resources and, worse still, it would have been difficult to establish a clear definition of our objective with distinct parameters and, at the same time, to include obvious peculiarities leading to differing points of view.

In order to solve this problem, the chosen method has been to focus on services that are organised as networks based on high-cost and sophisticated material infrastructures. This method allows for the precise identification of a specific grouping of public services, to the exclusion of others, without having to enter into

complex issues of typology or possibly futile discussions about their respective economic and social relevance. This is the ultimate reason for not including either hospitals or schools, railway stations or police stations nor, of course, the enormous and daily increasing collection of public works in general.

For some time now the history of this subject has advanced most notably in Great Britain and the United States which is where the two best-known publications on the subject, *Urban History* and the *Journal of Urban History*, are produced. The reasons why the British and the Americans have featured as the main protagonists are obvious. For many years, they have been able to count on a large number of researchers and a solid tradition on the subject which can be traced back to John Dyos [with his classic work (DYOS 1968)], the veteran of British urban historians and founder of the Centre for Urban History at Leicester, an unrivalled centre for those concerned with urban history and currently under the directorship of Peter Clark. In France, the work of François Caron and his school has made a significant contribution to progress in this field (CARON, DERENS, PASSION and CEBRON DE LISLE, 1990). Nowadays this subject has acquired more widespread interest as can be seen from the emergence of new publications in Italy —*Storia Urbana*, Milan, since 1977, and the most recent *Città e Storia*— and in Spain —*Historia Urbana*, Valencia, since 1992—. Infrastructure in general and urban infrastructure in particular, are basic features of the industrial revolution and of the urban expansion that accompanied it. The new organisational and business criteria associated with the new technologies had a significant influence. So much so, that the creation of new services and their long-term management and maintenance presented one of the main challenges and, in time, one of the greatest achievements. For this reason, municipal activity and the range of services organised at one time or another by Town Halls have been many and varied. Their characteristics have been equally varied. It is therefore advisable to limit the area under study without losing sight of the whole.

We can obviously consider a variety of elements and aspects, which gave an impulse to the processes. We must take into account, for example, the wide range of external effects that they cause. The interface between politics and economics which are truly inseparable, and also the preferences for certain types of management, both public or private, which changed radically throughout the decades. One other aspect that must be highlighted during the period that concerns us is the fact that urban services provided ideal ground for the application of the most advanced technologies of the time. Some of these technologies required enormous fixed investment with very long-term amortisation periods and expected profitability in the best of cases. Controversy surrounds all the aspects mentioned for which, in their day, there were more or less effective alternatives.

We must, however, avoid making judgements based on our current experience which is now free of uncertainties after lengthy historical evolution. We must focus

on specific cases using our best efforts to see events through the probably perplexed eyes of contemporaries.

From the mid 19th century to our days, vigorous urban expansion as a result of industrialisation gave rise to confrontation between cities causing truly urgent problems but which we can hardly consider as unknown. In the mid 19th century the evil odours of London and the epidemic of 1853-1854 are examples of one of the most significant crises at a time when the greatest ecological system in the world found itself, quite literally, on the verge of general biological collapse. But this time the crisis also initiated a subsequent collective response. This response is perfectly exemplified in the work of Joseph Bazalgette on hygiene-sanitation grounds [see (HALLIDAY 2001)]. Later decisions such as the sanitation and reconstruction of Paris under the aegis of Haussman, or the spread of the hygienist movement among doctors, engineers and city authorities, clearly established the bases for future social action. The results are clearly visible in the long-term trend of death rates in European and American cities.

It is therefore clear that a study of cities includes, simultaneously, the challenge and the response to it. Requirements and critical events must be studied, but also the opportunities and the innovative responses that these produced. This dual interpretation of the urban phenomenon during industrialisation can be exemplified in specific and clearly localised cases. If the situation of Manchester is often given as an example of the social ills linked to industrialisation, the case of Birmingham can be contrasted as an example of the solutions that were reached shortly afterwards. Or, in other words, the solution can be seen as an example or a model of one of the many viable alternatives or the different styles or strategies designed to achieve it. In this context, the new municipal strategies and the local political struggles between the different options acquire particular relevance [see among others (MONKKONEN 1988)].

The problem is one of the outstanding issues of that time and also of ours; the solution represents one of the greatest achievements at least of the currently developed countries. The role played by its pioneers and protagonists has often been highlighted. It is also worth mentioning those cities that occupied a secondary position in this process either as imitators or as benefactors of foreign initiatives. In this book there are several examples of this latter group for whom the opportunity to follow in the footsteps of more advanced models, both in terms of problems and solutions, gave rise to a series of imitative processes that offer unique features compared to the original models. These features emerged from a genuine process of challenge and response. However, the mechanisms of adaptation and growth which soon came into play reveal that the social ability to adapt is no greater than those locally based needs and initiatives.

But whether pioneers or imitators, the will to face up to the problems, the wish to take advantage of perceived opportunities, the decision to take action, the variety of social alternatives and so many other features, are all reflected in local public

expenditure and often in municipal debt. The history of local finance is currently undergoing a thorough process of revitalisation and revision. Two different yet complimentary proposals towards this process are offered here. With the passing of time there has been a significant increase in the spending capacity of local administrations; municipal economies have become a dense and complex network of investment decisions (see BROSIO and MARCHESI 1989).

3. A NEW THEMATIC STUDY TOWARDS A UNIFIED VISION: INFRASTRUCTURE NETWORKS IN CITIES

One point of view which is very current today and which will enable us to undertake an orderly study of the changes outlined above, is the view that concerns those services organised as a network. They usually appear linked to technical infrastructures to be found in a specific area. A study of urban networks necessarily involves introducing a broader perspective of the services themselves and, in short, a re-evaluation of the study of urban reality overall.

The main operating system for innovations in new urban infrastructures and services, particularly during the period that concerns us, is on a network basis. This involved a reorganisation of productivity in line with the innovations in industrial production introduced at the time which, in turn, was linked to changes in demand and to the new features of the market.

This concept of the network as treated and developed by historical study in recent years, features as a basic argument in the analysis of changes in economic and social realities. This concept was introduced as a socio-economic metaphor emerging from the realms of physics on which social scientists are currently so keen. It was an attempt to describe a system of multiple, non-hierarchical connections in specific historical cases. In the current debate it occupies a gap which stretches from the new concept of enterprise to the multiple networks of social tissue and, from there, to the global network represented by interpretation models of reality. The term "network" was first used by sociologists and anthropologists, who used it in their studies to describe, vaguely at first, the complex system of social relations both in traditional community societies and in egalitarian contemporary societies. However, it soon became the meeting point between a social-cultural vision of technology and the world of material objects. Numerous and varied arguments have been successively put forward from different sectors of scientific literature which, in general, have devoted the main focus of their attention to the analysis of physical systems and specific cases. The result, therefore, is that the concept of network, apart from those networks that are themselves the object of study, finds its element of convergence in its capacity of connection.

The new analytical concept enables us to explain the current economic organisation in terms of each collective activity becoming a network and liable to be studied as such. The concept assumes various meanings, both technical and social or economic, and is suggested as an equally decisive interpretative key to the identification of real phenomena which are susceptible to empirical observation. And, more specifically, the development of the "networked city" represents the very condition for its overall development in such a way that, without social and technical networks, cities would be faced with limits that they would not be able to stretch. Nowadays, having progressed beyond the concept of geographical location and well aware of the decadence of the forms of classical territoriality, new forms of spatial organisation of the economy and information now establish a new organisation of services in the city which, in turn, imposes a radical change of thinking about urban spaces based on spatial and economic growth of the city fundamentally supported by infrastructure networks.

Discussion of the theory and the practices of networks involves a technological view of the arguments under analysis. The history of the city and of techniques is inseparable to the extent in which the city is historically the privileged ground for many of the innovative techniques, and more particularly, for those which emerged at the turn of the 19th and 20th centuries. During the contemporary period technology has played a decisive role in the definition of urban space. From that moment onwards, its impact becomes increasingly energetic and decisive; in a few decades, the technologies of the second industrial revolution solved some of the main urban problems and therefore the very organisation of urban reality. So the study of the changes undergone by the urban context under reference will enable us to understand, for example, the degree of relevance of modern lighting, of the new hydraulic and hygiene-sanitation installations, or of the expansion of tram transport on the life and work of the inhabitants of cities and on the system of reciprocal interaction.

Among the different criteria which are considered to be useful litmus tests to contrast the incidence of modernisation of urban services, technology is the item which contains the best elements to attract the efforts of historical research. It may even seem pleonastic to underline the crucial role it played in the workings of cities and even in their aesthetic aspects. It is nevertheless true to state that, despite the significant relationship between the city and technological systems, there has been no deluge of specific research on the subject. The main reason for this may be found in the failed interface between the history of technology and urban history. Today, at last, we can observe the birth of a realisation of the degree to which this link is necessary in order to understand the changes undergone by cities, and research is beginning to make up for lost ground.

Industrialisation has encouraged the establishment of new technological networks and the emergence of a new type of city. The range is broad: from mechanical transport to fresh water; from drainage networks to the disposal of

domestic and industrial wastes; from the distribution of gas to the distribution of electricity to the recent telephone and electronic data networks. Research into all these networks finds fundamental and direct application in the urban context. If, therefore, the network view is accepted and broadened to include the whole urban phenomenon, the concept of networked city is achieved (DUPUY 1988). Taken from the title of a book written by several authors a few years ago, this concept can explain perfectly what we understand by collective technical systems. The project was co-directed by Joel Tarr and Gabriel Dupuy as the result of a congress that took place in Paris in 1983 and established the link between two historical trends that had developed in parallel to each other: one of them was the Anglo-Saxon current which was more advanced on the subject of urban history, while the other current was French and was the first to enter more deeply into the network concept. It is therefore no coincidence that after only two years a second book was published which established a model of great interest to us and concerns a study of Parisian urban networks. There have been several events since then: from the congress on the theme of *Citadins, techniques et espaces urbains du XVème siècle à nos jours* in January 1994, to the one held in September 1995 on *Les technologies du territoire*, both in Paris. Studies on urban networks in which technology continued to take a leading role have been undertaken with highly satisfactory results.

4. CONTRIBUTIONS

The first two articles in this collection deal with the relationship between urban economies and municipal finances on one hand, and health and quality of life in cities on the other. In both cases, municipal programmes of public works take centre stage in the analyses. The text is by Robert Millward, the well-known specialist on the economic history of British cities who, by searching among the investment programmes of a number of large cities in England and Wales, seeks to find the essential elements to study the decisions of local Administrations, to establish which were their preferences and commitments, and to quantify the efforts made in terms of financial investment at the height of the second industrialisation of the leading industrial nation. The article focuses on the hygiene-health question which, at that time, was the main issue and the top priority for British Town Halls. An initial review of British health legislation enables the author to set out the general political framework within which local administrations had to operate. The effective results depended, basically, on the resources available to the various municipalities and, therefore, on each local entity's capacity to attract them.

Gregorio Núñez, in his contribution, opens new ground in a lesser-known area where few advances have been made in current Spanish historical research on the

subject. He sets out a similar theme based on the close association between municipal modernity and the level of public expenditure in those municipalities which either opted for a densification of the urban habitat or were forced into it. Here again, municipal investment, while studied under a different methodology to the one applied in the previous chapter, is presented as an indicator of urban problems on one hand, and of the capacity of local elites to solve them on the other. In this case, the study is based on the auctions to tender for public works and the management of services organised by Spanish municipalities during the final years of the 19th century and the first decades of the 20th. The process is linked to an investment capacity which, both in Spain and in the countries surrounding it, was severely limited for budgetary reasons and which was the main feature of the political and financial framework within which local Administrations had to operate. Despite the shortage of fiscal resources, this study clearly establishes that many of the most important Spanish municipalities of the time were able to find the necessary capacities and resources—either fiscal or on credit, public or private—for those cases where they really felt effective needs and when the necessary collective will to carry them out was deployed.

Subsequent texts deal with a variety of services in different places at different times. All of them are usually linked to the third Kondratieff, electricity, urban transport and the modern supply of drinking water. These are areas which, together with health and social problems, have been witness to some of the most lively discussions and have been at the heart of some of the most advanced solutions in different countries.

In his article on the electrification of German cities, Dieter Schott summarises the technical, economic and developmental processes involved in the establishment of the electrical industry and he offers an analysis of different cases during the first stages of electrification. Beyond certain well-known regularities in these processes, the author introduces interesting elements which appear when dealing with the process in broader than usual systemic terms, for example, as a central element in the global growth and modernisation process in industrialising cities endowed with significant backward and forward linkages. A comparative analysis of different strategies on electrification in various cities clearly underlines the aforementioned particularities and opens the way for an evaluation of their influence on the development of the cities themselves and on the electrical industry.

The next article, by Paolo Capuzzo, takes as its central argument a comparative view of tramway services in the two large cities of Vienna and Berlin, together with the two organisational methods of transport systems which in this article focuses on the two traction modalities, animal and electric. Issues of space and mobility were perceived in different ways in each city due to the different processes of economic and demographic growth. The political and institutional frameworks were also different in both cases; Berlin was more expansive and competitive while Vienna

was more conservative and monopolistic. This article also focuses direct attention on the municipal political turmoil and on its effect on urban life in general.

Andrea Giuntini's article describes the spread of a new variety of urban services in Italian cities whose main feature became their configuration as an infrastructure network for collective use, as well as the high installation costs, particularly in southern Italy. In view of the magnitude of the phenomenon, the author is clearly forced to concentrate on certain aspects and he chooses to focus attention on the hygiene-health infrastructures. Apart from the technical details related to the networks and the new technologies that were integrated as networks, the author highlights the political context of the new services and, specifically, the role played by the professionals in promoting and then managing these services. The protagonists of the Italian history of municipal services during the second industrialisation were the hygienists, the doctors, the engineers and the architects, rather than the politicians, with their ideology, aspirations and interests. In the purely political arena, however, the issue of municipalisation became the main centre of interest. On this question, The Kingdom of Italy led the way and became the precursor in the Mediterranean area of political and administration criteria associated with north European countries.

The article by Alexandre Fernández concerns France and a unique and, in some ways quite exceptional case in that country. The changes in the institutional structure of gas and electricity services were more noticeable and often more divergent in Bordeaux than in the rest of the country. The starting point of the subject is 1832 and continues with the nationalisation of the electrical sector in France in 1946 with a lengthy series of private and public initiatives, via the critical changes imposed by the Great War, and leading to municipalisation in 1919. From this point onwards, the author deals with the intricacies of local politics, the party system and the technical and business options which were adopted in response to successive problems and to cover the inevitable growth in demand.

One of the most interesting features of this collection is, undoubtedly, the inclusion of studies of countries that are not so well covered by international historical works on the subject. This also concerns countries and cities which, on a global level, occupied a secondary position during their respective periods and which were therefore recipients rather than direct protagonists of the great changes introduced by more innovative cities. Apart from the aforementioned article on the municipal policy of Spanish cities, which is included in this group for geographical reasons, the following articles concern the Iberian Peninsula and the South American Atlantic coast.

This second group opens with a comparative study between two specific cases in Italy and Spain. Written jointly by Marco Doria and Peter Hertner, this article concentrates on electrification and, particularly, on the operations of the large multinational companies in the electrical sector in Genoa and Barcelona at the

beginning of the 20th century. Both cities stand at the heart of the industrial system of their respective countries in the context of the second industrialisation. This case is conducive to a counterpoint analysis on the integration process of networks, companies and consumption which once again reveals the contribution made by the business and financial history of the large electrical multinationals to the study of the local history of urban services.

In his contribution, Álvaro Ferreiro da Silva starts with a study of the modernisation process of the basic services in Lisbon during the entire second half of the 19th century. The supply of drinking water and sanitation were, initially, an answer to the main problem caused by urban growth which, together with the population expansion and subsequent transport problems, are all closely linked in a report which highlights the great institutional issues. The usual historical stages in industrialising countries, which start with the first steps in sanitation and progress gradually towards a definition of the criteria and instruments of modern urban planning, are here faced with the administrative and financial limitations common to Portuguese cities in general and to Lisbon in particular.

The article which follows this one is by Juan Manuel Matés and deals with the long-term development of fresh water supplies to the main urban centres in Spain and the need to modernise these supplies which, already at the start of the 19th century, had been considered as one of the urban services which most urgently required reform and expansion. This issue is particularly relevant and complex in a singularly dry country with irregular rainfall as is the case in the greater part of Spain (see Núñez, in press article). Following the liberal tradition in the question of the management of public water supplies, and also in accordance with the French tradition on municipal services, the development of this sector in Spain is here described as a great "institutional life cycle" of the privatising solution which characterised the modernisation process of this sector until well after the start of the Franco regime. The concession of water supply services to private enterprises in Spanish cities was a solution that was imposed, not without difficulty, throughout the 19th century and reached its climax at the start of the 20th century, entering its final systemic crisis during the Franco regime. There is an apparent paradox here in that, even though the Franco dictatorship kept local authorities in virtual financial starvation and paid scant attention to a modern and widespread provision of basic social services, it also adopted an attitude of overt hostility towards the concession of these services to private companies, most particularly foreign ones, while encouraging massive State investment in large hydraulic projects. The final development of this sector therefore took place under anomalous conditions which, in recent times, has required profound organisational reform and the establishment of a mixed management system. This process could mean a new "institutional life cycle" the study of which has not yet been undertaken.

José Luis Hernández-Marco's contribution also centres on the field of business history. He presents a specific case which is, interestingly, based on a municipal public enterprise in Spain. This article refers to a small city in the north of the country which was characterised at the time by its great industrial dynamism. Whereas the previous article looked at the Franco regime as the end of an institutional cycle, in this case we are presented with a phenomenon which starts during the Franco period and describes the social and political response to the changes that took place to break away from that system during the difficult stage known as the "political transition" in Spain. The article devotes ample space to general institutional questions and starts from a situation of tolerated illegality —the system of municipal public enterprise was simply not established in legislation at the start of the initiative described here— but which was promoted by individuals close to the regime, continued under similar conditions after the introduction of the democratic system and developed further to become a complete Welfare State at local level. Once again, the managers of the service and the municipal authorities on which they depended became pioneers in the running of the system.

In conjunction with the study of municipal services and public and private concessionary enterprises in Spain, Honorato and Martínez deal with similar phenomena in Brazil. As with Iberian countries, this subject and its geographical location are, with very few exceptions, neither well-known nor sufficiently covered in international historical studies (see v.g. SZMRECSÁNYI and DE SAES 1992).

Kátia Martínez's article analyses the first steps in the construction of the new institutional framework in Brazil during the 19th century. The subject focuses on the very heart of the construction of the modern Brazilian State and the establishment of its capital city, a process in which the supply of gas played such a central role. As usual, the gas industry, which was about to become a public service, together with the emergence of production and the distribution of gas for lighting, took on the role of the technical and organisational vanguard of the modern public services. By combining British business models with French legal and administrative initiatives, the public and private social agents of the city began establishing the foundations for other services such as water and electricity which soon took over. The article rapidly reviews some of the services that featured in Brazilian history and introduces some of the companies and personalities we shall be seeing in the following article.

The contribution by Cezar Honorato deals with the two societies which were devoted to the electrical services of Rio de Janeiro and, after some time, in other neighbouring cities throughout the 19th and a good part of the 20th centuries. As in the aforementioned article by Doria and Hertner, this study underlines the role played by powerful international financial circles and describes in detail the complex relationship that existed between national and international politics and local business

conditions. The main plot concerns the struggle in the area of national and international high finance between two large industrial and financial groups, one international and the other Brazilian, for the monopoly of electricity services in the Brazilian capital. The description of this struggle sets the stage to show the gradual institutional definition of a legislative and political framework adapted to the needs and to the problems concerning the concession of new public services.

Moving slightly further south, the article by Raúl García Heras gives a swift but detailed description of the history of transportation services in the great city of Buenos Aires throughout the 20th century until 1970 when the modern capital of Argentina was defined. The chronological and particularly broad and relevant framework of the text describes the development of a number of sometimes competing yet often complementary services (railways, trams, buses, underground) whose industrial life cycles take place in the usual succession. The study also deals with the emergence of new systems, their expansion and subsequent crises which were more or less acute depending on circumstances. As far as the political question is concerned, this was often overshadowed by nationalist feelings and always governed by the composition of different local interests. As outlined in the article by Matés and defined as an "institutional life cycle", the text describes the slow move from private management to public and again back to private in line, however imprecise, with what happened in many other countries.

Finally, mention must be made of the significant effort to produce the bibliography extracted from the different contributions. As we see it, this provides a unifying body of work which links the compilation of the main work on the subject, usually published in English and generally well-known, with a selection of specialised literature on our subject for the different countries included in the selection.

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