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MAPPING TRANSNATIONAL PLANNING HISTORY IN PORT CITY REGIONS – LONDON, ROTTERDAM, HAMBURG

Carola Hein

Port city territories are key hubs of globalization. They are locations where changes taking place across the globe—whether political, economic, technical or environmental—make an imprint on space and institutions and where local and global stakeholders interact directly. Planners play an important role in that encounter as they need to negotiate the global and local interests in ports, waterfronts and the city region at large. Through their planning, they provide port and city spaces that accommodate ships of evolving sizes and facilitate the storage of diverse goods, their transformation and their distribution to or collection from the hinterland. As planners build for global challenges in their home countries or elsewhere, they serve as agents of transnational practice, regularly negotiating between foreign practices and local applications. Port city territories, as places where global flows of goods and people leave a mark in space, are ideal places to study transnationalism and transnational urbanism as well as transnational practices in planning history. Investigating how global processes shape similar locations in different ways shows how planners have responded to similar shipping-related challenges.

Following a brief examination of the term transnational urbanism, this chapter argues that port city territories provide unique opportunities to explore the role of planning through the lens of maritime exchange and global commodity flows, in line with the concept of the PortCityScape (Figure 3.4.1). Considering port city territories as an interconnected network of spaces and institutions allows for a study of planning history as a facet of transnational urbanism on the sea-land continuum in a way that goes beyond comparative analysis. To better understand the impact of these historical processes on diverse places we need new tools to capture the intersection between global and local processes. This chapter uses historical geospatial mapping to illuminate the transnational planning histories of port cities around the North Sea, London, Hamburg and Rotterdam, where planners have engaged in various ways with globalization, technological innovation and migration.[1]

Port City Territories as a Focus for the Study of Transnational Planning History

"Transnational urbanism" has become a common term among social scientists and historians investigating flows of people and commodities across national borders and the relationship between these flows and urban spaces. Coined to balance the concepts of "globalization" and

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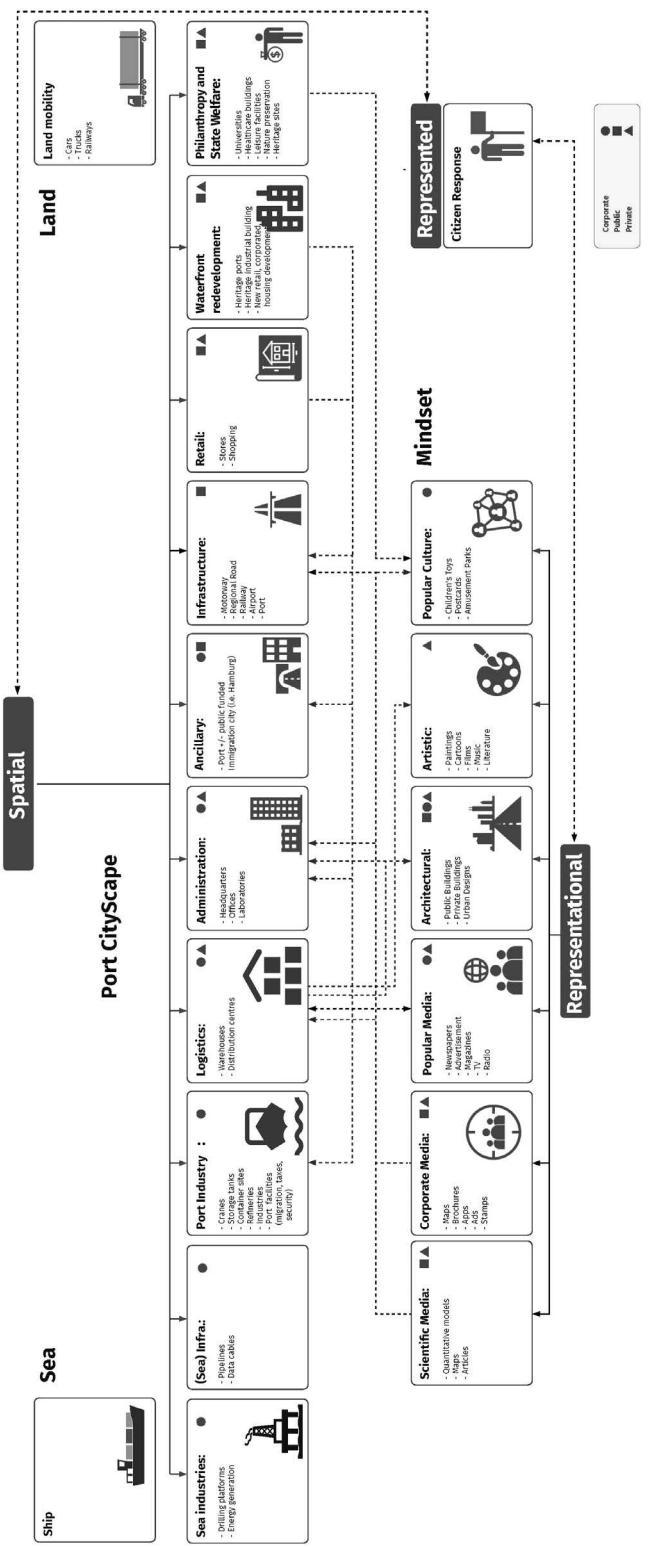

FIGURE 3.4.1 The PortCityScape (Carola Hein 2019a)

"global cities", the term "transnational urbanism" aims to reintroduce the power of national politics and players. Political scientist Michael Peter Smith used the term to distinguish processes of globalization from globalization as a structure framing the socio-spatial conditions of localized actors (Smith 2001). Critics of Smith's work point to a lack of concrete evidence and case studies (Stanley 2001; Binnie 2003). Research on port city territories can provide a case study of transnational urbanism by focusing on planning history and the crossing of the sea-land border.

Smith's call for a multiscalar approach to the study of migration and the exchange of cultural practices is part of a larger body of literature on transnationalism, transnational history, and transnational planning history that includes commentaries by major writers in urban studies (Clavin 2005; Pierre-Yves Saunier 2013). Much of the literature has focused on transient people, institutions, and spaces rather than on physical structures or built environments, including their planning, that resulted from passage across national boundaries. It is this physicality and its production—including the varying roles of actors with training in design professions and with different levels of power—that demand attention.

Planning historians have long been aware of the importance of planning ideas that cross borders and many authors have written extensive case studies. Key figures include Anthony King, who has reflected on the construction of transnational planning histories at various moments in his career. He has pointed to the shifts in theoretical and historical paradigms underlying such an analysis, as well as the difficulty of accessing archives spread around the globe, and the challenges of the language and cultural or national belonging of the scholar writing the analysis (King 1976, 1977; King 2003). Stephen Ward has attempted to systematize the exchanges of planning ideas (Ward 1998; Ward 2002). Themes of urban policy transfers and planning models are at the heart of research by Andrew Harris and Susan Moore, and the international exchange of planning ideas is the theme of the edited volume by Patsy Healey and Robert Upton (Healey and Upton 2010; Harris and Moore 2013). Other scholars, including the late Anthony Sutcliffe, Pierre-Yves Saunier, and Joe Nasr and Mercedes Volait have helped to refine this work (Sutcliffe 1981; Nasr and Volait 2003; Pierre-Yves Saunier and Ewen 2008; Iriye and Saunier 2009). The transfer of planning ideas is part of wider transnational exchanges, as demonstrated in Dirk Schubert's investigation of the neighborhood unit and its transatlantic exchange in Jeffry Diefendorf and Janet Ward's book on transnationalism and the German city (Schubert 2014). Port cities have been explored as hubs of cosmopolitanism and migration, but a methodology to compare planning in these diverse locations with an integrated discussion of formal and informal planning activities and their collective impact on urban transformation remains to be written.

Globalization depends on maritime networks and port city territories are key hubs, where global flows meet local territories. International business communities and the commodity flows they create have long reshaped urban spaces. Elites in port cities have changed ports, warehouses, administration buildings—urban form itself—to accommodate specific commodities and new sizes and forms of ships. Elites who traded these commodities set up their own facilities for housing, leisure, and religious purposes. People associated with trade in general, from business workers to sailors, created their own districts, such as Bryggen, the Hanseatic district in Bergen, Norway. These migrants engaging in transnational trade have long depended on local experts to translate their needs into built form. We can see the palimpsestic effects of business communities and commodity flows on urban built form in many port cities where earlier forms of trade set the stage for later ones. The Dutch company Pakhuismeesteren, for example, was in charge of tea and coffee storage. In the mid-19th century, they began storing petroleum. Over time, the company has grown into the petroleum company VOPAC.[2]

Global corporations are powerful actors, spreading ideas about urban form and planning practices in both intended and unintended ways, employing their own planning agents, or, through their presence and power driving local developments. Given their potentially huge size

and economic importance, their imprint on the built environment can be much more consistent and much larger than that of individuals. Multinational companies, which are vectors of globalization, use standardized forms, the container being a recent example. Hamburg-Süd, China Shipping, and Maersk are just some examples of logos that register the global influence of networked economic players; these signs are function-driven similarities rather than planned convergences; they link urban spaces around the world, claiming them for commerce. How local planning responds to the built expression of globalization, from port planning to infrastructures and how the presence of global economic forces transforms local planning practices across spatial and temporal scales is an extensive area of research. Geospatial mapping can lead to a better understanding of the palimpsestic condition of planning in port city territories.

Mapping Port City Territories for Advanced Understanding of Transnational Urbanism and Planning History

The particular characteristics and similarities of ports, cities and their territories around the world have attracted the attention of numerous researchers. Geographers and economists have developed modeling tools and visualizations based on quantitative data on shipping networks (e.g. Verhetsel and Sel 2009; Ducruet, Cuyala and El Hosni 2017). They have also carefully studied the intersections between ports and cities and their territories, relying primarily on quantitative data but also paying some attention to spatial patterns and physical locations. These models are particularly appropriate for understanding past trends and predicting future ones. Historians and planners have also paid a lot of attention to port city research, creating a large body of literature on specific port cities, often with a perspective from the city, focused on cities and landside developments and on national differences. Each of the authors in this field follows their own methodology and mostly qualitative approach, making it difficult to assess the evolution of these cities and their particular patterns in comparison to one another (to give some examples, (Broeze 1985, 1989; Laar 2000; Meyer 1999; Kokot *et al.* 2009; Desfor *et al.* 2010; Hein 2011; Schubert 2011; Hein 2012; Meyer and Nijhuis 2014; Hein 2016a; Porfyriou and Sepe 2016; Schubert 2018). Analytical links between the two types of literature are missing, as demonstrated by the absence of shared conferences and publications (Hein 2016b).

The desire to visualize changing shipping networks and to understand the similarities and particularities of port cities and their evolution over time has inspired geographers to develop numerous models. Economic geographers have visualized datasets through geometrical shapes interconnected with lines of different thicknesses to make it possible to compare shipping networks, port city relations and their development over time. The literature in the field of economic geography on port city relations is vast, with important contributions to port geography (to name just a sample: (Rodrigue, Comtois and Slack 2009; Notteboom, Ducruet and de Langen 2009; Wang *et al.* 2007). Often the goal of these publications is geared toward policymaking and economic development assessment. In "Building a Bridge Between Port and City", Zhao and colleagues show through statistics that the port still matters to the city (Zhao *et al.* 2017) The work of the French geographer Cesar Ducruet is emblematic of this approach (Ducruet, Cuyala and El Hosni 2017). His visuals clearly identify shipping networks in relation to specific ports and city locations, exploring, for example, interrelationships between the size of the port and the size of the city (and its region), as well as the relevance of a port within the global system (Ducruet, Cuyala and El Hosni 2017).

As urban planning became a profession in the late 19th and early 20th century, mapping as a way of studying urban territories emerged as a scientific discipline. It became a way to systematically combine spatial and social data and to uncover health issues, social problems, or land use challenges. These uses of mapping developed hand in hand with the professionalization of urban and spatial planning (Hein 2018). To gain an initial sense of how such mapping can aid an

understanding of planning history from a comparative perspective, a team of researchers in the Chair History of Architecture and Urban Planning at Delft University of Technology has started to build on existing research and develop a methodology for comparative historical geospatial investigation. We are specifically focusing on port cities because they exemplify complex spatial development, long-term investments, intersecting institutional realms, and overlapping flows of goods, people, and ideas (Hein and van Mil 2019).

Maps and mapping allow public and private stakeholders to understand spatial contexts, environmental changes, institutional settings, and cultural implications and help us understand planning history from a networked rather than a comparative perspective. Recent innovations involving big data, GIS-based research, and digital datasets offer new opportunities to use maps and mapping to study spatial and cultural elements. Few geospatial tools or research methods currently exist to analyze and represent the palimpsest of spaces, social interactions, and cultural practices of cities and the evolution of particular processes over time. A methodology is needed that complements quantitative assessments of economic and logistic aspects of a particular area and enables the analysis of spatial and cultural patterns (Hein and van Mil 2019). Historical geospatial mapping can help us understand how people have changed cities and institutions over time and in conjunction with complex economic, political, social, and cultural transformations. It can serve as a methodology for transdisciplinary and transnational research helping social scientists and spatial and humanities scholars to consider both quantitative and qualitative aspects of life and work in a spatial context and it can serve planners and policy makers. To facilitate discussions among different stakeholders and to bring together different perspectives, we propose mapping at a scale that helps identify challenges and opportunities in the fuzzy territories of overlapping spaces and institutions (Hein 2019a).

The proposed data wheel (developed by a group working on Digital Humanities at Delft University of Technology and notably in the Chair History of Architecture and Urban Planning) tentatively metaphorically called the Datawheel (Figure 3.4.2), is a methodology designed for the continuous process of collecting, preparing, analyzing, visualizing, and sharing data (Hein and van Mil 2020; Hein, van Mil and Azman Momirski 2020). The name emphasizes the circular quality of the approach, which allows for the process to consistently add new knowledge and integrate findings from one round of analysis into the next, using historically grounded investigation and geospatial mapping as a basis for informed planning and policy-making, education, outreach, and training.

The method consists of five steps, specifically:

1. Definitions, collection, assessment
2. Preparation of the collected data
3. Analysis of the collected and organized data
4. Data visualization
5. Sharing, dissemination, and pilot studies

While geographers have made important steps toward analysis (providing opportunities for global comparison of economic patterns, shipping etc.), there is no methodology for the analysis of port-city relations from a spatial perspective. As a result, many aspects, particularly spatial, social, and cultural elements are insufficiently analyzed. Depictions of concrete physical forms are often made for select locations, as part of individual urban investigations, but they are difficult to compare. Once we go beyond these abstractions, each of these locations shows complex patterns and intricate socio-spatial particularities. To better demonstrate the potential role of mapping in reconceptualizing the spatial and institutional dimension of port connections and to identify places of conflict and opportunity, members of the Chair of the History of Architecture

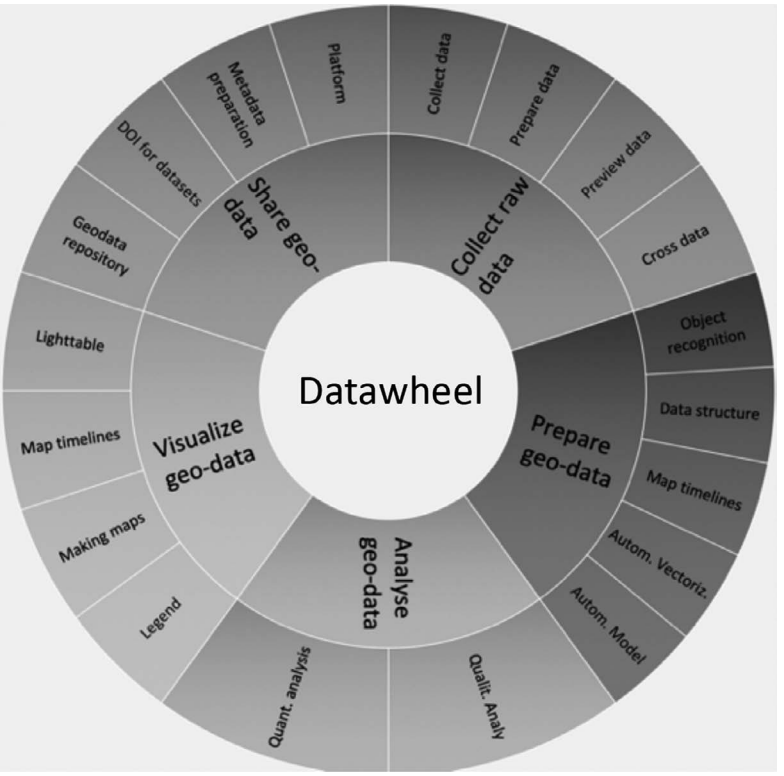

FIGURE 3.4.2 The Datawheel methodology (by Carola Hein and a group working on Digital Humanities at Delft University of Technology).

and Urban Planning at TU Delft and the Leiden Delft Erasmus PortCityFutures program have started focusing on a shared body of water—the North Sea—as the foundation for a comparative research program (Hein, 2019), developing a methodology for historical and spatial analysis.

Case Study Research: Mapping the Planning History of London, Rotterdam, and Hamburg

Focusing on the select port cities around the North Sea allows us to establish and test the method's first steps through a comparative investigation of the interactions between port, city, and hinterland in three river-based port city territories: The Nieuwe Waterweg in the Netherlands, the Thames in the United Kingdom, and the Elbe in Germany. These port city territories are much larger than the cities situated near the ports of Rotterdam, London, and Hamburg. The area near the Nieuwe Waterweg includes the entire Randstad, including Amsterdam, Rotterdam, The Hague, Zoetermeer, and Utrecht. Together with Bremen and Bremerhaven, Hamburg forms the port city region of Elbe. The port of London has largely moved outside the historic city walls, but the decision makers have remained in the city, creating a huge port city region. For a close analysis of the three case studies, we collected similar types of historical maps for each of the three cities. We georeferenced this information and overlaid it with generic data on natural and manmade features and governance patterns in line with the Datawheel methodology.

Historical geospatial research through mapping allows us to identify key moments in urban and planning history (Figures 3.4.3 and 3.4.4). Together with Yvonne van Mil, we are currently

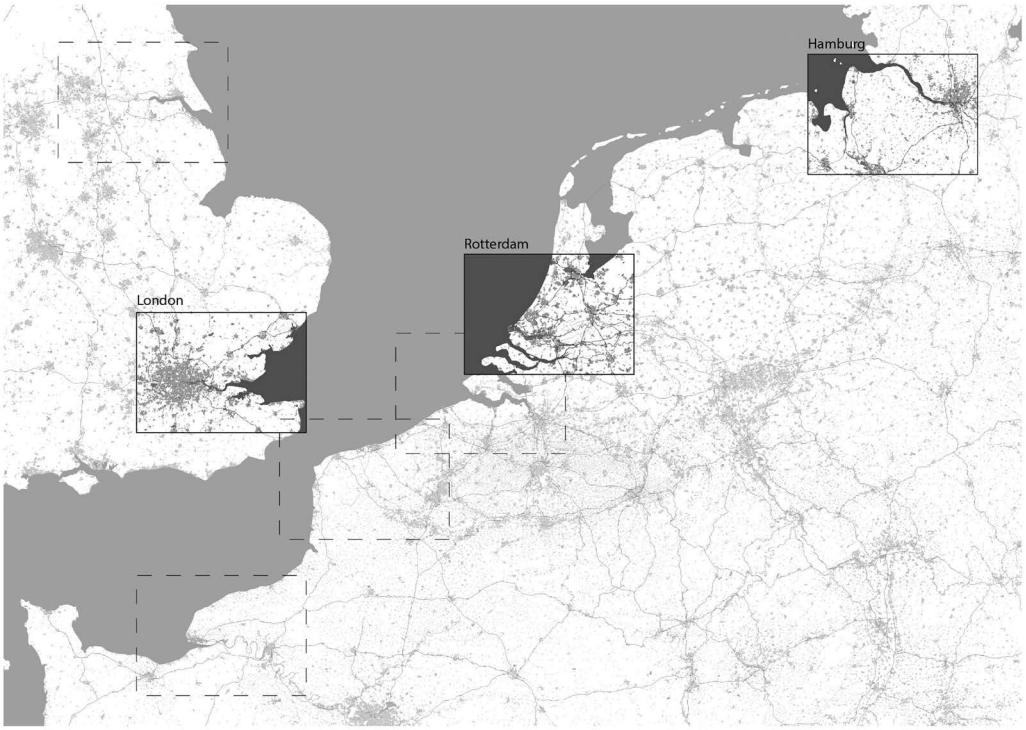

FIGURE 3.4.3 Research areas of the North Sea studied by the Chair of the History of Architecture and Urban Planning, with the case study of London, Hamburg, and Rotterdam highlighted and other potential case studies framed with a dashed line. Map by Yvonne van Mil based on Global Administrative Boundaries (2018), CORINE Land Cover (2016), and EuroGlobalMap (2017).

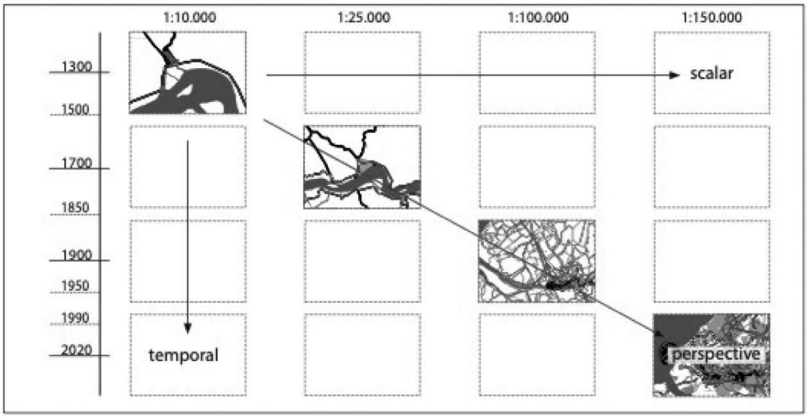

FIGURE 3.4.4 Conceptualization of different approaches to historical geospatial mapping and their usefulness for particular disciplinary approaches or questions. Figure by Carola Hein, Yvonne van Mil, Blanka Borbely, and Batuhan Özaltun based on Global Administrative Boundaries (2018) CORINE Land Cover (2016), and EuroGlobalMap (2017).

developing a methodology for mapping port cities (Hein and van Mil 2019). We chose to start our case study in 1300, when the Hanseatic League helped sustain the urban development of cities around the North Sea. We see the historic roots of urban planning in this long-term approach. We use steps of 200 years to capture major social, geopolitical, and economic changes, such as the Golden Age, starting in Flanders in the 15th century, shifting to Holland in the 17th century, and to England in the 18th century. We add more detailed information through steps over fifty years starting with the industrial revolution, when the introduction of new technologies and political systems and new insights on legislation on housing and urban planning spurred numerous transitions in cities. These transitions are represented through the years 1850, 1900, 1950, 1990, and 2020 (Figure 3.4.5).

When we consider a port city as part of a larger system—the region—we need to understand the economic, infrastructural, and social scale on which port cities operate. Port city territories are the result of the combined action of both natural and human factors, the local geography, the water system, and the soil conditions on the one hand, and the investment in coastal protection, port and hinterland infrastructure, and administrative centers on the other. As a result of urban growth and new defense infrastructure as well as bigger ships and increased shipping, the footprint of the port and the city has increased extensively. The individual locations' responses to these changes may be different, but their scalar impact is similar: all of them grow tremendously.

Planners needed to intervene in shaping the ports, cities and regions. In contrast to natural features, human-made features are more subject to change over time, as they are created and adapted to people's needs. For this reconnaissance, we focus on manmade features and we have limited categories of land use to industrial areas, port areas, built-up areas, and densely built-up areas (city center). The density, spatial distribution, and physical characteristics of urban settlements are important drivers of social and environmental changes at multiple scales, and therefore crucial for our research. Infrastructure networks, such as transport networks over water, land, and rail, as well as bridges, dykes, and defense systems are another important factor, creating conditions for settlements, economic activities, and mobility. We present the urban morphology in an abstract form, so that the level of detail matches the scale level and the available historical knowledge.

To study the interaction between port and city over time and to identify relevant moments of planning history, we choose the diagonal approach, which allows us to perform a comparative study of the spatial development of the three case studies to understand how port and city relationships have changed in terms of functionality, size, and location of the port in the city and what the role of planning has been. The overview notably includes infrastructure, land use, and institutional borders. As a result, we can see that after the emergence of planning as a discipline each location was the site of different planning approaches.

Planning decisions made in the 19th century created path dependencies that continue to influence planning for ports and cities today. With industrialization, new forms of transport, private actors, port companies, and some city governments created dedicated port areas separate from urban spaces in all three cities. Water access was a privilege largely dedicated to trade. Private and public companies created new land or carved water spaces into existing land. Rapid growth of trade, the emergence of petroleum as a fuel, and urbanization required port and city expansion. Specific patterns vary, but in every case, port spaces grew substantially and started to occupy land in the estuaries. In Rotterdam, the port expanded into one large port area, together with the port of Schiedam and 1886 annexed Delfshaven. In London, the port grew even beyond the administrative boundaries of the city. Key planning decisions concerning the location of the port, acquisition of land, the technology used for port infrastructure, the development of plans, their implementation, and the construction of a port take decades and the impact of the decisions

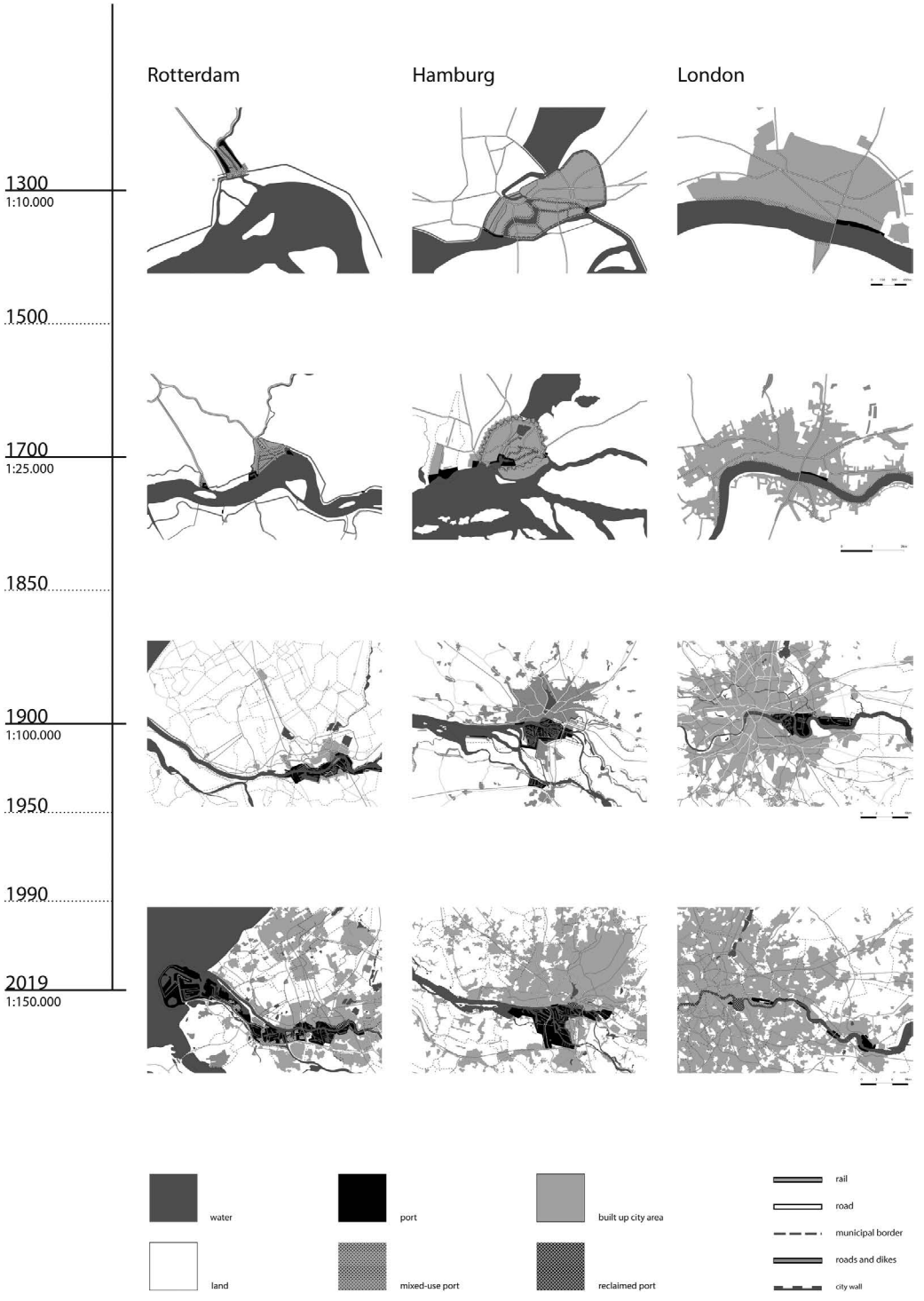

FIGURE 3.4.5 First draft for comparative geospatial mapping methodology, with a case study of London, Hamburg, and Rotterdam. Figure by Carola Hein, Yvonne van Mil, Blanka Borbely, and Batuhan Özaltun based on Global Administrative Boundaries (2018) CORINE Land Cover (2016) and EuroGlobalMap (2017).

can last for centuries. London opted for the construction of docklands, a choice that influenced urban reconstruction in the second half of the 20th century. Hamburg explored, but did not adapt, the London model and chose instead to construct a tidal port in the mid-19th century, which ultimately resulted in a different form of waterfront redevelopment. Decisions made at this time have continued to influence port city territories until today and they continue to determine future development. For example, the port authority of Rotterdam has been closely related to the interests of the municipality of Rotterdam since 1882. In order to keep the port within its boundaries, the city managed to annex, if not their entirety, parts of almost all the municipalities neighboring the estuary. By the end of the 20th century only Schiedam, Vlaardingen, and Maassluis had managed to retain their access to the estuary. Port size can be unrelated to the size of the neighboring city as ports start serving a larger hinterland, as Ducruet also showed. Access to the hinterland via rail and road infrastructure in the region is key.

As the maps show, the scales of decision-making have shifted over time and no single institution can compete with or control the region that depends on or is influenced by the port. Maritime activities have been a key driver of urban growth and planning for several centuries. The cities next to the port have also had other incentives for growth. As nodes in a larger urban conglomeration, as regional hubs, or as capital cities, they have taken on many nonmaritime activities and geared their planning toward these needs. Their economic and spatial focus split from that of the port. Although the city of Rotterdam is primarily a port city, together with Delft (a university city) and The Hague (a residential and government city), it functions as a port city region. Hamburg contains the port function within the city-state territory. Here the difference in city size makes it clear that the definition of the concept 'city' and the identification of city boundaries is becoming vague, as Meyer (1999) indicates. To adjust to contemporary needs, ports searched for appropriate spaces, abandoning historical ports and leaving the task of redeveloping them to nearby municipalities. Containerization played an important role in the separation of port and city because it brought changes in the amount and types of work available in the port. The arrival of larger and often automated port terminals has pushed the industrial ports outward. Planners in each of the cities have made different decisions regarding the changing relationship between port, city, and region. In Rotterdam, the port authority has consciously built the port toward the sea, creating new boundaries with rural instead of urban areas where fewer citizens are influenced. In Hamburg, port and city are still intertwined in the same city-state, but the river itself has become a barrier. In the case of London, private actors moved the port beyond the boundaries of the city, where environmental and infrastructural conditions are more conducive to modern shipping and commercial interests. A new type of multifunctional space emerged, where heritage ports serve urban functions—often nonmaritime ones, such as business, housing, shopping, or leisure.

Conclusion

Conscious planning of port and port city spaces occurred before the formation of the discipline. The port was the driver for the emergence of the city of Rotterdam in 1300. Port activities led the development of the city and municipal expansion followed the expansion of port territories. Long-standing relationships between local institutions, ports, municipal governments, and corporations continue to shape contemporary choices. The Port of Rotterdam continues to play a leading role in the development of the region today. Many of the higher-level urban functions linked to the port, such as the location of headquarters, have been 'outsourced' to neighboring cities in the Randstad. Meanwhile, in London, the economic functions of the city have taken the lead in the relation between port and city. After a period of port expansion

based on private funding, evidenced first in the growth of the docklands and more recently in the move of port functions to Tilbury, the restraints of the urban context led private players to move first beyond the borders of the city and then outside the larger London region. The case of Hamburg shows a situation where port and city have remained intertwined and have been governed together. As the city grew, so did the port. In 1937, Hamburg incorporated the ports of Altona and Harburg to become a large urban port city region with shipping, port, and administrative capacities (Hein and Schubert 2020a). Based on these maps, we can posit that a city in the vicinity of a port benefits from having control over the port's space and development for environmental, social, and safety reasons. A better understanding of the temporal and scalar development of port city territories from a comparative perspective and of the intersection between spatial and social development can inspire better planning for port city territories. For example, one might argue that Rotterdam's striving to increase its standing in the ranking of Maritime Capitals and to catch up with Hamburg would entail a closer collaboration among port and city stakeholders.

Ports have a huge global foreland and a hinterland that extends often beyond national borders. They are part of economic flows and shipping movements and they are physical entities and socio-spatial constructs. Planners play a key role in negotiating global and local interests and needs. Looking at the interplay of transnational urbanist scholarship and the work of planners in port cities, we can identify promising directions for new inquiry into the exchange of planning ideas: transnational urbanism can be studied from the viewpoint of planning history, but it extends beyond individual players and their schools of thought. A systematic analysis of planning history that involves mapping the impact of globalization in diverse institutional settings of exchange is still lacking, although private corporations create networks within which planners can exchange design premises. Advancing research in the field of planning history (Hein 2018), taking into account the sea-land continuum and the urbanization of the sea (Couling and Hein 2020),[3] will allow for richer investigations, denser methodological inquiries, and multidisciplinary exchange in the growing realm of scholarship on transnationalism.

Acknowledgment

The mapping project in the Chair History of Architecture and Urban Planning at the Delft University of Technology would not be possible without the contribution of Yvonne van Mil, who is leading the development of a mapping methodology.

Notes

1 The article builds on several recently published articles ((Hein 2019b, 2019a; Hein and Laar 2020; Hein, Mil, and Momirski 2020; Hein and van Mil 2020; Hein and Schubert 2020a, 2020b)
2 VOPAC, "Our History" https://www.vopak.com/at-a-glance/our-history
3 Couling, Hein (ed.), Urbanisation of the Sea, nai010/BK Books

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