

INTRODUCTION

In the mid-thirteenth century, Jacobus de Voragine narrated the tale of Saint George and the Dragon in his *Golden Legend*. The opening lines ran as follows:

One day [George] came to Silena, a city in the province of Libya. Close by this city was a vast lake, as big as an inland sea, where a pestilential dragon had its lair. The people had often risen in arms against it, but the dragon always put them to flight and would venture right up to the city walls and asphyxiate everyone with its noxious breath. So the citizens were compelled to feed it two sheep every day in order to allay its fury, otherwise it would make straight for the walls and poison the air, causing a great many deaths.¹

In time, the dragon began to require human sacrifices, and when Silena's elders refused to supply their share – a virgin princess – they turned to George and the Christian God to support their resistance. And indeed, once the city was baptised, George slew the dragon and ended the sordid affair.²

In the decades and centuries after De Voragine's version of the tale, town governments in the Netherlands used the metaphor of the dragon to express the danger of corrupted air as a cause of disease in general processions. Statues of George and the Dragon were carried through the streets, and actors staged the scene in *tableaux vivants* along the procession's route.³ Besides communicating ideas about disease to the populace, urban processions such as these served a prophylactic purpose, as they helped to calm God's wrath and dispel dangers such as epidemics and famines. They also conveyed a crucial component of public or group

¹ Saint George (23 April). Jacobus de Voragine, *The Golden Legend: Selections* (New York, 1998), p. 116.

² The church built in his honour later boasted 'a natural spring whose water cures all illnesses'. Ibid.

³ B. A. M. Ramakers, *Spelen en figuren: toneelkunst en processiecultuur in Oudenaarde tussen Middeleeuwen en Moderne Tijd* (Amsterdam, 1996), pp. 145–6, 251–60.

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health, namely the negotiation about who exactly was able to represent George and thus assume responsibility for fighting the dragon's poisonous breath. This was not a simple matter of one polity caring for its subjects. The urban processions express particularly well the complex social connections forged within urban communities and their relations with the urban fabric: city governments, guilds, parishes, confraternities, neighbourhoods and religious orders formed a polycentric order with many overlaps. Governing elites presided over these congregations, occupying paid and unpaid offices, with individuals active in different groups at the same time. These horizontal connections cut through hierarchy and dichotomies of the religious and secular, the public and private.⁴

Later observers long regarded such religious responses as characteristic of superstitious attitudes towards public health during the Middle Ages. In contrast to ancient Roman sanitary accomplishments and Early Modernity's gradual implementation of technological and scientific innovation, medieval cities have been seen as particularly squalid; a proof of their inability to maintain a reasonable degree of public hygiene. When scholars began to study the history of public health from the late nineteenth century on, they emphasised success over the long term, especially after 1800, in improving population health, quality of life and longevity. They saw this as achieved mainly by limiting the spread of infectious diseases through preventative reform such as vaccinations and the treatment of drinking water. These early studies focused on state-level interventions, developments in medical science and the incorporation of medically trained practitioners into governments, and often took the Middle Ages as a negative starting point.⁵ A similar view of linear progression towards modern sophisticated hygienic standards also formed an important part of the western 'civilising process', as propagated by sociologist Norbert Elias and his followers.⁶ Yet recent scholarship on

⁴ M. Prak, *Citizens without Nations: Urban Citizenship in Europe and the World, c.1000–1789* (Cambridge, 2018); P. Trio, *Volksreligie als spiegel van een stedelijke samenleving: de broederschappen te Gent in de late middeleeuwen* (Louvain, 1993); S. Reynolds, *Kingdoms and Communities in Western Europe, 900–1300* (Oxford, 1997). Saint George was often also the patron of the urban militias.

⁵ D. Porter (ed.), *The History of Public Health and the Modern State* (Amsterdam, 1994), pp. 4–5. Influential early studies are C. F. Brockington, *A Short History of Public Health* (London, 1956); C. M. Cipolla, *Public Health and the Medical Profession in the Renaissance* (Cambridge, 1976); G. A. Rosen, *History of Public Health* (New York, 1958). See on the Victorian roots of this negative stereotype C. Rawcliffe, *Urban Bodies: Communal Health in Late Medieval English Towns and Cities* (Woodbridge, 2013), pp. 12–45.

⁶ N. Elias, *The Civilizing Process*, transl. E. F. N. Jephcott (Oxford, 1978); J. Goudsblom, 'Public Health and the Civilizing Process', *The Milbank Quarterly*, 64 (1986), 161–88; B. van Bavel and O. Gelderblom, 'Land of Milk and Butter: The Economic Origins of Cleanliness in the Dutch Golden Age', *Past and Present*, 205 (2009), 41–69; G. Vigarello, *Concepts of Cleanliness: Changing Attitudes in France since the Middle Ages* (Cambridge, 1988).

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medieval public health has uncovered a wealth of evidence supporting a rather different picture.⁷ In her seminal work on medieval England, Carole Rawcliffe shows that medieval cities were far from indifferent about their collective health. In order to safeguard well-being, sustain social order and preserve spiritual purity, local communities developed a broad range of practices to protect themselves and fight disease, working within the paradigm of humoral medical theory or Galenism.⁸ Guy Geltner argues in *Roads to Health* that public health practices were much more influential in the political and infrastructural organisation of Italian cities than previously understood, rendering two assumed watershed in the history of urban health, namely the advent of the Black Death and the institution of health boards, part of a longer and more complex history of negotiating health interests.⁹

This book takes these insights into new territories in multiple ways, with a comparative exploration of how health interests affected the uniquely dense urban network of the Low Countries, and by adopting a biopolitical and spatial-material approach. This study's main argument is that health interests informed community politics and reveal the importance of the physical world – spaces, infrastructures, flora and fauna – in governing cities. A collective pursuit of a healthy and clean city shaped modes of urban governance and notions of community, while political interests and power relations in their turn informed what communal health entailed and how it ought to be protected. Communal health practices were therefore an integral, but historiographically neglected, aspect of the common good.

I define public health as all efforts to prevent disease and promote health at a population level, shaped by a complex combination of cultural, religious, sociopolitical and material considerations.¹⁰ For more than sixteen centuries, Galenic medical thought, understood here as an

⁷ Medieval public health is still an emerging field dominated by articles and book chapters, yet several monographs published in the past few years have put the topic forcefully on the map. L. J. Skelton, *Sanitation in Urban Britain, 1560–1700* (London, 2015); I. Fay, *Health and the City: Disease, Environment and Government in Norwich, 1200–1575* (Woodbridge, 2015); D. Jørgensen, “‘All Good Rule of the Citee’: Sanitation and Civic Government in England, 1400–1600”, *Journal of Urban History*, 36 (2010), 300–15. Early contributions to the field are L. Thorndike, ‘Sanitation, Baths, and Street-Cleaning in the Middle Ages and Renaissance’, *Speculum*, 3 (1928), 192–203; E. L. Sabine, ‘City Cleaning in Mediaeval London’, *Speculum*, 12 (1937), 19–43; G. T. Salusbury, *Street Life in Medieval England* (Oxford, 1939).

⁸ Rawcliffe, *Urban Bodies*.

⁹ G. Geltner, *Roads to Health: Infrastructure and Urban Wellbeing in Later Medieval Italy* (Philadelphia, 2019).

¹⁰ This definition combines Geltner, *Roads to Health*, pp. 17–22 and his notion of healthscaping; D. Porter, *Health, Civilization and the State: A History of Public Health from Ancient to Modern Times* (London, 1999), p. 4; Rawcliffe, *Urban Bodies*, pp. 4–5.

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evolving complex of ideas from Greek, Roman, Arabic and later Latin Christian traditions, created views about the workings of the natural world and their impact on the functioning of bodies, both communal and individual. Health, in the Galenic sense, was a form of dynamic balance. It made few distinctions between spiritual and physical health and construed humans as prone to contracting illnesses through exposure to air corrupted by polluted waters and land, excrement and refuse, or by consuming spoiled food.¹¹ Moreover, at the individual and group level, people prioritised prevention over cure: diet and realising safe and clean living spaces over surgery and other curative procedures. As essentially a theory on balance and synergy of components, each with their distinctive qualities, Galenism also offered political guidelines on how to govern a society in a way that its members thrived in harmony and peace, and what moral conduct benefitted that collective pursuit.¹² At the same time, maintaining health at a group level entailed securing a stable supply of the essentials no community, large or small, could live without: food, water and fuel. And it entailed coordinating its outpourings: where and how waste was disposed, how it sank into urban and surrounding grounds.¹³ Public health was therefore at once more environmental and more spiritual than its twenty-first-century Euro-American counterpart.

Prevention was deeply linked to local material and social contexts, in this case the many cities and towns of the late medieval Low Countries. This urban network was connected by the arms of the major river deltas of the Rhine, Meuse, Schelde and IJssel. Local urban governments stood in continuous negotiation with counts and other noble landlords, and especially other cities. These cities thus in important respects diverged from the independent political bodies of Italian city-states, or the urban communities under a more integrated monarchy, such as in England and France. This gave the region a distinct political profile and ideologies of community, with a more decentralised and negotiated conception of the health and well-being of urban populations. Between the late thirteenth and sixteenth centuries, the Netherlandish urban network underwent a radical transformation. Whereas the vast majority of Europe's

¹¹ C. Rawcliffe, 'The Concept of Health in Late Medieval Society', in Simonetta Cavaciocchi (ed.), *Le Interazioni Fra Economia e Ambiente Biologico Nell'Europa Preindustriale Sec. XIII–XVIII* (Florence, 2010), pp. 321–38; Rawcliffe, *Medicine & Society in Later Medieval England* (Stroud, 1995), pp. 29–41.

¹² See Chapters 1 and 6.

¹³ R. C. Hoffmann, 'Footprint Metaphor and Metabolic Realities: Environmental Impacts of Medieval European Cities', in P. Squatriti (ed.), *Natures Past: The Environment and Human History* (Ann Arbor, 2007), pp. 288–325; M. Kaika, *City of Flows: Modernity, Nature, and the City* (London, 2012); D. van Laak, *Alles im Fluss: Die Lebensadern unserer Gesellschaft – Geschichte und Zukunft der Infrastruktur* (Frankfurt am Main, 2018).

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inhabitants spent their lives in a rural environment, one in three people in Flanders and Brabant lived in cities around 1350, a proportion that in Holland grew to 44 percent by 1500.¹⁴ Both larger metropolises and the many dozens of Netherlandish towns with a few thousand inhabitants generated extensive series of administrative records. These, alongside material remains, allow studying the region's extensive prophylactic practices in depth.

Based on the foci and subjects that these archival sources convey and the premises of Galenic medical theory, I argue that the pursuit of a healthy city can be divided into four main goals or programs that urban governments developed in order to ensure 1: well-functioning infrastructures; 2: sufficient and high-quality water and food; 3: organised (but not necessarily centralised) waste disposal; 4: a morally healthy community. These four programs were deeply connected. For instance, a smoothly flowing, navigable river both attested to and provided for the first three goals – and, given the strong religious connotations of water, even all four. The term program opens up several associations. Environmental historians such as Richard Hoffman use it to signify the culturally informed manipulation of and attitudes towards the natural environment and ecosystems. It is moreover central in spatial-material approaches that regard sociopolitical and cultural organisation of society as shaped through practices involving multiple species, spaces, materials and (infra)structures, as discussed in more detail below.¹⁵

Various agents participated in communal health programs and tried to steer or influence processes of change, and for different reasons. Local urban governments were one important stakeholder, and definitely one of the most visible ones in terms of written sources. Yet the same sources also reveal other agents pursuing different agendas. This resulted in various clashing or at least incompatible interests. Cities competed with each other to secure food and fuel supplies. Artisans sought the cheapest mode of production and waste disposal, while food traders at times tried to get rid of substandard wares – and the poorest were forced to buy them. Neighbours might have hesitated to contribute to expensive shared facilities such as wells and cesspits, forgot to monitor them or simply lacked the funds to fix things that had broken down. Perceptions of dysfunctionality, as observed by nearby residents or municipal officials, moreover extended towards the social: physical nuisance and disturbance (disease and sin) were highly related and comparable forms of imbalance.

¹⁴ W. P. Blockmans, B. de Munck and P. Stabel, 'Economic Vitality', in A.-L. van Bruaene, M. Boone and B. Blondé (eds.), *City and Society in the Low Countries, 1100–1600* (Cambridge, 2018), pp. 22–58, at pp. 22–33.

¹⁵ R. C. Hoffmann, *An Environmental History of Medieval Europe* (New York, 2013), p. 6.

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Urban administrative records also reveal counterforces or shocks to public health programs. Epidemic disease, famines, disasters such as floods, storms and large fires, and political conflicts could all impact public health practices profoundly, at times unintentionally. The horsemen of the apocalypse sometimes affected many parts of the region at once. Such happened in the 1480s, when a plague epidemic swept through the region while an unsuccessful revolt against the newly empowered Maximilian I (1459–1519) brought several cities into crisis.¹⁶ Other shocks were far more local. For example, after a major fire in 1337, Deventer's magistrates decided to partially reimburse all inhabitants who rebuilt their houses with stone bricks and roof tiles to make the city safer.¹⁷ Thus, threats impacted societies and regions at various scales or levels, which levels affected each other.

Health programs, as part of urban sociopolitical negotiations, consistently found expression and justification in a discourse that revolved around the idea of the common good or public interest. The concept in local sources was variously referred to by the terms *ghemeen oirbair*, *goet nutscip* or *profite*, *bien public* or *commun*, *bonum communis*, *utilitas communis*, or *res publica*. It condoned interventions in the name of preserving peace and order, economic prosperity, safety, piety and civic prestige. It also stimulated debates on the balance between private or corporate and communal or public interests, and the spatiality of the latter. Several historians have noted the adaptation of the common good by competing political entities such as urban magistrates, nobles and guilds. This indicates the need to push back on the rhetoric (but not the term itself) and critically assess whose interests were actually being served by such claims.¹⁸ However, what has been largely overlooked in the present debate is that concerns for communal health and urban sanitation were integral to the pursuit of the common good. This also makes the concept much more environmental than it often appears in the historiography, where the sociopolitical and legal aspects seem to have been detached from their very practical, tactile material concerns: ships and sluices, wastes and waters, roads and gutters, animals, plants, peat and plague.

Who, then, is our Saint George, slaying the dragon? This study intends to escape an ameliorist view in which the medieval city functions as

¹⁶ J. Haemers, *De strijd om het regentschap over Filips de Schone – Opstand, facties en geweld in Brugge, Gent en Ieper (1482–1488)* (Ghent, 2014). See on extreme weather and disasters J. Buisman, *Duizend jaar weer, wind en water in de Lage Landen: 1300–1450* (Franeker, 1995).

¹⁷ See Chapter 1.

¹⁸ M. Boone and J. Haemers, “‘The Common Good’: Governance, Discipline and Political Culture”, in Van Bruaene, Boone and Blondé (eds.), *City and Society*, pp. 93–127; E. Lecuppre-Desjardin and A.-L. van Bruaene (eds.), *De Bono Communi: The Discourse and Practice of the Common Good in the European City (13th–16th c.)* (Turnhout, 2010).

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a hygienic nadir from which things slowly improved. In other words, it resists a dichotomy between a dirty premodern and clean modern era. Yet it also seeks to avoid an uncritical celebration of the accomplishments of fourteenth- and fifteenth-century urban governing elites as altruistic guardians of the city, fighting filth and disease for the greater good. Most importantly, it prioritises material and environmental adaptations to prevent disease over tracing curative medical practices. There is much to learn, indeed, from how individuals and groups perceived and negotiated health risks and sought to secure what they needed for their physical and spiritual well-being. Health-promoting or prophylactic practices revolved around what and who qualified as, to use anthropologist Mary Douglas' well-known adage, 'matter out of place', and who had the power to determine that.¹⁹ There was, however, no erasure of dirt; it was part of normalised and regulated urban life, part of an ordered city. Like the rich and the poor, or the dead and the living, the dirty and the clean reinforced one another and hence coexisted in medieval cities. Reconstructing the perceived order and logic behind communal health practices, with its negotiated tasks and responsibilities, is the goal of this book.

NEW HISTORIES OF HEALTH

As more than half of today's world population lives in cities, governing them in a way that preserves or even improves communal well-being and environmental sustainability will continue to challenge global leadership and local communities alike. The emergence of new epidemic threats and the resurfacing of older ones have underscored the importance of reflecting on how health risks exacerbate socio-economic, political and cultural tensions, and vice versa.²⁰ Moreover, studies on biopolitics (see below) emphasise the deeply political nature of public health and its reach into modes of daily coexistence. Public health policy makers and scholars also increasingly recognise the limitations of a narrow focus on 'pills and doctors'. They broaden their gaze not only to include laws and education, but especially the benefits of social, financial and spatial interventions changing behaviour and people's daily routines.²¹ Furthermore, a growing awareness of a future shaped by

¹⁹ M. Douglas, *Purity and Danger: An Analysis of Concept of Pollution and Taboo* (London, 2003).

²⁰ M. H. Green, 'The Black Death and Ebola: On the Value of Comparison', in M. H. Green (ed.), *Pandemic Disease in the Medieval World: Rethinking the Black Death* (Kalamazoo, 2015), pp. ix–xx. See on the current health topics and epidemics www.who.int/topics/en/.

²¹ T. Farley and D. Cohen. *Prescription for a Healthy Nation: A New Approach to Improving Our Lives by Fixing Our Everyday World* (Boston, 2005).

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environmental pollution, climate change and new pathogens and pandemics is prone to make public health (again) more ecological and spatial in its mindset. Some of these practical interventions, such as sugar taxes, non-smoking areas, green energy initiatives, cycling lanes to reduce car use, or digital monitoring of epidemic spread, are distinctly modern. However, scholars are becoming more conscious that comparable issues of population health in the past were framed in a broadly similar way. This redefinition or broadening thus enables new historical investigations. Although a view of the late medieval city as the apex of disease, chaos and dirt still looms in textbooks and popular culture, the new consensus among specialists is that the history of public health in Europe prior to 1500 can be retold. Preventative health practices existed before and beyond the Euro-American nation state and inquiries can therefore be extended back even to the earliest traces of civilisation. This has been demonstrated in particular by historians of Greek and Roman Antiquity,²² as well as by archaeologists of medicine, confirming that a lack of written sources does not mean a disinterest in governing health at the communal level.²³ Material culture and conflicts over material structures are also important sources for the present study, as a way to complement and juxtapose evidence from municipal administrative records, which are almost exclusively produced by governing elites.²⁴

²² Porter, *Health, Civilization and the State*, p. 4; V. M. Hope and E. Marshall (eds.), *Death and Disease in the Ancient City* (London, 2000); P. Horden, *Hospitals and Healing from Antiquity to the Later Middle Ages* (Aldershot, 2008); J. D. Hughes, *Pan's Travail: Environmental Problems of the Ancient Greeks and Romans* (Baltimore, 1994); H. King (ed.), *Health in Antiquity* (London, 2005); R. Parker, *Miasma: Pollution and Purification in Early Greek Religion* (Oxford, 1996); G. C. Jansen et al. (eds.), *Roman Toilets: Their Archaeology and Cultural History* (Louvain, 2011); A. O. Koloski-Ostrow, *The Archaeology of Sanitation in Roman Italy: Toilets, Sewers, and Water Systems* (Chapel Hill, 2015); C. Wazer, 'Between Public Health and Popular Medicine: Senatorial and Popular Responses to Epidemic Disease in the Roman Republic', in W. V. Harris (ed.), *Popular Medicine in Graeco-Roman Antiquity: Explorations* (Leiden, 2016), pp. 126–46.

²³ M. Jansen, 'Water Supply and Sewage Disposal at Mohenjo-Daro', *World Archaeology*, 21 (1989), 177–92; H. R. Harvey, 'Public Health in Aztec Society', *Bulletin of the New York Academy of Medicine*, 57 (1981), 157–65; S. B. Hanley, 'Urban Sanitation in Preindustrial Japan', *The Journal of Interdisciplinary History*, 18 (1987), 1–26; Y., Kawakita, et al. (eds.), *History of Hygiene: Proceedings of the 12th International Symposium on the Comparative History of Medicine – East and West* (Tokyo, 1991); G. Waite, 'Public Health in Pre-Colonial East-Central Africa', *Social Science and Medicine*, 24 (1987), 197–208; K. Stilt, 'Recognizing the Individual: The Muhtasibs of Early Mamluk Cairo and Fustat', *Harvard Middle Eastern and Islamic Review*, 7 (2006), 63–84; L. I. Conrad and D. Wujastyk (eds.), *Contagion: Perspectives from Pre-Modern Societies* (Aldershot, 2000); L. Tilley, *Theory and Practice in the Bioarchaeology of Care* (New York, 2015); J. Shaw and N. Sykes, 'New Directions in the Archaeology of Medicine: Deep-Time Approaches to Human-Animal-Environmental Care', *World Archaeology*, 50 (2018), 365–83.

²⁴ See especially Chapter 4.

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Just as a community strictly regulating and enforcing a ban on murder would not necessarily have to be conceived of as intractably violent, so there is no reason to dismiss as impractical or unrealistic the large amount of (prescriptive) sources attesting prophylactic policies produced by many Netherlandish cities. Several studies have begun to unearth this body of evidence, moving beyond an earlier outright dismissive view of public hygiene in Low Countries' historiography.²⁵ Key contributions are Peter Poulussen on environmental nuisances in early modern Antwerp; Petra Maclot's and Werner Pottier's edited volume on street and domestic sanitation in the same city; Cor Smit's study on sanitation in Leiden across five centuries; and several case studies on Belgian cities brought together in the proceedings of a conference entitled *L'initiative publique des communes en Belgique*.²⁶

These publications mainly belong to the first wave of pioneering studies on this subject in the Low Countries from the 1980s. While they are crucial and ground-breaking in outlining the research field, they also tend to draw on recent, modern criteria for health policies and are reluctant to adopt a more historicised definition and inclusive view of communal well-being. Poulussen argues that environmental awareness existed in the pre-industrial era, precisely because of municipal interests to protect the population's

²⁵ Historian and physician Martinus van Andel concluded in 1916 that the 'unhygienic' population of the late medieval Netherlands was 'being reckless, stupid and obstinate to such a degree, that it [...] frustrated the best efforts to protect it against the imminent dangers', thus making even well-meant preventative measures 'of no use'. M. A. van Andel, 'Plague Regulations in the Netherlands', *Janus*, 21 (1916), 410–44, pp. 438, 444.

²⁶ *L'Initiative publique des communes en Belgique: fondements historiques (Ancien Régime): actes Colloque international, Spa, 1–4 sept. 1982* (Brussels, 1984); P. Poulussen, *Van burenlust tot milieuhinder: het stedelijk leefmilieu, 1500–1800* (Kapellen, 1987); W. Pottier and P. Maclot (eds.), 'n Propere tijd!?: (on) leefbaar Antwerpen thuis en op straat (1500–1800) (Antwerp, 1988); C. Smit, *Leiden met een luchtje: straten, water, groen en afval in een Hollandse stad, 1200–2000* (Leiden, 2001); B. van den Hoven van Genderen, 'De vieze en ongezonde Middeleeuwen?' in R. Meens and C. van Rhijn (eds.), *Cultuurgeschiedenis van de Middeleeuwen: beeldvorming en perspectieven* (Zwolle, 2015) pp. 249–65; B. Vannieuwenhuyze and C. Deligne, 'La Spatialisation de la "pollution" dans les villes médiévales. réflexions à partir de la toponymie urbaine et du cas de Bruxelles', in I. Parmentier (ed.), *La recherche en histoire de l'environnement: Belgique – Luxembourg – Congo – Rwanda – Burundi* (Namur, 2010), pp. 89–110; C. Deligne, 'Stedelijke vervuiling in het verleden: een inleiding', *Jaarboek Ecologische Geschiedenis* (2007), 73–81; G. N. M. Vis, *Van 'vulliscuyl' tot huisvuilcentrale: vuilnis en afval en hun verwerking in Alkmaar en omgeving van de Middeleeuwen tot heden* (Hilversum, 1996); H. Deneweth, 'Public Safety, Hygiene and Disease Prevention', in *From Surgeons to Plague Saints: Illness in Bruges in the Sixteenth and Seventeenth Centuries* (Bruges, 2011), pp. 10–13; H. 't Jong, 'De mythe van de vuilnisbelt: een nieuwe benadering van hinderkeuren uit laat-middeleeuwse steden', *Millennium*, 22 (2008), 68–91. Notable forerunners are J. G. W. F. Bik, *Vijf eeuwen medisch leven in een Hollandse stad* (Assen, 1955); A. F. C. van Schevensteen, 'De hygienische maatregelen van het magistraat van Antwerpen in de 15e eeuw', *Geschiedenis der geneeskunde*, 71 (1927), 2479–92; A. F. C. van Schevensteen, 'Over pestepidemiën te Antwerpen in vroeger tijden', *Verslagen en mededelingen van de Koninklijke Vlaamse Academie voor Taal- en Letterkunde* (1932), 1055–92; M. A. van Andel, 'Public Hygiene in a Mediaeval Dutch Town', *Janus*, 18 (1913), 626–34.

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health, which he confirmed could be found from the earliest extant sources to the end of the *Ancien Régime* as one of the priorities of urban governance. Yet he also drew rather negative conclusions about the cleanliness of Netherlandish cities, which he asserted commonly had ‘refuse lying everywhere, often malodourous stagnant water in the canals, and horrible fumes rising from the many artisanal workshops’. Indeed, it was in spite of these circumstances that ‘human society could develop’.²⁷ Likewise, Frank Huisman sketched a bleak image of the northern city of Groningen around 1500, with open sewage and roaming animals, and where running water, sanitary facilities and waste collection services ‘were unknown’.²⁸ This was similar to the interpretations by, among others, Jean-Pierre Leguay and André Guillerme, who described a generally abominable state of urban sanitation and (water) pollution in French cities after the fifteenth century.²⁹ In Poulussen’s introduction to *’n Propere tijd*, the only edited volume on preindustrial urban sanitation in the Low Countries, he portrayed inhabitants as ‘imprisoned in a closed city’, ‘paralyzed by prejudice and ignorance’ and thus slow to respond to urgent challenges.³⁰ Later in the same volume, Leon Geyskens argued that while more research was necessary, the then-available archaeological evidence indicated that Antwerp was ‘one large rubbish dump’.³¹ By contrast, Petra Maclot stated that the ‘system was probably sufficient for solving problems with waste’, and the ‘situation [was] rather well under control’. This was, however, when taking into account that ‘the unpleasant aspects were considered less annoying’ by late medieval and early modern citizens. The same citizens did, however, do a better job at recycling than their twentieth-century ancestors.³² These diverging assessments demonstrate that among this group of pioneers the

²⁷ Poulussen, *Van burenlust tot milieuhinder*, p. 149.

²⁸ F. Huisman, ‘Stadsbelang en standsbesef: gezondheidszorg en medisch beroep in Groningen 1500–1730’, unpublished Ph.D. thesis, Erasmus University Rotterdam (1992), p. 14.

²⁹ A. E. Guillerme, *The Age of Water: The Urban Environment in the North of France A.D. 300–1800* (College Station, TX, 1988); J.–P. Leguay, *La pollution au Moyen Âge dans le royaume de France et dans les grands fiefs* (Paris, 1999); Higounet-Nadal, ‘Hygiène, salubrité, pollutions au Moyen Âge’, p. 92. Similar and more recent negative conclusions can be found in *ibid.*, *La rue au Moyen Âge*; E. Cockayne, *Hubbub: Filth, Noise & Stench in England 1600–1770* (New Haven, 2007); R. van Uytven, *De zinnelijke Middeleeuwen* (Louvain, 1998); pp. 193–6; R. E. Zupko and R. A. Laues, *Straws in the Wind: Medieval Urban Environmental Law, the Case of Northern Italy* (Boulder, 1996); On Iberia, Ieva Reklaityte states that ‘conditions of hygiene in urban areas in the medieval era were extremely fragile’. I. Reklaityte, ‘The Smell of Rotting Corpses Infected the Air’: Notes on Sanitation, Pollution and Urban Ecology in Al-Andalus’, in F. Sabaté (ed.), *Medieval Urban Identity: Health, Economy and Regulation* (Newcastle, 2015), pp. 13–23.

³⁰ Poulussen, ‘Inleiding’, pp. 12–13.

³¹ L. Geyskens, ‘Antwerpen: een puinhoop? Aspecten van afvalbeheer (16^e–18^e eeuw)’, in Pottier and Maclot (eds.), *’n Propere tijd*, pp. 22–6, at p. 25.

³² P. Maclot, ‘De afvoer van vast afval en van de gebruikswaters binnen het traditionele Antwerpse woonhuis (1500–1800)’, in P. Maclot and W. Pottier (eds.), *’n Propere tijd*, pp. 121–52, at p. 122.