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# GARBAGE IN THE CITY – WASTE IN AND AROUND BERLIN

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The paper examines both discourses and techniques of waste disposal in Berlin around 1900. Novel patterns of consumption, dense housing, and an increasing population turned waste into an urban problem of unprecedented scale. Waste ranked high among metropolitan scourges as refuse and filth were markers of disorder and regarded as a potential threat to public health. Influenced by rising standards of public health, capitalist efficiency, and technological progress, established practices of collecting, sorting, and disposing came under close scrutiny. Increased public pressure applied by social reformers and fuelled by unsavoury and unsanitary living conditions turned waste into a political issue that led to a transformation of urban infrastructures and a policing of urbanites' every-day habits. At the same time, novel techniques of disposal had to address the tense relationality between the metropolis and its rural surroundings.

**Keywords**

waste, disposal, urban, rural, relationality, materiality, public health, 1900, Berlin

**How to Cite**

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## INTRODUCTION

“When you’re travelling in spring, you notice the proximity of a bigger city first and foremost by the fields fertilized with urban household waste. Wherever you look, shards are twinkling in the sun and among them you’ll see tin cans, parts of crinolines, corsages, springs, broken combs, and other things, the hedges and ridges cluttered with scraps of paper and rags. In other places you’ll spot entire mountains of shards; uneven parts in the terrain, forsaken gravel pits and the like are filled with garbage. [...] Urban dwellers in search of recreation during their Easter walk wander this wasteland just outside the city gates.”<sup>2</sup>

This vivid description offered by Johann Meyer at the nineteenth meeting of the German Association for Public Health (*Deutscher Verein für öffentliche Gesundheitspflege*, DVöG) in 1895 does not only refer to an aesthetic insult, it also summarizes the waste problem of rapidly growing cities like Berlin at the end of the nineteenth century. Five years after the construction of Berlin’s sewers had put the question of liquid waste and human excreta to rest, the puzzle of household waste remained unsolved.

Concepts of order, hygiene, and efficiency informed the turn of the century discourse on the city and facilitated the testing and implementation of specific techniques of disposal. Its hard-to-define nature and seasonally varying composition did not allow for a clear-cut solution. Did garbage pose a threat to public health? Or could some, if not all of it, be salvaged and profitably utilized? As a consequence of solid waste’s ambiguous materiality, public health advocates, administrators, civil engineers and entrepreneurs argued how best to deal with the taboo-laden “matter in the wrong place”.<sup>3</sup>

Meyer’s picturesque impressions equally hint at a tense relationality between the metropolis and its surrounding countryside that refers to the impact of modern systems of waste disposal on urban and rural spaces. While the imagery of polluted fields harkens back to anti-urban stereotypes, which marked the city as an industrialised monstrosity devouring the countryside’s resources, the “fields fertilized with household waste” complicate the matter. They refer to a less linear and more cyclical connection that contemporary experts on waste management had to address.

The article focuses on Berlin’s waste problem between the 1890s and 1920s. In the first section it provides an overview of issues encountered by experts of public health, citizens, and municipal administration in dealing with waste within an increasingly urbanized and industrialized setting. The second section touches upon a conceptual debate among experts regarding appropriate methods of disposal that had an impact on the connection of the German empire’s capital to its rural environs. Sections four to six focus on specific spaces and practices of disposal in and around Berlin. The German metropolis itself figures as the sum of individual households, the opposite and antagonist of its surrounding countryside, as well as a laboratory for coordinated efforts of waste disposal at the end of the nineteenth and the beginning of the twentieth century.

By around 1900, waste constituted an urban problem of unprecedented magnitude, as it was identified as one of the sanitary scourges of urban environments. Due to the many intertwined roots of the problem, a structural explanation prevails in modern historiography.<sup>4</sup> The workings of macro-processes, repeatedly subsumed under the shorthand of modernization<sup>5</sup>, set the scene upon which the war for clean and healthy cities was fought: The growing industrial and commercial centres’ gravitational pull on an impoverished rural workforce seeking material and social improvement; a shift in every-day patterns of consumption and disposal; and poor sanitary conditions, spurred by crowded living-conditions, worsened due to administrative neglect and academic ignorance, provided an ideal breeding ground for both endemic and epidemic diseases.<sup>6</sup>

Most prominently, cholera struck Berlin and other European capitals for the first time in 1831 and thus provided the grounds for a public debate on the state's responsibility to provide for and police adequate sanitary conditions.<sup>7</sup> The pursuing twin rise of public health and urban sanitation over the course of the nineteenth century has been predominantly regarded as a reaction to the epidemic diseases that travelled along the routes of the growing global trade.

The aim of providing healthier living-conditions by supply of fresh water and the construction of sanitary infrastructures was not an exclusively German or Berlin-based problem. Similar circumstances and solution strategies have been explored for other metropolises such London, Paris, or New York.<sup>8</sup> While a comparative or transnational<sup>9</sup> perspective has its merits – as Frank Trentmann has recently demonstrated<sup>10</sup> – it is worthwhile to focus on a specific case study to illuminate the nexus of geographical setting, urban development and municipal politics. By doing so, concrete planning measures and attempts to solve the urban waste problem can be questioned with regard to their feasibility and their consequences.

## BERLIN'S WASTE PROBLEM AROUND 1900

Once established as the new German Empire's capital, Berlin was subject to a considerable growth of population and densification heightening political pressure on the city's government to provide for public sanitary services. Between 1820 and 1850, the city's population had doubled and in 1871, counting more than 870,000 inhabitants, the city neither possessed working systems for sewage removal, nor street-cleaning, or waste disposal.<sup>11</sup> Sanitary experts bemoaned the “disgusting condition of open sewers (Rinnsteine) along the streets which are poorly equipped to fulfil the task of, picking up rainwater, as well as taking away sewage and household waste. They invite mockery and ridicule by natives and foreigners alike.”<sup>12</sup>

Prior to the construction of Berlin's sewage system between 1875 and 1890, waste was thrown into pit latrines in the inner yard and regularly collected by small-time sewage farmers who sold the so-called “night soil” to neighbouring farmers as urban fertilizer. Due to the size of the latrines weeks and months could pass before they were emptied. The construction of the city's sewage system put an end to this practice that involved using wooden receptacles and open horse carts, regularly spilling the odorous content in hallways and streets.<sup>13</sup>

Although the latrines as breeding grounds for vermin and pathogens started to disappear, the fear of waste as a source for disease remained. The responsibility was left to the house owners who worked with private contractors who sought economic value in household wastes despite its diminished fertilizing utility.

“The materials in question are sources for ill health, of disease, of death [...]. You cannot leave it to the mercy of a single individual to ignore these materials as they can be as damaging as those materials that we remove through the sewers.”<sup>14</sup>

These were the remarks of physician and liberal politician Salomon Neumann, a friend and political companion of Rudolf Virchow. Both were representatives in the city parliament, which in 1873 green-lit the construction of the city's sewer system due to the petitioning of Virchow and James Hobrecht.<sup>15</sup> For Neumann, this step alone had not solved Berlin's sanitary question. He insisted on centralizing waste removal and disposal services under the administration's auspices and do away with the more than 60 competing companies that house owners could contract.<sup>16</sup> Although Neumann's colleagues did not share his enthusiasm, the liberal politician did not stand alone. Other contemporary public health advocates such as the Berlin-based hygienic expert and physician Theodor Weyl and members of the *German Association for the Cultivation of Public Health (Deutscher Verein für öffentliche Gesundheitspflege, DVöG)* shared Neumann's concerns.

## PUBLIC HEALTH AND CONCEPTUAL DEBATES OF WASTE

Desolate hygienic conditions constituted a nation-wide problem and a central item on the agenda of a growing public health movement that recruited its members among physicians, biologists, chemists but also engineers, administrators, and politicians. The association's strategy of self-legitimation built significantly on the objective of furthering the growing nation's greater good, measured in their terms by a concern for the citizens' collective well-being. While this claim carried humanist overtones riffing on the improvement of the individual, it was ultimately the care for productivity that directed the focus of public health advocates towards sanitary conditions and those most affected by it: lower-class citizens. They were the smaller but necessary cogs in the machine of the national economy (*Volkswirtschaft*); a machine that needed to be efficient and productive in its workings.

This economical and utilitarian conviction figured prominently in the mission statement of the *German Association for the Cultivation of Public Health (Deutscher Verein für öffentliche Gesundheitspflege (DVÖG))*. The association was founded in 1873 with the aim to bundle all fields of expertise that affected public health, defined in its journal as the well-being and productivity of society as a whole. It built on the journal *Deutsche Vierteljahresschrift für öffentliche Gesundheitspflege* that was established in 1869. The first editor in chief, physician Carl Heinrich Reclam, set the agenda both for the journal as well as the direction the association should take four years later: "It is not the task of public health to ensure the longevity and well-being of single individuals but rather to secure and enhance the productivity of the entire population."<sup>17</sup> However, this increase in productivity was not to be gained by jeopardizing individual needs, "since a state's productivity is built on the health of the individual,"<sup>18</sup> but rather by providing a sufficient health infrastructure through the participation of different experts.<sup>19</sup>

Waste and its occurrence as a civilizational danger was framed as a predominantly urban problem, rooted in the abundance of goods and newly created commodities.<sup>20</sup> Contemporary observers noted, that the propensity for reusing materials in a rural setting extended their life cycle. While some commentators overstated rural capacities for reintegrating waste into a (re)productive cycle<sup>21</sup>, differences in the quality and quantity between cities and the countryside remained. Estimates of yearly waste production per person in rural settings around 1900 varied between 125 to 150 kg per year, dwellers in highly urbanized environments such as Berlin produced about 0.6 kg of waste daily or almost 220 kg per year.<sup>22</sup>

## STORING AND DUMPING

Storing waste constituted the cheapest and most short-sighted remedy in coming to terms with these amounts. Until 1887 the city possessed no regulation regarding so-called "wild dumps". This practice included dumping waste in vacant or unused lots of land either within the city limits or its immediate periphery. Although the city offered to use three central storing sites the private entrepreneurs in charge of collecting the waste from the households went great lengths to circumvent the central sites as their use included a fee. Only a legal prohibition of the wild dumps by the chief administrator of the governmental district in Potsdam led to an increased use of the central sites.<sup>23</sup>

In face of growing masses of urban waste, these sites only constituted a provisional remedy. Between 1871 and 1891 the amount of Berlin's waste more than doubled from 340,000 to 700,000 cubic metres of garbage per year with a population of about 1.6 million inhabitants.<sup>24</sup>

Waste still had to get out of Berlin but in a more coordinated fashion and it needed to be put further away. To enforce the prohibition of wild dumps the police created a 30-kilometre-wide *cordon sanitaire*. The distance was designed to make it unprofitable for the small-time waste disposal companies to dump their loads for within the immediate periphery of the metropolis. A few significant exceptions were granted however. The city was allowed

to purchase property for sanitary dumps that could be accessed either by barges or by train and were operated by local companies. While these dumps created economic opportunities they also imported the exact same problems that the metropolis tried get rid off.

## PUTTING WASTE SOMEPLACE ELSE

“The garbage has to get out of Berlin!”<sup>25</sup> Such outcries of administrators’ dismay were quite common as the waste problem of metropolises like Berlin reached unprecedented proportions towards the end of the nineteenth century. What remained unmentioned, however, was that getting the garbage “out” also entailed putting it someplace else. As disposal sites within the city limits were regarded as unsanitary and insufficient, the vast rural space surrounding the young empire’s capital appeared as an obvious solution. The growing metropolis needed the real estate for construction. Not only did the immediate periphery provide the metropolis with resources but it was now supposed to absorb its waste as well, thus adding to an already complex relationality between the urban and the rural.

The changes in waste management, however, did not come about without conflicts. While waste itself presents a resilient material leftover that defies attempts to (re)establish order, the sheer amounts of urban garbage could not be digested by the growing metropolis alone. The city depended heavily on its rural periphery for it to absorb and (ideally) reintroduce waste into material cycles of production and, by doing so, help to provide a modicum of urban hygiene. The issue of waste put the relationship between metropolis and periphery to the test, exemplified by Berlin’s 30-kilometers-wide *cordon sanitaire* destined to separate the delicate urban order from its rural waste deposits.

While smaller municipalities thought it an economically sound decision to help rid the metropolis of its waste, some of them found it hygienically troublesome to be the capital’s dump sites. In an attempt to close down a local dump site in Spreehagen, some 24 kilometres east of Berlin, the municipal government in Fürstenwalde marshalled the same reasoning that public health experts applied when arguing for a cleaner metropolis in 1902: intolerable smells, the multiplication of vermin, and a possible threat to the health of its proximate inhabitants caused by the dust emanating from the dump site.<sup>26</sup>

As both communities could not find an amiable solution, Fürstenwalde put a case at the state court (*Landgericht*). The legal conflict involved physician and public health advocate Theodor Weyl who served as an expert during the trial. Weyl, who had been an outspoken proponent of waste incineration as the most hygienic and economical solution to the urban waste problem, sided with the reasoning of the plaintiff.

Despite the complaints and Weyl’s judgement, the dump site was not closed. Instead the state court merely ruled that Berlin had to alert its neighbouring communities to possible nuisances of future dumps. Dissatisfied with the outcome, Fürstenwalde took the case to Berlin’s highest state court, the *Kammergericht*, which ruled more solomonically: The city of Berlin had to pay damages and further guarantee provisions for its peripheral dumps to protect inhabitants that had been living in the area before the site was raised. Accordingly, they had to be at least 800 metres away from houses to avoid negative effects. Oddly enough, the *Kammergericht* also ruled out health concerns over vermin and dust altogether and merely acknowledged the obnoxious smells as an intolerable nuisance.<sup>27</sup>

## INCINERATION

In the wake of the 1892 cholera epidemic that ravaged Hamburg, hygienic concerns with regard to waste disposal dominated the debate and were further fuelled by the bacteriological findings of Robert Koch. According to Theodor Weyl, waste was “rich in pathogens micro organisms and predisposed for decay and fouling processes.”<sup>28</sup> In a report to the city’s magistrate he spoke out against dumping sites, which he deemed “nothing else than a breeding ground for decay, sanctioned by the authorities.”<sup>29</sup>

For Weyl there was only one sanitary solution, waste needed to be incinerated: “Plague spots need to be fought, the best thing is to burn them out.”<sup>30</sup> His verdict was informed by a journey to England where he inspected several incinerators that had been in use since the 1870s.

According to Weyl’s recommendations, Berlin’s municipal parliament agreed in 1894 to fund a test incinerator based on the English model. Experiments started in 1898 but did not yield the desired outcome. Berlin’s waste would not burn. Firstly, the capital’s waste was too moist. Secondly, Berliners used brown coal for heating and cooking. The ashes from this lowest rank of coal constituted the heaviest and biggest part of household wastes, yet was of little ‘thermic’ value. The test facility would not operate properly without adding further burning materials, thus defeating the purpose of generating “electricity from garbage” as contemporary experts like István de Fodor advertised.<sup>31</sup>

Albeit the recent setbacks in application, the ideal of restless disposal continued to stimulate engineering ingenuity. While taking the hindrances of Berlin’s waste into account, civil engineer Clemens Dörr, proposed specific improvements to the English model. His “Dörr’sche Methode”, which became an oft-quoted alternative in contemporary discussions, included sorting and compartmentalizing garbage before burning it and thus singling out slowly burning materials such as kitchen wastes that in turn could be transformed into fertilizer or used for agricultural amelioration in general.<sup>32</sup> Dörr’s argumentation aimed at highlighting that a well planned and operated system that combined sorting and incinerating would not provide a feasible alternative that benefited the metropolis but also its periphery and thus help improve the tense relationality between Berlin and its environs.

Proponents of rigorous incineration like de Fodor advised strongly against compartmentalised treatment of waste as unprofitable and unsanitary.<sup>33</sup> Such positions were seldom unbiased. De Fodor, for example, was the general director of the *Budapest General Electrical Company* (*Budapester Allgemeine Elektrizitäts-Gesellschaft*) Unsurprisingly, he advertised incineration as – allegedly –the cheapest, cleanest, and simplest solution to the urban waste problem. To bolster his claim, de Fodor illustrated his book *Elektrizität aus Kehricht* with images that were supposed to document the desolate hygienic conditions of sorting through the dumpsters and to instill horror among their observers.

However, Dörr’s approach to incineration, which was based on a cautious yet practical stance on worries about hygiene, received widespread support among influential members of the DVöG. Among them was Professor Hans Thiesing, assistant director of the *Royal Testing Station for Water Supply and Waste-Water Removal* (*Königliche Versuchs- und Prüfungsanstalt für Wasserversorgung und Abwasserbeseitigung*) in Berlin-Dahlem. Thiesing, who had argued that waste was to be considered “matter in the wrong place”<sup>34</sup>, tried to disband notions that waste might be the prime cause of infectious diseases. Both Dörr and Thiesing doubted the previous notions put forth by Weyl that waste was to be regarded as a primary source for epidemic diseases. Their scepticism notwithstanding, the two experts argued that the hygienic treatment still needed to be a priority if waste should be reintegrated into a (re)productive cycle.<sup>35</sup> One prominent example that implemented both objectives could be found in Charlottenburg.

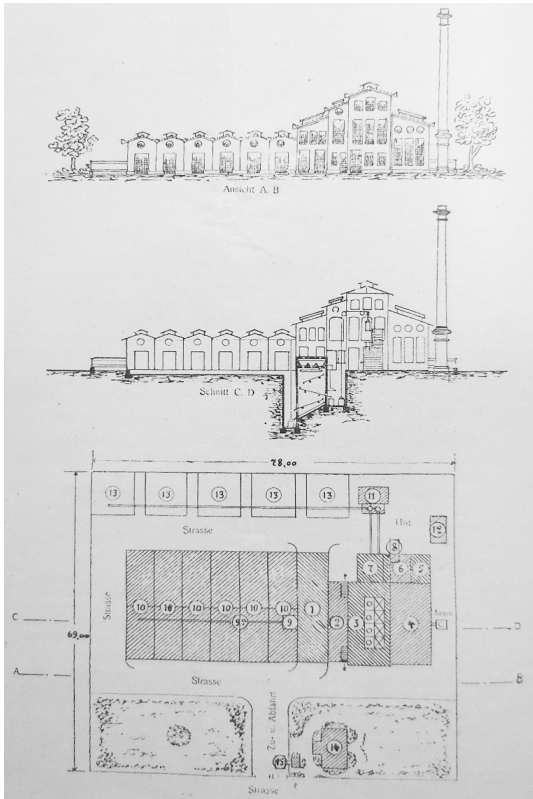


FIGURE 1 Schematic of Dörr's incineration and sorting facility, 1910.



FIGURE 2 "Searching for food scraps", ca. 1911.

## ALTERNATIVES MADE IN CHARLOTTENBURG

Although Charlottenburg did not officially become a part of Berlin before 1920, its alternative approach to waste management served as a much-discussed example in the capital. Until 1907, the city pursued the same model like Berlin, which focused on transporting waste to distant but accessible vicinities via train or barges. Charlottenburg's own attempts at incineration had been unsuccessful for the same reasons as the capital's tests. Under the auspices of the municipal government, the private *Charlottenburger Abfuhrsgesellschaft* (Charlottenburg Disposal Company) tried an alternative and novel way: a three-way separating system.<sup>36</sup>

Waste was sorted in three categories: ashes and sweepings; kitchen wastes; and bulky, so-called commercial waste, such as paper, wood, rags, or metal. The idea was to strike a balance between removal efficiency and salvaging economic resources. Charlottenburg's mayor Kurt Schusterhus explained that it was the company's objective "not to throw away the great value that exists in a city's waste, but to return it to the nation's assets."<sup>37</sup> This claim had been nourished by the company's projections that their enterprise would yield an annual profit of 600,000 marks.<sup>38</sup>

In order to achieve this goal, the management had to rely on the participation of maids and housewives in separating the household waste. To make matters easier, the company sold metal receptacles that contained three different containers, one for each sort of waste. Its contents were then emptied into bigger containers stored in the inner yards before the company picked them up.<sup>39</sup>

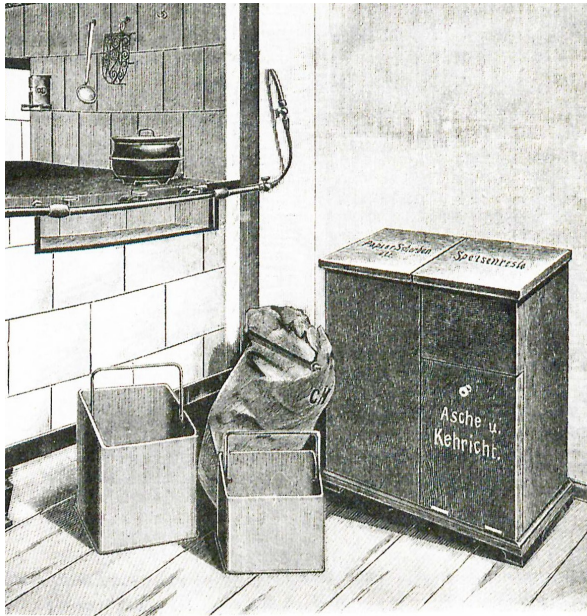


FIGURE 3 Container for sorting “paper”, “kitchen waste”, and “ashes and sweepings”, Charlottenburg, ca. 1905.



FIGURE 4 Woman using courtyard containers for sorting, Charlottenburg, ca. 1905.



FIGURE 5 Inside the sorting facility in Seegefeld, ca. 1915.



The different sorts of waste were taken to different facilities. Ashes and sweepings were transported to a dump, some 30 kilometres north of Charlottenburg. The rest, kitchen waste and 'commercial' waste were taken to a sorting facility in Seegefild where they were either sorted for reuse or incineration. Kitchen wastes were processed and used at the local pig farm that counted 2,000 animals.<sup>40</sup>

Experts hailed Charlottenburg's progressive model as the dawn of a new age in waste disposal.<sup>41</sup> However, more sober assessments followed within the year once its actual costs became public. The whole complex procedure turned out to be extremely costly. Already in its first year of business, the company made a loss of 500,000 marks. Ironically, this deficit was ascribed to an amount of waste that was too small to be profitably separated. Additionally, the pig farm was infected with swine fever in 1908 and household wastes had to be sold for even less returns as fertilizing material.<sup>42</sup> The overall endeavour of the *Charlottenburg Disposal Company* to offer an alternative disposal method was rather short-lived. In April 1917, the enterprise had to close up shop as the war effort had taken hold of the company's horses, its carts, and a crucial amount of its workforce.

## CONCLUSION

Although Berlin got off rather mildly on this occasion, the case illustrates the downsides of the urban administration's attempt of providing an easy fix to a structural problem tantamount to the provision of adequate sewage systems. In fact, the discussion among public health reformers echoed argumentative structures that had been put forth in the debates about advantages and disadvantages of combined sewers.<sup>43</sup>

On the same note, the issue of waste refers to the tense relationality between the rural and the urban that is marked by resilience on both sides. While the metropolis sought solutions to its own problems outside, the periphery struggled not to be merely passed of as a city's hinterland that both provides resources and simultaneously absorbs the city's excreta.

Late nineteenth-century experts of waste disposal struggled to resolve this conflict by either reintroducing waste into a cycle of productivity, most prominently as fertilizer, or by its absolute destruction through incineration. The problem of dealing with waste stimulated the imagination of engineers and the horrors of sanitary advocates alike.

The variety of solution strategies to the urban waste problem hint at a motivational conflict between the establishment of visible order, concerns for public health, and economic concerns at the turn of the century. While the city administration eventually agreed to test new methods of waste treatment, it was only willing to do so as long as it covered the costs. Thus the most economical solution, dumping, prevailed and dominated. This technique of disappearance, however, merely shifted the waste problem from the metropolis to the periphery.

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## Disclosure Statement

No potential conflict of interest was reported by the author.

## Notes on the Contributor

Björn Blaß (born 1985 in Germany) received his B.A. in History and English Speaking Cultures from University of Bremen and his M.A. in Modern & Contemporary History from the Freie Universität Berlin. During his studies he received a stipend from the German Merit Foundation and worked as a research assistant at the University of Bremen, Freie Universität Berlin and Humboldt-Universität zu Berlin. Since 2014 he pursues his PhD as part of the International Max Planck Research School for Moral Economies of Modern Societies at the Max Planck Institute for Human Development in Berlin. His thesis *Environments of Disposal: Moralities, Practices, and Localities of Waste* focuses on the occurrence and solution strategies of the urban waste problem at the end of the nineteenth and beginning of the twentieth century.

## Endnotes

– Endnotes)

- 1 This contribution is part of the panel “Urban Ruralities Since the 19th Century”, organised by Celina Kress (CMS/ TU Berlin) and Sylvia Necker (IfZ Munich). Further participants include Piero Sassi (Bauhaus-Universität Weimar) and Sophie Schramm (TU Darmstadt).
- 2 Meyer, “Beseitigung des Kehrichts”, 12.
- 3 Thiesing, “Müllbeseitigung und Müllverwertung”, 161. Thiesing's practical definition of waste (“matter in the wrong place”) predates that of anthropologist Mary Douglas by half a century. According to Douglas, dirt is to be regarded as “matter out of place and has since the publication of *Purity and Danger* in 1966 served as a conceptual go-to reference for scholars of waste. Douglas, *Purity and Danger*, 35-6. As Economic and social historian Frank Trentmann argues that “to understand the evolution of waste, we need both.” Trentmann, *Empire of Things*, 627.
- 4 Stokes et al., *Business of Waste*, 22-4; Barles, “Feeding the City”, 53-4; Strasser, *Waste and Want*, 14-5; Melosi, *Garbage in the Cities*, 17-9; Evans, *Tod in Hamburg*, 418-75; Gandy, *Recycling and the Politics of Urban*, 38-45, 70-7, 90-3; Münch, *Stadthygiene im 19. und 20. Jahrhundert*, 227-40.
- 5 Urbanist and geographer Matthew Gandy eloquently cautions against over-simplifying this narrative when it comes to urban sanitation: “The regularization of infrastructure provision forms part of what Stephen Graham and Simon Marvin term the ‘modern infrastructural ideal’ comprising specific ideologies of science, the modern discipline of urban planning, emergent patterns of consumption, and territorial dimensions to the modern state. Yet this ostensibly universal model that diffused outward from the nineteenth-century industrial city is itself under strain with the shift to more socially and spatially differentiated systems. [...] Similarly, the articulation of a ‘bacteriological city’ emerging in the late nineteenth century, in which advances in epidemiology, civil engineering, and modern forms of public administration predominate, has proved highly restricted in its geographic scope. Although the acme of this push towards spatial rationalization, and what historian Mark Mazower terms the ‘technocratic assurance’ of ‘imperial modernism’, is reached in the immediate post-war era of the late 1940s and 1950s, we should not forget that the geographic reach of modernization was highly uneven even within the global North.” Gandy, *Fabric of Space*, 8-9.
- 6 Lenger, *Metropolen der Moderne*, 12-4; Strohmeyer, *James Hobrecht*, 43-4; Bleker, “Die Stadt als Krankheitsfaktor”, 136.
- 7 During its first outbreak of the nineteenth century, 1,417 citizens died of cholera in Berlin in 1831. After this first global pandemic, the city was repeatedly struck by further epidemic waves in 1866, and 1904. See Jütte, “Die Choleraepidemie 1831”; Dettke, *Die asiatische Hydra*, 169-207.
- 8 The sanitary question of the British Empire's capital has been primarily researched within the confines of the public health movement and the construction of the London sewer system, which served as a role-model of urban infrastructural planning world-wide. Allen, *Cleansing the City*; Hamlin, *Public Health and Social Justice*. More recently, *The Business of Waste* by Raymond Stokes, Roman Köster and Stephen Sambrook addresses the British and German waste industries from a comparative perspective. For Paris, the works of historical geographer Sabine Barles laid the ground for an urban environmental history of the city and its environs. Together with Laurence Lestel, Barles turned towards contemporary analyses of nitrogen concentration in Paris' sewage and cyclical models of agricultural utilization of urban excreta as “urban fertilizer”. Barles/Lestel, “The Nitrogen Question”, 802-3. See also Barles, “Feeding the City”. In her earlier work, Barles focused on the reconstruction and reimagination of Paris' urban landscape according to medicine and civil engineering. Barles, *La Ville délétaire*. The history of urban waste and its management per se originated in the United States and had first been explored in Martin V. Melosi's seminal work *Garbage in the Cities* in 1981. Much like Susan Strasser's *Waste and Want*, Melosi does not focus exclusively on New York, yet the U.S. metropolis serves as a key reference in both works. While Strasser focusses on every-day practices linked to what she calls a “stewardship of objects”, Melosi is more concerned with the political and administrative dimension of urban sanitation. For a New York-specific, albeit slightly prosaic, overview of the city's history of waste, Benjamin Miller's *Fat of the Land*.
- 9 Or should one rather say ‘translocal’?
- 10 Just this year Trentmann provided a fascinating chapter calling into question the paradigm of high as well as late modernity's throwaway society in his compelling *longue durée*-monograph *Empire of Things*.
- 11 Stokes et al., *Business of Waste*, 27. Construction of Berlin's sewage system began in 1873 under the auspices of the city's great planner, architect James Hobrecht (1825-1902). Envisioned by his predecessor, Salomon Wiebe (1804-1892) in 1861. Hobrecht refined Wiebe's designs that were inspired by London's sewer system that the two men inspected in 1860. Wiebe suggested to direct the flow of sewage unfiltered into the river Spree outside of Berlin. To avoid containment of the city's water supply, Hobrecht suggested to filter the sewage water by leading the pipes to sewage farms (Rieselfelder) in the periphery; see von Simson, *Kanalisation und Städtehygiene*, 112-26; Strohmeyer, *James Hobrecht*, 105-23; Münch, *Stadthygiene*, 98-9; Hardy, *Ärzte*, 144-5.
- 12 Börner, *Hygienischer Führer durch Berlin*, 97-8.
- 13 Hofmeister-Lemke, *Berliner Stadtreinigung*, 98.
- 14 *Stenographische Berichte*, 427.

- 15 Strohmeier, James Hobrecht, 110.
- 16 Hofmeister-Lemke, *Berliner Stadtreinigung*, 97.
- 17 Reclam, "Die heutige Gesundheitspflege," 1-4.
- 18 *Ibid.*, 1.
- 19 The German-speaking debate on urban sanitation initially treated the British public health movement as a model to be emulated, thanks to its progress in legislation and infrastructure. While examples from Great Britain dominated well into the 1890s, publications of the DvöG and other sanitary journals, increasingly reported on techno-scientific advancements in the field of public health from France, Italy, Austria-Hungary, the Netherlands but also from the United States. On the discursive parallels between the German-speaking and the British public health movement see Hardy, *Ärzte*, 98-119.
- 20 Trentmann, *Empire of Things*, 628-30.
- 21 Weber, "Stoffkreislauf," 149.
- 22 Koschmieder, *Die Müllbeseitigung*, 5.
- 23 Röhrecke, *Müllabfuhr*, 171-3.
- 24 Hofmeister-Lemke, *Berliner Stadtreinigung*, 101.
- 25 Letter of Nauen's head of district to the chief administrator in Potsdam (October 21, 1924) regarding a permission for a waste dump in Vorketzin, BLHA Re 2A I. Pol. 2583, 289, quoted in Köstering, "Zur Standortbestimmung," 87.
- 26 Weyl, "Der Streit zwischen Fürstenwalde und Berlin," 437-40.
- 27 *Ibid.*, 439-40.
- 28 Weyl, "Bemerkungen über den Stand der Müllbeseitigung," 59.
- 29 *Ibid.*
- 30 *Ibid.*
- 31 de Fodor, *Elektrizität aus Kehrlicht*.
- 32 Dörr, "Über eine neue Richtung," 1-7.
- 33 de Fodor, *Elektrizität aus Kehrlicht*, 20-44.
- 34 Thiesing, "Müllbeseitigung und Müllverwertung," 161.
- 35 Stakemann, "Über Müllbeseitigung in hygienischer Hinsicht," 546.
- 36 Jasner, "Frühe Alternative,"
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- 39 *Ibid.*
- 40 Weber, "Towards 'Total' Recycling," 376.
- 41 Koschmieder, *Die Müllbeseitigung*; Meyer, *Müllbeseitigung und Müllverwertung*.
- 42 Rüb, "Grenzen eines tradierten Systems," 93.
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## Image Sources

- Figure 1: Clemens Dörr, "Denkschrift betreffend einer Versuchs-Anstalt für Beseitigung und Verwertung von Hausmüll und Straßenkehricht in Berlin," in *Archiv für Stadthygiene* 1.3 (1910), 96-104, 103.
- Figure 2: István de Fodor, *Elektrizität aus Kehricht*. Budapest: K. u. K. Hofbuchhandlung von Julius Benkó, 1911, 24.
- Figure 3: S. Daule, *100.000 Schweinchen in städtischer Regie*, Leipzig, ca. 1905, in Susanne Köstering, Renate Rüb (eds.), *Müll von gestern? Eine umweltgeschichtliche Erkundung in Berlin und Brandenburg* (Cottbuser Studien zur Geschichte von Technik, Arbeit und Umwelt 20), Münster et al.: Waxmann, 2003, 117.
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