

Running Water on Every Floor

by Emmanuelle Hellier

How did people living in Paris, New York and London slowly gain access to running water? Although private companies shared the water market from the 17th to the 18th centuries, cities slowly realised the need for a public network.

Reviewed: Christophe Defeuilley, *L'Entrepreneur et le Prince. La création du service public de l'eau*. Paris, Presses de Sciences Po, 2017, 328 pp.

Despite the complexity of a subject that lies at the crossroads of history, economics and political science, the author successfully elucidates the history of the origins and early developments of the water networks in three of today's global cities: London, New York and Paris. Christophe Defeuilley follows this logical and chronological order to take us on a journey through the urban history of these cities from the 17th century to the beginning of the 20th century. The main subject is developed in three chapters each focusing on a city. The topic is all the more relevant as the monographs are not juxtaposed; the interconnections emerge not only through the facts evoked, they are also evident in the global context of the analysis applied to each city. Focusing on the three landmark agglomerations of London, New York and Paris, the text also mentions other towns and the best urban network in each of the countries.

How do we explain the dominant model of public management of water services at the turn of the 20th century, when the sector had often been developed on the initiative of private companies? While the 'debates are set out in the same terms' in the three cities, the solutions adopted vary 'depending on the situation', the context and the actors involved. The relationships between the public powers and private companies are dependent on the historico-political context, the actors' practices and their ability to respond to the demands of the moment. The author recounts the trajectories of key personalities and decisive events, characterises the water resources mobilised and seeks to explain the funding methods adopted

as well as the technical choices implemented, depending on the conjuncture and the actor's ploys.

This compact and well-documented work fills a real gap in the knowledge of the history of water network planning at the international scale, in the French language. Undoubtedly, in *The Age of Water: The urban environment in the North of France, A.D. 300-1800* (Texas A& M University Press 1988), André Guillerme traces the manner in which cities in the north of France organised their water networks between the 3rd century and the beginning of the 19th century. And following on in a way from this work, Jean-Pierre Goubert's *The Conquest of Water: The Advent of Health in the Industrial Age* (Trans. A. Wilson, Princeton University Press, 1989) records the shift from public standpipes or water carriers to a home water supply in several large French towns, driven by the desire for modernisation and the social hygiene movement. The water and sanitation systems in Paris have been studied in great detail: we can, for example, quote the work edited by Jean-Claude Deutsch and Isabelle Gautheron *Eaux pour la ville, eaux des villes. Eugène Belgrand XIXe-XXIe siècle* (Presses des Ponts, 2013). Among the works in French, Christophe Defeuilley's work stands out by its comparative approach, involving three cities of global importance, and the key position attributed to political and economic actors, represented by the emblematic figures of the Prince and the Entrepreneur, mentioned in the title.

Transfer of innovation at the international scale

Without dealing with it specifically, the author shows that water services developed largely thanks to the international circulation of ideas, technology and people, particularly from London, where it all began. Of the three cities studied, London was the first to establish a water network linked to a subscription service (two waterwheels fed the north bank of the Thames). From 1600 to 1750, the distribution system remained rudimentary, based on wooden conduits and gravity. Drinking water was only distributed 'three times a week, for two hours, at fixed times' (p. 102). Several companies shared the London service area. In the middle of the 17th century, the service was modernised by the advent of the Newcomen (then Boulton and Watt) machines, making it more efficient and less expensive. Technically, the main water conduits were connected, via reservoirs, to secondary conduits (distribution). The latter supplied homes, with water pouring 'into receptacles for as long as it took an average cistern to fill' (p. 103).

Steam technology spread through the United States and Europe. In 1774, Christopher Colles, an Irish engineer proposed a supply plan for New York. The project was abandoned, but this was a true example of an innovation imported as a result of migration. Transfers of ideas and technology took place between cities, as Stéphane Frioux has shown in the case of sanitation in France in a later period (*Les batailles de l'hygiène. Villes et environnement de*

Pasteur aux Trente Glorieuses, PUF, 2013). In the same vein we can note that French town councillors discovered British innovation in the course of their travels. This was true of the Préfet of Paris, Claude Rambuteau, who visited London in 1845, or Napoleon III, during his exile in England. To take another example, a call for tenders was launched in 1929 to modernise the Paris network: the New River Company in London was invited to apply, but did not respond. In certain cases specific solutions were developed, like the creation of a dual network in Paris. The Canal de l'Ourcq was completed in 1825, and its water was intended for street cleaning and watering, while the domestic water supply was drawn from other sources: the Seine and then other water bodies in the Paris basin, from 1863 onwards.

Initiatives in the private sector, the municipalities consolidate the networks

The author also underscores the crucial role private companies played in the shift from individual solutions to water supply issues, to modern collective systems of water distribution. A magical combination of trade, banking and engineering led to the creation of a first company in London in 1581, the London Bridge Waterworks Company. Francis Drake, the commander of the British fleet that conquered the Spanish army, used his personal fortune to finance the first watercourse for Plymouth. Then, shareholding companies, like the New River Company founded in 1609, were launched to expand the London network.

Similarly, in the United States and in France, the first collective water supply systems were developed by private entrepreneurs. The Frères Périer Company was founded in 1778 in Paris. The Manhattan Company was created in New York in 1799. The investors wanted to establish a profitable business. They convinced the public powers of their technical skills to develop a network, long before the question of access to water became a vital question. From the 1830s onwards, following repeated yellow fever and cholera epidemics, and several major fires, the quantity and quality of water distributed became a public health and security issue. The private companies' capacity to invest and support the creation of infrastructure was sometimes considered a better incentive than the resources available to the public powers, to encourage users to shift to the subscription system.

However, the sustainability of these companies was all the more fragile as their strategy was motivated by profit and income, to the detriment of investment in the task of supplying water to the population. While the city of New York was going through a financial and demographic boom in the first thirty years of the 19th century, rumbles of public discontent broke out against the serious shortcomings in the services provided by the Manhattan Company. To put a stop to the outbreaks of epidemics, at the end of the 1830s, the City of New York began to invest in the construction of canals to bring cleaner water from further away (Catskills System). The private companies did not have the credibility to

shoulder this vast project and disputes around the termination of contracts abounded as a result of 'endemic corruption' and 'one-sided' or very unfair contracts between the companies and the local public authorities (p. 198-202). After the collapse of the Manhattan Company, New York went on to adopt a public water management system, following the example of Philadelphia and Washington, towns that had chosen this option at the outset. Similarly, the idea of creating a municipal water service emerged again in London in 1869. Edwin Chadwick, the man behind the Public Health Act of 1848, had first suggested this solution in 1840. The Metropolitan Water Act of 1902 finally decreed the transfer of active assets to the Metropolitan Water Board, and the City of London raised a loan through bonds, which allowed them to compensate the companies.

At the beginning of the 20th century, water services throughout Europe were more systematically municipalised than other networked services like electricity, gas, telephones or public transport. Géraldine Pflieger has demonstrated this in the case of the Swiss towns ('Dans l'ensemble de l'Europe au début du XXe siècle, la municipalisation des services d'eau à la naissance de l'hydroélectricité : l'essor du municipalisme en Suisse », *Espaces et Sociétés* 2009/4 n°139). Christophe Defeuilley explains this phenomenon by the fact that the local public authorities applied specific requirements to this type of public service of general interest (sanitation, equal access)

The Parisian model: a unique public private partnership

Paris differed from its Anglo-American counterparts by adopting an intermediary scenario that allowed private interventions to coexist with the demands of local public policy. This 'French exception' was the result of a compromise between the Entrepreneur and the Prince, giving rise to a 'delegated public action' (p. 300). Impelled by the *Compagnie Générale des Eaux* the relationship between the local public powers and private economic actors took a surprising turn in Paris at the end of the 19th century. These pragmatic relationships were born out of the stormy controversy between those in favour of purely public management, capable of ensuring public sanitation and low prices, and those who saw private investment as a source of development and efficiency in the management of an industrial and commercial activity. The debate between Mirabeau and Beaumarchais, during the first experience attempted by the Frères Périer in the 1780s, reveals this tension. Several powerful steam pumps were installed on the Seine (two at Chaillot, one at Gros Caillou), but their installation near urban sewage outlets compromised the quality of the water lifted. After the introduction of the decree-law of 19 May 1802, the State took responsibility for the costs involved in the construction of the canals (Ourcq, Saint-Martin, Saint-Denis) and the Villette Basin, or in other words, the 'early foundations of what would go on to become the distribution network' (p. 225).

The embryonic nature of the network and the persisting mediocre quality of the water produced led the authorities to design far more ambitious pipelines to bring water from much further away in the Parisian Basin. The sewage system was designed at the same time, supervised by the engineer Eugène Belgrand, in the wider context of the Haussmann plan. While the city was borrowing money to carry out these major works, Saint-Simonian ideas and Henri Siméon's own involvement led to the signature of a first public service contract between the City and the CGE, on 11 July 1860. Siméon was both a member of the Commission for the embellishment of Paris, and the first President of the Compagnie Générale des Eaux (CGE). The latter, established in July 1853, had already made its mark in Lyon, Nantes and in the Paris suburbs. The story that follows is that of this company's extension in the Paris suburbs – allowing for the creation of a 'large scale technical system' (p. 256) and encouraging economies of scale – and that of a regular renegotiation of the contractual conditions to guarantee a public service that provided continuity, adaptability and equality.

The author clearly explains that it was a question of finding a balance between two theoretical demands: flexibility in the renegotiation of delegation contracts for private enterprise and 'administrative acts' (*fait du prince*) that allowed a public municipal power to unilaterally express its demands (p. 275-285). The title of the work *The Entrepreneur and the Prince (L'Entrepreneur et le Prince)* becomes all the clearer in the light of this French configuration that has become a 'doctrine of the manner in which relations between private enterprise and local public authorities are organised and regulated' (p. 282). *In fine*, private enterprises in France – The CGE as well as the Lyonnaise des eaux —adopted a strategy to make themselves indispensable, while leaving public decision making room for manoeuvre in terms of the planning and funding of infrastructure. This historical and theoretical analysis provides a better understanding of why the leasing system for the management of water services became so easily widespread in France in the 1980s.

To conclude, beyond the three local histories that can be read for themselves, this book offers an international vision of the origins and genesis of the water services in three major urban agglomerations. Any reader curious about history and urbanism will find it satisfying, while specialists of the subject can complement their initial knowledge with information on funding methods, trends of thought, the conflicts and controversies, or even the types of resources and techniques deployed. If it were still necessary, this book demonstrates the full relevance of political history and comparative approaches and the perspective they give us on the current debates on the modes of management of urban services.

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