CHAPTER 1

Introduction

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'In 2008, for the first time, the majority of the world's inhabitants lived in cities rather than the countryside. The world has become, in some measure, truly urban,' wrote historian Peter Clark in the opening to the edited compilation *The Oxford Handbook of Cities in World History* (2013). There is no denying the importance of cities in the present world, but a substantive body of urban history literature is still under construction. Clark's book, for example, declares itself to be the first attempt to analyze in detail the evolution of major urban systems in the world from early times to the

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present. Comparative urban history analysis, according to Clark, was a stirring interest 50 years ago, but it met a sudden halt, or at least a deviation (Clark, 2013, p. 2). To revive such analyses, Clark's handbook used two strategies: first, the provision of case studies, and second, the offering of key variables that help explicate, distinguish, and connect urban systems and networks.

The present volume also aims to be a handbook, or rather a toolbox, by providing case studies for urban historians that will hopefully lead to effective comparative research. The primary attention here is on what we call urban logistics, by which we mean urban management and operations of flow as well as circulation of goods and people, in particular, the systems and networks made out of them. This book is primarily about the interconnections between trade and transport and between urban systems and networks.

Surprisingly, trade and transport networks are not emphasized in the above-cited *Handbook of Cities in World History*. As Clark (2013) admits, with the rise of mega-cities, the focus of urban history research shifted more and more towards urbanization and how large cities emerged and grew. Phenomenal works on Global Cities strengthened the trend to look at large cities as well as international flows of capital and migrations (Sassen, 1991). The situation was much different 30–40 years ago. There was a boom in the historical analysis of urban networks for European history that was connected with trade and transport history, as if they were siblings. Numerous case studies were written; models were discovered and tried. At the present time, however, one cannot deny the relative stagnation of urban network research in history and the lack of synthesis of the research that does exist. A critical review linking existing theories on the formation and evolution of urban networks in the long term with historical studies on transport and distribution is needed in order to provide a new interpretation of the role of gateways. Such an effort has already recently been undertaken by Mizushima, Souza, and Flynn (2014), which may set a precedent for this volume. Reflecting the results of new insights coming from other regions to European history and laying down stepping stones for global comparison is one of the aims of this volume.

This book's strategy is to provide bottom-up case studies that give insights into how to deal with urban networks and systems. Our analysis focuses on the regions of Italy, the Low Countries, Ireland, Brittany in Western France, Scandinavia, and the Baltic regions. These regions have

nurtured historical urban network studies, yet their major population centres are not often treated as mega-cities. Each chapter in this volume closely reviews existing theories and models, makes references to specialized historiographical literature, stimulates pragmatic discussion, calls attention to gaps in the literature, and proposes new perspectives, thereby operating as a comprehensive and useful toolkit for researchers to use in their study of urban networks.

Urban Network Theory: A Historiography from the 1930s to the 1990s

To further define our research questions, we must take a closer look at the relevant historiography and describe how urban network theory was formed. The notion of urban network theory in historical scholarship became established in the 1980s, but it was based on earlier work, and the models that inspired the theory were not confined to the field of history. Some early models were proposed by economists, sociologists, and geographers. The American economist William Reilly created one of the first approaches to urban systems to include the dimension of urban hinterlands. In his book *The Law of Retail Gravitation* (1931), Reilly asserted that the extent of a city's sphere of influence depended on its economic and demographic weight. This Newtonian model, better known as Reilly's Law, rapidly received considerable criticism. One of the main objections was that Reilly's Law did not explain the phenomena of centralization and the hierarchization of cities.

In 1933, German geographer Walter Christaller set up a new model that included the centralization process, the hierarchy, and the configuration in the geographic space of urban systems. This model is known as the *central place theory* or the *central place system* (1933, 1966). Although Christaller developed his models for geography, historians enthusiastically adopted his approach, particularly in the 1960s. The original models were multifaceted, explaining market, transport, and political systems, but historians were most frequently drawn to his market system model. Using his model, the centralization of local and intra-regional trade was explained, as were the inter-urban relationships therein. Because Christaller's model did not include international trade, however, the deduced inter-urban relationship was limited to the point of intra-regional trade. Furthermore, despite the discussion of centralization, the urban nodes Christaller's models described

remained considerably isotonic, with each node expected to have the same operations and functions.

In an attempt to overcome the limitations of Christaller's central place theory, James Vance Jr. and other scholars commenced research that opened a new paradigm in urban history during the 1960s and 1970s. In *The Merchant's World: The Geography of Wholesaling* (1970), Vance attempted to link long-distance international trade flows to central places by explaining the development of the American urban system. What was inspirational about Vance's reasoning was the way in which he introduced long-distance trade. Long-distance trade, in his view, was the result of producers trying to find a market for their products and consumers seeking access to these goods. In the process, both producers and consumers were helped by wholesalers and middlemen, who created a system of staples, depots, entrepôts, and transport infrastructure to forward or establish the flow of goods from producers to consumers. In this way, urban nodes were incorporated into the process of long-distance trade. Vance established a heterogeneous geographic environment that included rivers and oceans as well as nodes and infrastructure built upon commercial relations and historical dynamism. Among the scholars preceding Vance, Guido Weigend made a model for flows in the maritime worlds. We will discuss these concepts further in the following sections.

In 1967 (at approximately the same time as Vance's work), the Australian geographer Peter Rimmer created a model explaining the development of Australian seaports. Rimmer did not adopt Christaller's central place system; he focused on the impact of inland transportation routes and maritime trade on the development of seaports, thereby ultimately clarifying how urban networks are formulated through transport. Initially, the coastline was dotted with small and scattered seaports, which were only very loosely connected to the interior. Because of the presence or absence of geographic, economic, and political constraints, only some port communities were able to construct a transport network linking them to inland settlements. Ports with good connections to the interior areas or their new hinterlands thus started to develop and attract maritime trade as they were the only links between these inland areas and the rest of the world. The seaports that failed to connect themselves to the upcountry urban settlements, or those that joined the transportation system too late, finally lost their maritime functions. These port cities' maritime facilities sometimes temporarily became satellite harbours or outer harbours of their larger neighbours, but

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they were eventually absorbed into those larger neighbours' hinterlands. Rimmer has called this procedure *port piracy* (Rimmer, 1967, pp. 42–44).

Rimmer's term, port piracy, has then been replaced by *hinterland piracy*, which was introduced by Clé Lesger, a Dutch historian who extensively used Rimmer's model to explain the life cycle of harbours in the Low Countries (during the sixteenth and seventeenth centuries) and in the North Holland Peninsula (during the Middle Ages and Early Modern era). From there, Lesger developed a specific concept of *gateway*, which was placed in stark contrast to staple market theory (Lesger, 2001, 2006). Rimmer's model thus showed the impact of transportation and trade flows on an urban system. It was also extremely dynamic in comparison to Christaller's central place theory as it showed how transport routes, trade flows, and ultimately the hinterland develop in time and space.

Vance and Rimmer heavily influenced the new urban network theory that arose in the 1980s. Jan de Vries (1984) developed a model of urban systems based on flexibility and competitiveness rather than on stability and hierarchical relationships. The theoretical framework shown here was called *urban network theory*. Key terms such as *links*, *nodes*, *hinterlands*, and *gateways* were introduced. Urban network theory can be positioned as a denial of Christaller's central place theory. In urban network theory, cities are presented in clusters; each node (and thus each city) is linked to the others by trade routes. The emergence and development of cities and their urbanization/de-urbanization processes are discussed in terms of how the urban network developed. This theory, combined with a surge of demographic history, succeeded in providing a comprehensive and interregional understanding of urban developments in Europe.

At the beginning of the following decade, Paul Hohenberg and Lynn Hollen Lees (1985) provided a model fusing urban network theory and central place theory. Their model can thus be referred to as a dual network system. Covering the interactions and impacts of both long- and short-distance trade, their model became the most accepted method of describing urban systems from the perspectives of trade and transport. Their book also considered cities over the long-term perspective of 1000 years (1000–2000 CE). The dynamism inherent in the development of urban networks, however, was not necessarily their focus, and their work did not fully explain the issues associated with integration of the short and long-distance trades. Around the same time, Fujita, Ogawa, and Thisse (1988) and Krugman (1991, 1993) vigorously developed the field of new economic geography and reincorporated the classic central place theory

models by Christaller and Lösch (1940) into spatial economics modelling, and the field is still growing strongly. New economic geography succeeded in establishing a theoretical logic of the dynamism of spatial allocations covering multiple levels of scales that range from intra-urban to global (Fujita et al. 1999). As Meijers (2007) notes, 'While theoretical models on network paradigm are well established, research demonstrating empirical validity was non-existent' (Meijers, 2007, p. 135). Meijers himself (2007) tested whether the network model better described the spatial organization of polycentric urban regions than the central place theory. He was able to detect network formation where nodes developed their complementarity, and he also concluded that, depending on the research layers (e.g. educational facilities or economic firms), the central place theory could be more applicable than the network model. We therefore need many more empirical cases, both historical and contemporary, to further test the application of these models.

Urban network theory has been established through the evolution of urban theories from Christaller through Vance (1970), Rimmer (1967), de Vries (1984), and finally Hohenberg and Hollen Lees (1985). De Vries's insertion of the urban reality into a network was a large step forward. The dual urban network brought about by Hohenberg and Hollen Lees (1985) gave current urban theory the relationship between long-distance trade and the short-distance catering of a central place to its immediate surroundings.

Towards an Urban Logistics Network

Cities and Logistics—Nodes and Links

The historical urban network model nevertheless needs further refinement. The above-mentioned models do not necessarily describe the essence of a network made of nodes and links. The links form the relationship between the nodes, which are mostly cities, and these links represent the flow of goods and people. In many cases, links are visible in the landscape as roads, railways, canals, rivers, and the like, but links are more than transport infrastructure. They are everything that makes goods flow from producer to consumer. In other words, links can be described as a logistics network. These links are represented by flows. A flow is defined here as every mobilization with a human origin, whether material or immaterial, that moves back and forth between nodes through actions directed by human activity. Cities are described as nodes because they are the starting point and

the end point of flows. Although we acknowledge the importance of other types of flows (such as migration, capital, or information), this book mainly concerns trade and transport flows.

The logistics network consists of not only the transport infrastructure but also the distribution system, such as merchants and middlemen. The logistics network is therefore closely connected to the conceptualization of supply chains and commodity chains. The main interest of merchants and other middlemen is to make the flow of goods go from a producer in one node to a consumer in another node in the most effective way, which can differ according to time, area, and product. As such, the parties involved in the flow of goods always try to ameliorate the system by making better and sometimes new connections. The nodes that promote flow are called gateways. Seaports are often considered to be gateways, but any node that facilitates or changes the flow could be a gateway. A myriad of gateways is at play in a logistics network, and clarification of the interactions of gateways as well as the political, geographic, technological, economic, social, transport, and financial factors that influence those gateways are among the goals of this book.

There is also a mismatch in the speed of change between the logistics network and the cities. Cities change slowly in comparison to the fast pace of the logistics system. The historical development of urban networks can account for these tensions and explain how networks dynamically evolved from there. At the same time, cities are not static; they seek to change themselves to attract more flows in order to compete with, cooperate with, or complement other cities. Links and nodes, meaning logistics and urban systems, have different dynamics and approaches, but one is unable to exist without the other. It is this dynamic, which we have renamed the *urban logistics network*, that is the theme of this book. The opening chapter of this book, Chapter 2 by Per Hàllen, showcases this dynamism by focusing on a single gateway for a long period. Using the city of Gothenburg as an example, the chapter demonstrates just how fast the changes of logistics networks can be and how a gateway city reacted to these changes over the long term, changing its functions and historical meanings. In addition, Hàllen tests the application of Rimmer's theory on port city development for historical studies and suggests some gaps in the literature.

Spatial Formulation: Terminologies

Though Hohenberg and Hollen Lees (1985) presented urban network theory with models for both long- and short-distance trade, there are still many refinements that need to be done to the multiple models meant for the theory, including those that concern spatial coordination. The first of these examples is the setting of the hinterland. American geographer Guido Weigend (1958) described the hinterland as an 'organized and developed land space which is connected with a port by means of transport lines, and which receives or ships goods through that port' (Weigend, 1958, pp. 192–193). On the other side of the ocean, another port received these goods and shuttled them to its own hinterland. To distinguish these two identical structures on both sides of the ocean, Weigend called them hinterland and foreland, respectively. But Weigend's setting was difficult to apply to pre-industrial Europe. The above-mentioned Dutch historian Lesger (2006) pointed out that hinterlands are not uniformly connected to the rest of the world through a single harbour by maritime trade but by a myriad of gateways. He also stresses that gateways aren't necessarily seaports. Continental gateways can provide transportation routes to push along trade flows from one landed urban system to another.

Admitting multiplicity and land-based gateways opens areas for inclusion in the logistics network. To further clarify this, we call the lands beyond the periphery of an urban network the *rearland* (Fig. 1.1). The rearland is another urban system that is separated from the hinterland by an empty land space. The periphery is rarely completely empty, and the boundaries of landed urban systems are therefore much more difficult to establish, but they usually run through less populated areas, such as mountain ranges, marshes, deserts, forests, and moors. Hinterlands and rearlands are connected through continental gateways. We should not automatically assume that a dense transport network would gradually fill up the empty space between the hinterland and the rearland. We should carefully observe and note what shifts occur between them. Four essays in this book (Chapter 4, by Michael-W. Serruys; Chapter 9, by Giovanni Favero; Chapter 10, by Pierrick Pourchasse; and Chapter 11, by Werner Scheltjens) show the network developments between foreland, hinterland, and rearland in a particularly vivid manner. We thus propose that our urban logistics networks have relatively clear boundaries. Beyond hinterlands, there are peripheries and rearlands. The use of these terms necessitates the setting of borders in the geographical environment. We believe that without these definitions

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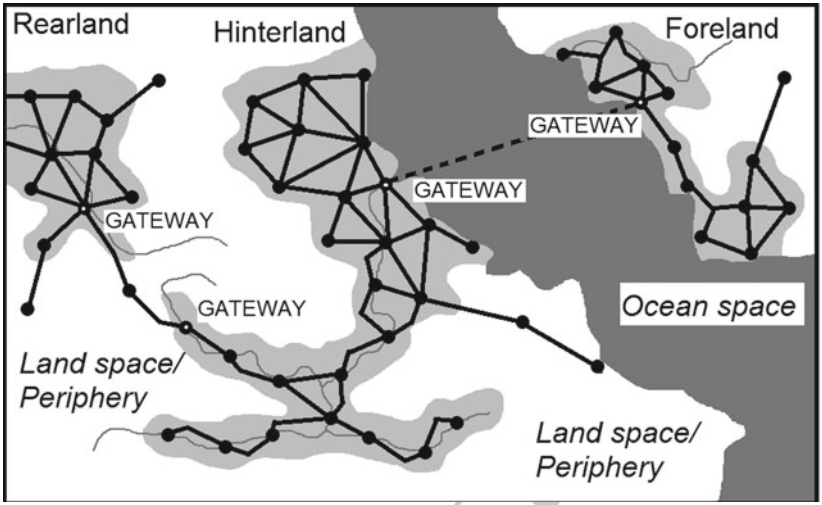

Fig. 1.1 Foreland, hinterland, rearland and gateway (*Source* The authors' elaboration)

of space, the dynamism and shifting character of urban logistics networks cannot be traced.

Likewise, the existing theoretical terminology of nodes and cities is insufficiently descriptive. In describing networks, we require more terms to reflect the existing diversity. We propose first to tag the nodes with terms that describe their orientation and function, such as *relais*, *junctions, crossroads, bottlenecks, transshipments*, *terminus, distribution centres, or industrial centres.* We also suggest adding adjectives to the nodes in order to clarify their functions. For example, rather than calling a node or a city a simple gateway, it helps to define it as an intermodal gateway, continental gateway, or maritime gateway. It is also helpful to combine several node activities into a description to further explain the functions of the node, such as with 'intermodal / bottleneck gateway and production centre.' In this way, it is possible to cope with the existing diversity. We have named this process *urban adjectivation.* Two essays in the present volume, Chapter 4, by Michael-W. Serruys, and Chapter 5, by Giovanni Cristina, deal extensively with this adjectivation, mainly from the perspective of transport.

Bypassing and Intermodality

Naturally, these terminologies of space change with the scale. An important gateway in a provincial system might be completely irrelevant to a world system. Most of the chapters in this book deal with regional-scale networks within a country. Yet as we will later describe in further detail, we adopt a methodological strategy focusing on games of scale (Revel, 1996), looking at smaller cases to develop a model that can be tested on larger gateways or vice versa and using different cases to highlight the variance of possible configurations and the dynamics of urban logistical scale in history. In fact, the scale itself changes over time, following technological, economic, and social transformations. Space appears to be more related to the time spent crossing it than to physical distance. The space one can reach within an hour changes drastically with innovations in transportation and distribution, and the relationship between physical flows and information flows is also affected by different technological paradigms.

Over the last two centuries, for instance, means of transportation and distribution have become increasingly concentrated in single cities. This process usually involved the bypassing of the city as a result of the discrepancy between the effort necessary to create more efficient and direct connections and the growing complexity of the gateway city's functions and services. In early modern times, goods that flowed from producer to consumer generally passed through a multitude of nodes:

$$\text{Producer} \rightarrow \text{A} \rightarrow \text{B} \rightarrow \text{C} \rightarrow \text{D} \rightarrow \text{E} \rightarrow \text{Consumer}$$

With the elimination of middlemen brought about by the railways and other factors related to industrial revolutions, some nodes were bypassed, which resulted in a streamlined flow:

$$\text{Producer} \rightarrow \text{A} \rightarrow \text{E} \rightarrow \text{Consumer}$$

Nodes B, C, and D were bypassed in this example. Consideration of bypassing is essential in describing the historical development of urban logistics networks. In fact, bypassing is closely associated with urbanization, deurbanization, centralization processes, and the emergence of mega-cities.

At the same time, bypassing is again a matter of divergence between the logistics and urban systems over time, as mentioned above. With the coming of railways, a divergence has occurred more and more between the

logistics system and the urban system. We are well aware of this impact, and this book shows how urban logistics networks change before and after the arrival of railways by carefully describing the process of bypassing. We are not arguing that the arrival of railways completely transformed prior urban logistics networks. Rather, our book attempts to connect the networks before and after by showing changes. In many ways, the railways, especially high-speed trains bypassing a multitude of nodes, foreshadowed the coming of aeroplanes, which bypass even more nodes by flying over them. The physical network has become, in a certain way, non-physical. The emergence of mega-cities can be described this way from a logistics point of view. Looking at the historical process of bypassing offers a way to connect the past to the present and opens up a discussion of the networks made by different modes of transportation.

Indeed, a good starting point is to take into account how different modes of transportation intertwined in the past. By following the flow of goods and people through different means of transportation, we identify intermodality as a crucial element influencing the characteristics of a node and carefully explore how that node and its networks change as a result. Intermodality can be both an asset and a problem for the development of a gateway node. Chapter 9, by Giovanni Favero, elaborates on these ideas, adopting a definition of the gateway as a node of intermodal exchange to shed light on the relationship between changes in transport technology and organization and the structure of the urban network, focusing on the case of the Venetian region and the impact of the railway on its urban hierarchy.

A gateway is a connecting point between the hinterland and the external world, and passing through it usually implies a change in the modality of transport. This is most evident in the case of port cities, but it can also be found in inland gateways such as transport hubs, where flows are coordinated and organized, or in market centres, where goods pass from hand to hand. Considering intermodality as an inherent feature of gateways allows us to better understand the implications of the above-mentioned tension between the efforts needed to make the flow of goods and people more efficient and the growth of urban functions and services around the intermodal bottleneck. From this perspective, it is indeed possible to identify the structural determinants of urban hierarchy within the historical constraints of the prevailing technology, economics, politics, and social organization. It is also possible to see how a change in one or more of these elements causes a reconfiguration of the entire structure by maintaining, altering, or dismantling its shape.

Shapes of Urban Logistics Networks

The final fields that need refinement and exploration in the spatial settings of urban network theory are the shapes of the system and network. Logistics would give every urban system, represented by nodes, a specific shape. Although studies acknowledge that combining the mapping and detecting of network shapes is a powerful tool for explaining urban systems and networks, these shapes are not thoroughly explored in historical cases. In particular, the dynamism of the shapes—both their creation and dissolution—should be pursued to make urban network theory a useful tool for further comparing cases. From this perspective, we pick up the most representative three shape types of urban systems—*dendritic*, *polycentric*, and *corridor*—and discuss their evolution (Fig. 1.2).

The term *dendritic* is typically used to describe water streams or pipeline networks and is not necessarily familiar for describing an urban network. Since we have set the flow of goods as our primary focus for urban logistics networks, however, we can often detect a dendritic shape in the analysis.

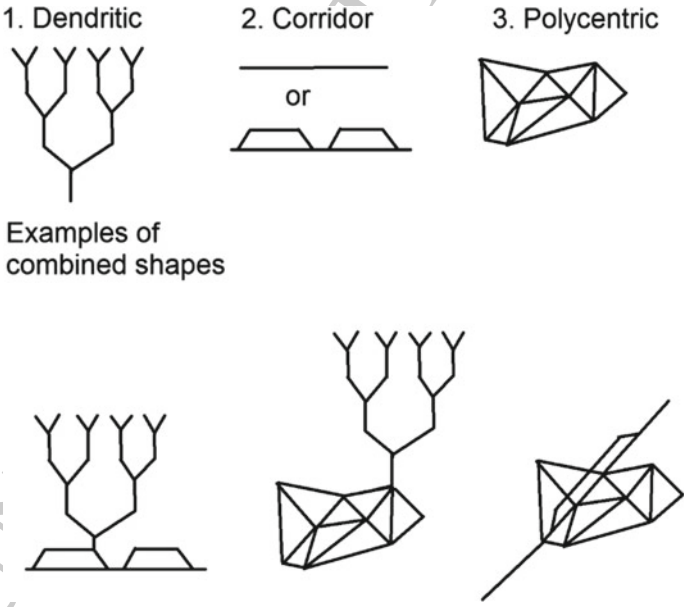

Fig. 1.2 Shapes of urban logistics network (*Source* The authors' elaboration)

The dendritic shape was used by de Vries (1984), and dendritic shapes are the most representative shape in historical studies of urban network theory. Careful analysis of maps and a cumulative investigation of distribution or transport records are needed to draw out the shape for a region. For example, in addition to the destinations and transit points for the flow of goods, scholars must have a fair grasp of the frequency and velocity of the modes of transportation to make the model coherent. Time schedules and travel journals are helpful as sources.

The second shape, *polycentric*, is a structure where nodes of similar size disperse within a region. The regions discussed in this book are areas in which small cities prevail, and they often have polycentric characteristics. The existence of relatively similar-sized cities is the complete opposite of what central place theory proposed. Thus, their relationships and formations should be analyzed carefully. Urban studies have shown that small cities are more dependent on networks than larger cities (Bell & Jayne, 2009). A polycentric urban region does not necessarily form an urban network (Meijers, 2007, p. 145), and the polycentric shape might, in fact, be a reflection of the lack of a network. Only when spatial organization operates relationally and there are certain divisions of functions among the polycentric nodes can we define them as having the features of a polycentric urban network. This book deals with this tension historically. Historical cases contribute to uncovering the reasons for the processes a region took to gain a polycentric shape and to learning if there were network relationships forming among the nodes.

The *corridor* is a well-researched concept in analyzing the connections in transport infrastructures. Corridors are also used in broader research fields, such as urban studies or economics. A corridor identifies developments happening around an axis, which is usually represented by a main communication or transport line (Yarwood, 2006). The present volume applies this concept extensively to the eighteenth and nineteenth centuries. Tracing the shape of corridors allows us to detect dynamic regional transformations. For example, attention on the making of corridors can highlight the process through which a new vertical axis triggers the nodes in the middle of an urban logistics network with minor hinterlands gaining stronger gateway functions because of the nature of points of access to the new line. This process, by transforming the line into a regional belt, may have different results. In some cases, the function of the weaker terminal of the new horizontal axis may be further diminished, finally making the middle region a part of the extended hinterland of the more important gateway

terminal. In others, the region may maintain a multi-gateway structure. The outcome depends on many other factors, in part related to the shape of the network, as on the presence of other corridors converging into one gateway. This can be seen in Milan during the nineteenth century, which is connected to the wider historical context and its changes.

These three shapes are distributed evenly throughout the chapters of this book (see Table 1.1). We have divided the chapters into four sections. In the second part, Changing Shapes of the Urban Network, the most representative examples of shapes are shown. In Chapter 3, Sandrine Lavaud shows the operation of complicated distribution networks relating to wine, using elaborate dendritic shapes. It is also important to note that these shapes can be used in combination. Chapter 4 (by Michael-W. Serruys) and Chapter 5 (by Giovanni Cristina) highlight how the dynamic making of the corridor interacts with the formation of the polycentric and dendritic urban system shapes of the region. In Chapter 6, Agustina Martire illustrates the railways' establishment of a corridor between the cities of Belfast and Dublin.

The third part traces the evolution of a single event: the regional formation of Northern Italy. The three Chapters 7, 8, and 9 cover three related cases. Chapters 7 and 8 explore trade relations as well as the demographic, economic, and monetary history to explain the emergence of an economic region centred on Milan in spite of its changing political borders over time. Chapter 9 follows the transformation of the bordering Venetian region, which became polycentric in the first half of the nineteenth century and then gravitated towards Milan following the construction of a railway line connecting the two cities. The formation of a Northern Italian urban network highlights the interconnected roles of transport innovations, political decisions, and economic factors.

Users of the Networks

Urban network theory leaves much to explore in terms of how to include humans in its studies. Within the agency/structure debate that is fundamental to the social sciences, urban network theory, as part of network analysis, is positioned more at the latter pole: the non-individualist who sees structural settings and institutional forces as directing the actions of human beings. Network analysis can go so far as to reject the attributes of actors both individual and collective (Emirbayer & Goodwin, 1994, p. 1414). Historical studies of urban networks can also focus mainly on the

Table 1.1 Scale, city/region and shape dealt in the chapters of this book

Chapters	*Scale*	*City/region*	*Urban network shape*
Part I: A Single Gateway			
Chapter 2 Hallen	Regional	Gothenburg	Dendritic
Part II: Changing Shapes of Urban Networks			
Chapter 3 Lavaud	Regional	Bordeaux	Dendritic
Chapter 4 Serruys	National	Belgium	Corridor polycentric
Chapter 5 Cristina	Regional	Catania	Corridor dendritic
Chapter 6 Martire	Regional	Dublin-Belfast	Corridor
Part III: The Making of a Regional Network			
Chapter 7 Tonelli	Regional	Milan	Polycentric
Chapter 8 Mocarelli	Regional	Milan	Polycentric
Chapter 9 Favero	Regional	Venice	Corridor
Part IV: Using the Network			
Chapter 10 Pourchasse	Regional & continental	Brittany	Corridor dendritic
Chapter 11 Scheltjens	Continental	Russia and London	Corridor
Chapter 12 Sugiura	Regional	Friesland	Polycentric

Source The authors' elaboration

network itself, explaining the relational operations between its nodes (or cities). However, this approach has its drawbacks, especially when applied to the urban logistics network that focuses on trade and transport flows. This approach is easily confused with setting cities themselves as the actors of networks, thereby implicitly providing strong agency to the cities and especially their policymakers and elites. This is a pity because it undermines a trend in urban studies that places great emphasis on involving the very urban inhabitants who have historically been neglected, such as women and minorities (Simonton & Montenach, 2013). It is important to understand the differences between the initial methodological stances and approaches that privilege urban agencies and urban networks and to not confuse the two. This difference, however, does not mean that the two approaches cannot complement each other. The same urban historian may adopt an urban agency approach for one article and network theory for another, and we should develop the concept of the urban logistics network in a direction that enhances that possibility.

In addition, network analysis evolved in a way that transcended macro–micro levels in scale. In other words, analyzing networks enables researchers to fluidly converse on various scale levels. Yet we should consider the fact that, in complementing much-needed empirical and historical cases of urban logistics networks, our essential approach is bottom-up. The focus on the logistics aspects points towards source analysis at the micro-level. It is essential to find a way to involve more micro-level analysis of the larger picture of networks. From this perspective, we adopt a micro-historical approach in the book, conceiving 'the cases we study not as "examples" but as "experiments." Examples confirm a hypothesis through accumulation, with the obvious limitations this method entails. Experiments allow us to change a particular interpretation' (de Vivo, 2010, p. 392). Obviously, as 'the ability to reproduce the causes is excluded' in history, an experimental approach requires attention to 'even the smallest dissonances' as 'indicators of meaning which can potentially assume general dimensions' (Levi, 1992, p. 110).

Reflecting these issues, this book presents a fourth section, Using the Networks. We aim here at reorienting historical inquiries towards the role of the *users* of these networks: from merchants shipping their goods through one route or the other to passengers choosing how to reach their destinations, including the state and other political authorities, and also many others who are on much smaller scales, as interested users who may intervene

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to modify the infrastructural network. *User* is not a familiar word in historical urban network studies, particularly for pre-modern periods. However, in network studies of transport, innovations, or information technology, users are becoming indispensable to understanding the configuration and operations of the network. To what extent we can apply this to the past is still a question to explore. Nevertheless, the focus on users makes it possible for historians to reintroduce *contingency* (or Vidal de la Blache's and de Martonne's [1926] geopolitical *possibilisme*), as well as reconsider the place of human agency in the network analysis, while avoiding the pitfalls. The fourth sequence, Using the Network, includes three chapters that illustrate how urban logistics networks were used. Each chapter has a different perspective, focusing on merchants (Chapter 10), navigators (Chapter 11), and small-city entrepreneurs (Chapter 12). Chapter 10, by Pierrick Pourchasse, sheds light on the flaxseed trade between the Baltic and Brittany, linking two urban networks and two market organizations. This chapter details how merchants at the main gateway for trade, the intermediating organization points, and the receiver's end utilized the network. In particular, the chapter shows how a third party, the Hanseatic port of Lübeck, could operate and shape the flow of trade by exploiting the network. Chapter 11, by Werner Scheltjens, tracks a shipment of iron between St. Petersburg and London through an analysis of a loadbook. This microscopic time analysis allows us to see the urban logistics network from refreshing perspectives, which are synthesized as characteristics of pre-industrial logistics. Chapter 11 helps us to understand the crucial role of port cities as providers of manpower, sustaining the urban logistics network. Chapter 12, by Miki Sugiura, focuses on one polycentric region of Friesland and attempts to discover why polycentricity was maintained by analyzing the transport systems of several of the nodes. This essay shows the dynamic use of the city canal by one family for more than five generations.

Conclusion

We have described the formation of urban network theory in the 1980s and 1990s and covered the urban models that preceded and influenced the theory. We have also defined the urban logistics network and pointed to several gaps in the literature, which are in three areas: the spatial terminologies and scale, the shapes of networks, and the agency of networks. The editors do not claim to have established a new theory; the aim of this book is, once again, to provide a toolbox for other researchers. Each of the four

parts of this book (I. Single Gateway, II. Changing Shapes of the Urban Network, III. The Making of the Regional Network, and IV. Using the Network) includes empirical case studies that can be used as comparative benchmark tools for other researchers to model their own urban networks. Providing synthesis of the characteristics of urban logistics networks at different phases, such as pre-industrial and modern, is beyond the scope of this volume, but each of our chapters deals with transitions in its own ways. This book is neither a comparative urban study in itself. It does not compare the examined regions with each other, or with other parts of the world. We nevertheless believe that the perspectives and variables we provide are useful for enhancing the historical research on urban networks, and we hope our volume will inspire a large body of new research.

Finally, this book highlights that cities are important not only because more than half of humans now live in them, and more will come to live in them, as we noted in the opening of this chapter, but also because of their history. Although each city has its own glorious past when their names shone in history, cities are collectively ambivalent. There is no doubt that cities have made a significant difference in human history. Major economic and political revolutions, as well as technological innovations, would not have occurred without the existence of cities, even if not all of them were initiated in cities. Cities are collectively distinguishable, sharing cultural, economic, and political features and sometimes setting united fronts against the rural. However, none of these were intended or planned with a pair of invisible hands.

In this book we searched for the presence of systems, networks, and even equilibrium among cities. Scholars have been able to construct theoretical models, but testing them against empirical cases demonstrate ameliorations, tensions, and demolitions of the expected relationships. In particular, as far as the relationship between the cities as nodes and the logistics networks connecting them is concerned, it is clearly demonstrated from the case studies presented in this book that a city can develop a coordinating rather than a subordinating role with respect to their hinterland and other cities. Obviously, such definitions are only the two tails of a range involving different proportions of coordination and subordination, and, most importantly, such roles change in time following the phases of regional developments. In the first case (coordination), however, cities provide much-needed services to maintain and foster the activities going on in the whole area, without attracting the vital functions of such activities into themselves. In the latter one (subordination), cities convey not only services for coordination but also attract such important economic activities.

It is tempting for historians dealing with early modern and modern Europe, where the Industrial Revolution was the most impactful transformation in this span of time, to identify a general cycle going from coordination in proto-industrial settings, to subordination (with the rise of new cities) following industrial development, and finally back to coordination with the growth of services, the spread of industrialization in the whole area, and eventual de-industrialization (see for instance Bairoch, 1988). It is however necessary to highlight that this evolution is related to specific technological paradigms, intertwining with political and social transformations that hindered, neutralized or enhanced their effects on different regions. In other words, such cycles are historically contingent and model trajectories exist only in the eye and in the mind of the historian. The research on cities in this book on urban logistics networks keeps us aware of how much we can and how much we cannot know and explain. The choice of half of the human beings to inhabit cities is certainly a reflection that, despite it all, cities work. However, there is much left to discover about cities and the spaces they created.

References

Bairoch, P. (1988). *Cities and economic development: From the dawn of history to the present*. (C. Braider, Trans.). Chicago, IL: University of Chicago Press.

Bell, D., & Jayne, M. (2009). Small cities? Towards a research agenda. *International Journal of Urban and Regional Research, 33,* 683–699. https://doi.org/10.1111/j.1468-2427.2009.00886.x.

Christaller, W. (1933 [1980]) *Die zentralen Orte in Süddeutschland. Eine ökonomisch-geographische Untersuchung über die Gesetzmäßigkeit der Verbreitung und Entwicklung der Siedlungen mit städtischer Funktion*. Darmstadt: Nachdruck der Ausgabe von.

Christaller, W. (1966). *Central places in Southern Germany*. (C. W. Baskin, Trans.). Englewood Cliffs, NJ: Prentice-Hall.

Clark, P. (Ed.) (2013). *The Oxford handbook of cities in world history*. Oxford: Oxford University Press.

de Vivo, F. (2010). Prospect or refuge? Microhistory, history on the large scale: A response. *Cultural and Social History, 7,* 387–397. https://doi.org/10.2752/147800410X12714191853427.

de Vries, J. (1984). *European urbanization 1500–1800*. London, UK: Methuen.

Emirbayer, M., & Goodwin, J. (1994). Network analysis, culture, and the problem of agency. *American Journal of Sociology, 99,* 1411–1454.

Fujita, M., Krugman, P., & Venables, A. J. (1999). *The spatial economy: Cities, regions, and international trade*. Cambridge, MA: MIT Press.

Fujita, M., Ogawa, H., & Thisse, J. (1988). A spatial competition approach to central place theory: Some basic principles. *Journal of Regional Science, 28,* 477–494. https://doi.org/10.1111/j.1467-9787.1988.tb01369.x.

Hohenberg, P. M. & Hollen Lees, L. (1985). *The making of urban Europe, 1000–1950* (Rev. ed. 1995). Cambridge, MA: Harvard University Press.

Krugman, P. (1991). Increasing returns and economic geography. *Journal of Political Economy, 99,* 483–499. https://doi.org/10.3386/w3275.

Krugman, P. (1993). On the number and location of cities. *European Economic Review, 37,* 293–298. https://doi.org/10.1016/0014-2921(93)90017-5.

Lesger, C. (2001). *Handel in Amsterdam ten tijde van de Opstand. Kooplieden, commerciële expansie en veranderingen in de ruimtelijke economie van de Nederlanden ca. 1550–ca. 1630.* Hilversum, The Netherlands: Uitgeverij Verloren.

Lesger, C. (2006). *The rise of the Amsterdam market and information exchange: Merchants, commercial expansion and change in the spatial economy of the low countries, c. 1550–1630.* (J. C. Grayson, Trans.). London, UK: Routledge.

Levi, G. (1992). On microhistory. In P. Burke (Ed.), *New perspectives on historical writing* (pp. 93–113). Philadelphia, PA: Pennsylvania State University Press.

Lösch, A. (1940). *Die räumliche Ordnung der Wirtschaft.* Jena, Germany: Gustav Fischer.

Meijers, E. J. (2007). *Synergy in polycentric urban regions: Complementarity, organising capacity and critical mass.* Amsterdam, The Netherlands: IOS Press.

Mizushima, T., Souza, G. B., & Flynn, D. O. (2014). *Hinterlands and commodities: Place, space, time and the political economic development of Asia during the long eighteenth century.* Leiden, The Netherlands: Brill.

Reilly, W. J. (1931). *The law of retail gravitation.* New York: Knickerbocker Press.

Revel, J. (Ed.). (1996). *Jeux d'échelles: la microanalyse à l'expérience.* Paris, France: Seuil/Gallimard/Éditions de l'EHESS.

Rimmer, P. (1967). The search for spatial regularities in the development of Australian seaports 1861–1961/2. *Geografiska Annaler: Series B, Human Geography, 49*(1), 42–54. https://doi.org/10.2307/490455.

Sassen, S. (1991). *The global city: New York, London, Tokyo.* Princeton: Princeton University Press.

Simonton, D., & Montenach, A. (Eds.). (2013). *Female agency in the urban economy: Gender in European towns, 1640–1830.* London, UK: Routledge.

Vance, J. E. (1970). *The merchant's world: The geography of wholesaling.* Englewood Cliffs, NJ: Prentice-Hall.

Vidal de la Blache, P., & de Martonne, E. (1926). *Principles of human geography.* New York: Henry Holt & Co.

Weigend, G. G. (1958). Some elements in the study of port geography. *Geographical Review, 48,* 185–200. https://doi.org/10.2307/212130.

Yarwood, J. R. (2006). *The Dublin-Belfast development corridor: Ireland's mega-city region?* London, UK: Ashgate.