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Geltner, G.

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THE PATH TO PISTOIA: URBAN HYGIENE BEFORE THE BLACK DEATH*

I

THE TYRANNY OF THE BLACK DEATH IN PUBLIC HEALTH HISTORIOGRAPHY

The Black Death has shaped a lopsided profile of European history. Despite all the pain inflicted upon the region during the first wave of the second plague pandemic (1346–53), there is a sense of inertia in scholars' attachment to a pre-/post-Black Death periodization — one that cuts across fields as diverse as social and economic history, politics, medicine, art, religion and literature.¹ Historians commenting specifically on community prophylactics in pre-modernity likewise tend to share a view of the Black Death as a watershed moment, even as the field of Black Death studies itself brims with complex debates on the pandemic's epidemiology and the role it played in European and global health history.² Many

* The author thanks the staff at the Archivio di Stato di Pistoia; Ingrid Bleynat, Janna Coomans, Monica Green, Jamie Kreiner, Jane Stevens Crawshaw, Maartje van Gelder and Claire Weeda for their help and insightful comments on earlier drafts; Taylor Zaneri for producing the map; and the European Research Council (grant no. 724114).

¹ A recent selection includes Klaus Bergdolt, *Der Schwarze Tod in Europa: Die Große Pest und das Ende des Mittelalters*, 4th edn (Munich, 2017), which has an eponymous Italian translation; Roger French *et al.* (eds.), *Medicine from the Black Death to the French Disease* (Aldershot, 1998); Judith B. Steinhoff, *Sienese Painting after the Black Death: Artistic Pluralism, Politics, and the New Art Market* (Cambridge, 2007); Katherine L. French, *The Good Women of the Parish: Gender and Religion after the Black Death* (Philadelphia, 2013); and, most recently, David Wallace (ed.), *Europe: A Literary History, 1348–1418*, 2 vols. (Oxford, 2016). By contrast, works that trace developments up until the plague seem to be doing so polemically, that is, as an attempt to stress continuity or else problematize an accepted rupture. See Michael R. McVaugh, *Medicine before the Plague: Practitioners and their Patients in the Crown of Aragon, 1285–1345* (Cambridge, 1993); Bruce M. Campbell and Ken Bartley, *England on the Eve of the Black Death: An Atlas of Lay Lordship, Land and Wealth, 1300–49* (Manchester, 2006). A recent refutation of the first plague pandemic as a curtain call for Late Antiquity is Lee Mordechai and Merle Eisenberg, 'Rejecting Catastrophe: The Case of the Justinianic Plague', *Past and Present*, no. 244 (Aug. 2019).

² The former will be dealt with below. Examples of the latter include Lester K. Little, 'Plague Historians in Lab Coats', *Past and Present*, no. 213 (Nov. 2011); Monica H. Green, 'Taking "Pandemic" Seriously: Making the Black Death Global', *The Medieval Globe*, i (2014).

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health historians also seem to acquiesce in or further the notion that the plague precipitated radical change by forcing urban governments to combat, at long last, population-level risks, by developing and implementing city-wide programmes and eventually establishing health boards.³ The dynamism that such views underscore helpfully challenges the innovativeness of eighteenth-century and later developments, but it nonetheless obeys a teleology that designates the second pandemic as a *terminus a quo* for genuine public health. Thus, beyond framing the plague's onset as an indisputable moment (if not an outright agent) of change, the tendency promotes, however inadvertently, the view that rupture was inevitable, stability the *explanandum*, in a civilization finally woken from its hygienic slumber.

The Tuscan city of Pistoia is a famous case in point, thanks to a set of health-related ordinances published by its government on 2 May 1348, ostensibly in anticipation of a great mortality.⁴ It is the earliest such text to have been preserved from the Black Death era, and as such has offered scholars a seductive example of one community's prophylactic turn, from an accepted precarity of life to a conscious attempt to protect itself beyond a small elite circle. To be sure, plague had an impact on numerous walks of life, well beyond people's perceptions of disease and how to fight it. Yet the specific framing of a prophylactic turn in its wake falls prey to an association of public health with modernity's achievements. For, beyond putting disasters and epidemiology at the centre of theories of change, with little regard to further or indeed alternative agencies, it ignores earlier measures and policies that the ordinances consciously built upon. Moreover, the prevalent view of the Black Death as a singular catalyst depicts cities such as Pistoia, and their regimes of preparing for and responding to disease, as outliers and as 'unsuccessful' ones at that, perhaps

³ Élisabeth Carpentier, *Une ville devant la peste: Orvieto et la peste noire de 1348* (Paris, 1962), 131; Irma Naso, *Medici e strutture sanitarie nella società tardo-medievale: Il Piemonte dei secoli XIV e XV* (Milan, 1982), 56–7 and 63–73; Samuel K. Cohn Jr, *The Black Death Transformed: Disease and Culture in Early Renaissance Europe* (London, 2002), 223–52; Martha Bayless, *Sin and Filth in Medieval Culture: The Devil in the Latrine* (London, 2012), 41; Zlata Blažina Tomić and Vesna Blažina, *Expelling the Plague: The Health Office and the Implementation of Quarantine in Dubrovnik, 1377–1533* (Montreal, 2015). The century and more that had elapsed, even in Italy, between plague's onset and the establishment of health boards is often elided in these discussions.

⁴ Alberto Chiappelli, 'Gli ordinamenti sanitari del Comune di Pistoia contro la pestilenza del 1348', *Archivio Storico Italiano*, 4th ser., xx (1887).

inevitably so from a modern biomedical point of view.⁵ Yet Pistoia's regulations, which were typical of those outside Italy as well, mostly extended rather than foreshadowed urban (and court, military and monastic) hygienic traditions, which were in turn indebted to Hippocratic and Galenic medicine. It was, in fact, this consistency — in theory, policy and practice — that lent the feted Pistoian text its polished look, and led scholars to regard it as unique and groundbreaking.

Section II develops this claim by explicating the preventative medical theories behind the 1348 ordinances (and earlier policy) and tracing their deeper scientific roots in antiquity. The latter nourished Pistoia's (and numerous other cities' and groups') preventative practices during the first major wave of urbanization in Western Europe. Section III, based on earlier Pistoian archival documents, recovers some of the city's pre-existing programmes and connects them with the prophylactic theories that continued to inform local magistrates and residents in later eras. In particular, it highlights the role of public-works officials known as road-masters (*viarii*) in tending to the urban healthscape, as was their wont in scores of settlements throughout the peninsula. The final section IV seeks to account for scholars' general neglect of *viarii* and other humble healthscapers, arguing that the latter's low profile owes more to a certain modernist bias in public health historiography than to any real shortage of evidence about their role in keeping cities safe and healthy. Tracing the long-term urban path of public health history thus interrogates a prevalent modernist preoccupation with industrialization and epidemic disease, and exposes an often ideologically charged understanding of the pre/modern divide. Indeed, it questions the merit of such a periodization in the first place when it comes to the history of communal health.

⁵ Bergdolt, *Der Schwarze Tod in Europa*, 183–90, uses the Pistoian text to make this very point, working directly from Chiappelli's edition. Caroline Arcini *et al.*, 'Living Conditions in Times of Plague', in Per Lagerås (ed.), *Environment, Society and the Black Death: An Interdisciplinary Approach to the Late-Medieval Crisis in Sweden* (Oxford, 2016), 131–2, juxtaposes Italian responses with typical approaches in Sweden, which tended to focus 'only' on religious observance and left preventative practices as regards burials, for instance, unchanged and thus lethal.

II

URBAN HYGIENE IN THE 1348 STATUTES

Students of the Black Death have long been familiar with a set of twenty-three by-laws composed by Pistoia's government and entitled the *Ordinamenta sanitatis tempore mortalitatis*. More recently the text has also circulated in a redacted English version as the 'Ordinances against the spread of plague, Pistoia, 1348', part of a magisterial and highly influential reader edited by Rosemary Horrox.⁶ The latter title's departure from the Latin original echoes the formulation already chosen by the text's late nineteenth-century editor, who — armed with distorting hindsight — identified *mortalitas* as plague, rendering it the direct object of the regulations rather than their general context.⁷ That is not to deny that a threat was imminent when the authors drafted these ordinances. But plague had yet to reach Pistoia, and, to the extent that policy makers sought to articulate the hazards facing the city in those days, they mostly stressed staple and ongoing concerns such as social disorder, air and water pollution, waste management, access to food and food quality. Plague was marginal, or at least marginalized, in this scheme.

The ordinances fill six large folios in Pistoia's collection of *statuti*, and are immediately followed by several additions and

⁶ Rosemary Horrox (trans. and ed.), *The Black Death: A Reader* (Manchester, 1994), 194–205. With merit the volume continues to shape major discussions in the field and introduces numerous scholars to the complexity of Black Death studies. A recent search on Google Scholar yielded more than 250 citations, comparing very favourably by the same metric to a sampling of similar volumes in the same series, which now comprises more than thirty titles. According to Worldcat.org, *Black Death* has been reprinted ten times since its original publication and now has a digital version as well. A spokeswoman for Manchester University Press confirms that the volume is 'the most popular book in the series and has the highest usage of all the books in the online resource, Manchester Medieval Sources Online' (personal correspondence with Emma Brennan, 11 Jan. 2018).

⁷ Chiappelli, 'Ordinamenti sanitari'. Numerous later texts described the events of 1346–53 as a *mortalitas* or *pestilentia mortalitatis*, so it is possible that the text's title (which could be a later addition) is meant to convey just that. But even if so, framing the text and its modern edition and translation as anti-plague ordinances diverges from the spirit in which the original ordinances were written. Another English translator of the text thus more sensibly entitled them 'Ordinances for Sanitation in a Time of Mortality', at <http://www2.iath.virginia.edu/osheim/pistoia.html> (accessed 25 Oct. 2018).

revisions (see Appendix).⁸ As their Preamble states, the by-laws were composed by ‘certain wise *popolani* elected and appointed by the Elders and the *Gonfaloniere di Giustizia* in order to conserve the health of the human body and to restrain and resist various and diverse pestilences’.⁹ A new or specific threat does not frame the entire text, although the first rubric, concerning the movement of humans into and out of the city, refers to the ‘cause of sickness that currently encroaches upon the areas surrounding the city’ (*materia infirmitatis que ad presens insisit in partibus circumstantibus civitatis Pistorij*).¹⁰ It is also the first by-law to be cancelled, three weeks later. The next item is a general prohibition on importing or burning used cloth. Ten regulations then follow (nos. 3–12) describing licit funerary practices, from which elites were generally exempt, covering the correct mode of carrying and burying the corpse, the appropriate dress code of mourners, the movement of kin and widows, access to the deceased’s home and communicating about residents’ death and burial. The subsequent group of items (nos. 13–20) deals with the retail sale of meat, including accepted butchering practices, display, weights and prices. Rubric 21 forbids the exportation of particularly nutritious foods and the penultimate item prohibits tanning within the city’s walls. A final passage reiterates the city officials’ responsibility to enforce the ordinances, and underscores how the foregone rules are mutually reinforcing tactics in an ongoing and overarching health-promoting strategy, subject to similar fines for their neglect.¹¹

⁸ Archivio di Stato di Pistoia [henceforth ASPi], Comune, Statuti 5, fos. 42^v–45^f (2 May 1348). For the archival context of the ordinances as well as a reproduction of its first folio, see Ezelinda Altieri Magliozzi (ed.), *L’Archivio del Comune di Pistoia conservato nell’Archivio di Stato*, Inventari e Catalogi Toscani 16 (Florence, 1985), 26–8 and pl. 7.

⁹ ASPi, Comune, Statuti 5, fo. 42^v: ‘Infrascripta sunt quedam ordinamenta et provisiones facta et composta per quosdam sapientes viros populares civitatis Pistorij, electos et deputatos per dominos Antianos et Vexilliferum Iustitie dicte civitatis super sanitate humani corporis conservanda et replimendo et resistendo variis et diversis pistolentis’.

¹⁰ *Ibid.*

¹¹ Chiappelli, ‘Ordinamenti sanitari’, accentuates the division between these two groups in ways that would not be evident from the original text. The latter does contain a marginal pointer (possibly a later addition), but not a separate title, on fo. 44^r, where the meat-related statutes commence. On officials’ audits, see G. Geltner, ‘Fighting Corruption in the Italian City-State: Perugian Officers’ End of Term Audit (*sindacato*) in the Fourteenth Century’, in Ronald Kroeze, André Vitória and G. Geltner (eds.), *Anticorruption in History: From Antiquity to the Modern Era* (Oxford, 2017).

Despite its broad scope and (as we shall see) largely derivative nature, the text's appearance in its edited Latin and English versions encourages readers to accept two questionable assumptions: first, that it encapsulates municipal responses to (impending) epidemic disease; and, second, that it was uniquely occasioned by the onset of a plague epidemic. Beyond a slight anachronism, neither assumption recognizes the *Ordinamenta's* rich prophylactic background and common rationale. Moreover, given the entrenched association of public health with a common understanding of modernity that now prevails, the absence in either edition of an explicit reference to that background and rationale can be misleading. Obscuring magistrates' capacity to confront new and indeed extreme situations sustains the fiction that the city awoke in May 1348 to address the logical extension of an ongoing problem, namely hygienic apathy. However, neither ignorance nor lethargy typified earlier Pistoian policy when it came to the city's health. Nor should this come as a surprise, since it was urbanization rather than plague that had placed Pistoian society under unprecedented pressure in the first place, raised awareness of population-level hazards and incentivized creating solutions and promoting preventative actions, including those inspired by earlier traditions.¹² None of this, to repeat, is to argue that the plague was inconsequential, but rather that historians' general focus on it is misplaced in construing the second pandemic as a unique trigger to community prophylactics. The well-documented and long-running engine of the latter was in fact urbanization.

The fact that Pistoia's chapters on funerals and meat sales were expressly seen by their authors as complementary already nods at the deeper roots of the city's preventative health programmes and contemporaries' concept of health. As Horrox rightly

¹² Agostino Paravicini Bagliani, 'La mobilità della Curia romana nel secolo XIII: Riflessi locali', in *Società e istituzioni dell'Italia comunale: L'esempio di Perugia (secoli XII–XIV)*, 2 vols. (Perugia, 1988); Peregrine Horden, 'Ritual and Public Health in the Early Medieval City', in Sally Sheard and Helen Power (eds.), *Body and City: Histories of Urban Public Health* (Aldershot, 2000); Abigail Agresta, 'From Sinner to Stranger: Plague Response in Late Medieval Valencia', forthcoming in *Speculum*; Carole Rawcliffe, 'Mental Illness and Mental Health in the Late Medieval English Monastery', forthcoming in *Studies in Medieval and Renaissance History*; G. Geltner, 'In the Camp and on the March: Military Manuals as Sources for Studying Premodern Public Health', *Medical History*, lxxiii (2019).

underscored by situating the ordinances in her reader alongside other scientific texts, one string that binds them together is a humoral theory of health, developed by Hippocratic and Galenic medicine for at least two millennia. Humoral medicine sought to define and preserve the ideal balance (*symmetria*) between the four bodily humours (blood, yellow bile, black bile and phlegm) in different bodies and under changing social circumstances and environmental conditions. In pursuing this goal, Galenism recognized two vectors of disease transmission (miasma and ocular intromission; see below) and saw personal and communal health as strongly shaped by external factors that came to be known since Late Antiquity as the ‘six non-naturals’, namely air quality, sleep and wakefulness, exercise and rest, food and drink, secretion and excretion, and mental affections.¹³

From this enduring perspective, staying healthy before (and well after) the Black Death often meant shunning contact with decaying organic matter such as blood, excrement and carcasses, as well as keeping them out of sight; and avoiding the bad vapours of miasmatic air, which could penetrate one’s body through the mouth, nostrils and pores. (The designs of anti-plague masks in later centuries were based on the same principle, with their eyehole covers and protruding noses containing a selection of herbs that acted as a prophylactic.)¹⁴ At the same time, balancing the four bodily humours required the right combination — per person, region, season and climate — of intake and excretion, physical behaviour, and air and food quality. At a personal or domestic level, pursuing preventative behaviours to promote health was challenging enough; maintaining such standards city-wide required significant resources and a broad co-operation among different stakeholders.

Nevertheless, many regimes, including those governing Pistoia, pursued such ideals. Hence the insistence of the 1348 text on meat quality and the availability of food, which clearly

¹³ L. J. Rather, ‘The “Six Things Non-Natural”: A Note on the Origins and Fate of a Doctrine and a Phrase’, *Clio Medica*, iii (1968); Luis García-Ballester, ‘On the Origins of the “Six Non-Natural Things” in Galen’, in Jutta Kollesch and Diethard Nickel (eds.), *Galen und das hellenistische Erbe: Verhandlungen des IV. Internationalen Galen-Symposiums veranstaltet vom Institut für Geschichte der Medizin am Bereich Medizin (Charité) der Humboldt-Universität zu Berlin 18–20 Sept. 1989* (Stuttgart, 1993).

¹⁴ William Landon, ‘Plague in Europe, 1500–1770s’, in Joseph P. Byrne (ed.), *Encyclopedia of Pestilence, Pandemics, and Plagues*, 2 vols. (Westport, Conn., 2008), ii, 505.

echo Galenic principles of health, broadly applied.¹⁵ For instance, chapter 13 aims to prevent the bodies of the living from becoming ill ('ut . . . non infirmentur') due to the consumption of decaying and bad food ('propter putredinem et pravam comestionem').¹⁶ The mere presence and visibility of human corpses, just like animal carcasses, was likewise widely seen as dangerous to residents' health. Chapter 21 accordingly draws an explicit link between the availability of diverse foods in the city and the preservation of health therein ('ut melius sanitas possit conservari').¹⁷ The subsequent chapter focuses on air quality, another non-natural, by declaring that tanning may not occur within the city's walls 'so that stench and putridity will not hinder people' ('ut fetor et putredo hominibus obesse non possit').¹⁸ Neither rubric refers to a particular *mortalitas*, but both are clearly preventative, healthscaping measures, interventions designed to ensure that Pistoia remains a place where health could bloom.

Last but not least, the by-laws dealing with funeral and burial arrangements and interaction with a deceased person's property and kin, are as much about public health as civic order — to the extent that a clear distinction holds. The passages are decidedly preventative and harm-reductive, with direct references to miasma theory. For instance, rubric 3 insists on sealing a deceased person's coffin 'so that no stench could exit from it' ('ut nullus fetor exinde exiri possit'); and rubric 4 decrees a minimum burial depth of two and a half *bracchie* (about 1.45 metres) meant 'to prevent the foul stench emanating from the bodies of the deceased' ('ad evitandum turpem fetorem quem reddunt corpora mortuorum') — a genuine risk rather than a momentary nuisance.¹⁹ What is more, funeral regulations, especially those forbidding the tolling of bells and elaborate displays of grief, are preventative too in the sense that they have deep roots in communal policing, as Carol Lansing has demonstrated for the Italian peninsula more broadly.²⁰ And as

¹⁵ Janna Coomans and G. Geltner, 'On the Street and in the Bathhouse: Medieval Galenism in Action?', *Anuario de Estudios Medievales*, xliiii (2013).

¹⁶ ASPi, Comune, Statuti 5, fo. 43^v.

¹⁷ *Ibid.*, fo. 44^r.

¹⁸ *Ibid.*

¹⁹ *Ibid.*, fos. 42^v–43^r.

²⁰ Carol Lansing, *Passion and Order: Restraint of Grief in the Medieval Italian Communes* (Ithaca, NY, 2008), 48–72.

Gregory Roberts has recently shown, foreign podestà throughout Italy also clamped down on violations because of their potential to stir emotions and bring about armed vendettas between rival urban factions, especially in cases of premature and violent deaths.²¹

Funerals were thus an ongoing concern of Pistoia's government, sensitive rituals whose regulation officials could justify on the grounds of urban peace and decorum. For instance, on 25 June 1330, the general council decreed the precise number and identity of funeral participants, the quality and quantity of incense and wax candles to be used, the decorations allowed to cover the coffin, and how the event may be announced, including the use of criers and bells. Beyond participating in a broader government strategy to shape desirable behaviours, these prescriptions can be seen as prophylactic measures as well, given the Galenic inclusion of fear — a major emotional affectation — among the six non-naturals and its common recognition as a cause of disease.²² The text also prescribed how quickly bodies were to be handed over for burial and to whom, and ordered that the corpse be carried in a coffin or a covered stretcher (*in bara seu catalecto*), that the cortege remain in the church only for the duration of the ceremony, and that no one should linger, eat or drink in or near the home of a deceased person for a week, except direct kin.²³ These ordinances, like their echoes in the 1348 text, mostly take for granted their prophylactic worth, either for urban order or public health, as with numerous other laws and their moral and health underpinnings. Even if the urgency of enforcing certain protocols was decidedly greater in May 1348, their preventative value was by then firmly established and put to use.

²¹ Gregory G. Roberts, *Police Power in the Italian Communes, 1228–1326* (Amsterdam, 2019), chs. 1 and 5.

²² As Samuel K. Cohn Jr, *Cultures of Plague. Medical Thinking at the End of the Renaissance* (Oxford, 2010), 266–7 and 271–7, points out, tractates focusing on fear as both cause and consequence of plague coincide with the Black Death. Yet understanding fear as an individual- and population-level threat has far deeper roots in Galenic thought, whose popularity in Western Europe dates at least to the thirteenth century. See William F. MacLehose, 'Fear, Fantasy and Sleep in Medieval Medicine', in Elena Carrera (ed.), *Emotions and Health, 1200–1700* (Leiden, 2013); Adil S. Gamal (ed.), *Medieval Islamic Medicine: Ibn Ridwan's Treatise 'On the Prevention of Bodily Ills in Egypt'*, trans. Michael W. Dols (Berkeley, 1984), 112–13.

²³ ASPi, Comune, Raccolte 5, fos. 70^r–72^r.

III

COMMUNAL PROPHYLACTICS BEFORE THE PLAGUE

As the previous passage has begun to show, Pistoia is richly documented for the consular and communal eras,²⁴ with statutes, council deliberations and other records aplenty, some dating to the later twelfth century.²⁵ This fine state of archival preservation helps illuminate urban governance measures, including those related to safety, cleanliness and disease prevention, for nearly a century and a half before plague's onset. Specifically, it demonstrates that Pistoians' preventative-hygiene arsenal had long included pertinent market and labour regulations, monitoring the town's walls and boundaries, enforcing burial and funeral protocols, managing waste disposal, reducing air and water pollution, providing quality control of food and artisanal production, and ensuring the safe movement of men, animals and produce into and from the city. In addition to the Galenic principles that the 1348 ordinances drew upon, therefore, earlier policies and practices steered the city's preparations, especially its articulation of officials' remit. These were at least as old as the community whose health they sought to protect.

For instance, the city's earliest surviving statutes, probably issued in 1177, instruct consuls to ensure that 'people and their goods may come and go safely' ('ut homines possint ire et redire et stare secure').²⁶ From a present-day health perspective, this formulation may strike some readers as narrower than it did original audiences. The safe conduct of human, animal and

²⁴ See David Herlihy, *Medieval and Renaissance Pistoia: The Social History of an Italian Town, 1200–1430* (New Haven, 1967); Giovanni Cherubini (ed.), *Storia di Pistoia*, ii (Florence, 1998); Giuliano Pinto (ed.), *Storia di Pistoia*, iii (Florence, 1999); Natale Rauty, *Pistoia: Città e territorio nel Medioevo* (Pistoia, 2003).

²⁵ Altieri Magliozzi, *L'Archivio del Comune di Pistoia*, provides a helpful orientation to the medieval holdings. The entire run of the extant fourteenth-century council deliberations has been indexed and inventoried: *Le Provvisioni del Comune di Pistoia (sec. XIV)*, ed. Giampaolo Francesconi, Simona Gelli and Federica Iacomelli, *Fonti Storiche Pistoiesi*, xxi (Pistoia, 2015). The traditional dating of some key public documents to 1117 has been challenged by Peter Lütke Westhues, 'Beobachtungen zum Charakter und zur Datierung der ältesten Statuten der Kommune Pistoia aus dem 12. Jahrhundert', *Quellen und Forschungen aus italienischen Archiven und Bibliotheken*, lxxvii (1997). He makes a compelling case for their composition in 1144/5 or, more likely, 1177.

²⁶ *Lo Statuto dei consoli del Comune di Pistoia: Frammento del secolo XII*, ed. Natale Rauty and Giancarlo Savino (Pistoia, 1977), 13 (52).

artisanal traffic was far more than a commercial or political necessity.²⁷ The flow of all matter (including air and water) into and out of the city participated in maintaining the city's balanced dynamism, or what environmentalists today call urban metabolism, a major aspect of which was the regular input of energy and release of goods and effluence to ensure urban health and population resilience.²⁸ As Richard Hoffmann notes, waste removal in particular was designed to promote communal health according to the era's reigning medical paradigm.²⁹ Indeed, in Pistoia as elsewhere, the accumulation of filth and physical obstacles presented a known hazard. Apart from a potential cause of injury, their visibility to residents and their capacity for releasing miasmatic fumes were thought to lead to the contraction of disease and have a negative impact on the population at large.³⁰ The intertwined cleanliness and traversability of land and water routes were thus of paramount concern to political elites, not only for the sake of lubricating the economy's wheels, but also for maintaining a risk-free environment and buttressing claims to legitimate rule. The pursuit of a constant energy supply and timely waste removal was ideologically inscribed onto the city's infrastructure, a technological regime also underscored by the regulation's explicit reference to 'people' (*homines*) rather than the far more restrictive term 'citizens' (*cives*) or looser appellation 'residents' (*habitatores*).

There is in other words an emic prophylactic-health perspective to be gained from tracing urban communities' care for the condition of roads and other infrastructural nodal points

²⁷ Thomas Szabó, *Comuni e politica stradale in Toscana e in Italia nel Medioevo* (Bologna, 1992), 195–234, is the most comprehensive study to date on the Pistoian road network from a political and economic perspective.

²⁸ On the constraints under which pre-modern Europeans drew their energy, see Astrid Kander, Paolo Malanima and Paul Warde, *Power to the People: Energy in Europe over the Last Five Centuries* (Princeton, 2013), 37–80. On output, see Joel A. Tarr, *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective* (Akron, Ohio, 1999); and Nik Heynen, Maria Kaika and Erik Swyngedouw (eds.), *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism* (London, 2006).

²⁹ Richard C. Hoffmann, 'Footprint Metaphor and Metabolic Realities: Environmental Impacts of Medieval European Cities', in Paolo Squatriti (ed.), *Natures Past: The Environment and Human History* (Ann Arbor, Mich., 2007).

³⁰ Chiappelli, 'Ordinamenti sanitari', XIII–XIV (12–13). For Rome, see Luigi Schiaparelli, 'Alcuni documenti degli *Magistri aedificiorum urbis* (secoli XIII e XIV)', *Archivio della R. Società Romana di Storia Patria*, xxv (1902), X (21 Oct. 1306), 51.

such as gates, squares, markets, wells, canals and aqueducts. Next to appointing public physicians, building hospitals, curbing violence, reducing the presence of social and religious undesirables and monitoring the quality of produce in markets, urban governments such as Pistoia's saw the upkeep of public works (or sites appropriated as such), including the enforcement of behavioural norms thought to have an impact on them, as keys to promoting communal health. Accordingly, and in lockstep with the city's physical growth in the twelfth and thirteenth centuries, regimes began institutionalizing works, and especially roads officials (*viarii*), and endowing them with an explicit preventative mandate. Neither linear nor steady, the development of these offices was nonetheless premised on a shared sense of the podestà's responsibility to build infrastructures, maintain them and keep them clear of obstacles (*ut faciat exgomborare*). This remit was already visible in Pistoia's twelfth-century documents.³¹ The regime's obligation to allow all matter to come and go freely rendered the roads officer especially significant for the city's productivity, cleanliness and overall health, and not merely a cog in its economic machinery.

While the foreign podestà's oath required him to ensure traversability within the city's walls as well as beyond them to a distance of two miles, he never bore sole responsibility for it.³² Within two weeks of their entry into office, Pistoia's highest-ranking officials or consuls had to appoint two local men from each of the city's quarters, also known as gates (*porte*). The latter were expected to 'concern themselves with the walls and canals of the city, both old and new, lest they disintegrate; and with public roads and streets, lest they become blocked; and with dung, lest it be [left] along the roads in the old city of Pistoia'³³ —

³¹ *Statuti di Pistoia del secolo XII, reintegrati, ridotti alla vera loro lezione, ed illustrate*, ed. Francesco Berland (Bologna, 1882), nos. 27 and 62 (31 and 56–7, respectively).

³² *Ibid.* *Statuti di Pistoia del secolo XII*, ed. Berland, 95 (75): 'Vias publicas restringi, me sciente, non permittam in civitate Pistoria nec in eius burgis nec infra duo milliaria prope civitatem in meo dominio; et homines mittam, quos iurare faciam ut patent; et fortiam et adiutorium eis inde dabo'. See also *ibid.*, 98 (81) on preventing water from running; 112 (82) on the maintenance of wells; and 150 (102–3) on the protection of fields. A parallel to the first obligation is in *Statuti Pistoiesi del secolo XII*, ed. and trans. Natale Rauty (Pistoia, 1996), 'Breve consolum' 12.1 (147).

³³ *Statuti di Pistoia del secolo XII*, ed. Berland, 196: 'Faciam iurare ipsos duos homines, ut habeant curam et studium de muris et fossis civitatis, veteribus et novis, ne dissipentur, et de viis et stratis publicis, ne constringantur, et de letamine,

(cont. on p. 15)

that is, the area delimited by the city's Roman walls. This combination of a foreign and centralized office on the one hand, and local men representing neighbourhood interests on the other, characterized the organization of preventative health interventions for many decades to come.³⁴

A gap in the records occludes much of the roads officials' activities during the thirteenth century, but they probably remained important stakeholders in community prophylactics during the city's demographic and physical expansion.³⁵ Shedding occasional light on the maintenance of infrastructures, criminal court records attest that residents and officials paid regular attention to the flow of road traffic and water along the Ombrone River, Pistoia's main water conduit, as well as smaller waterways. In July 1293, for instance, a number of people were fined 100 soldi each for diverting river water meant for provisioning the city, feeding mill races and carrying waste.³⁶ Such prosecutions highlight how urban order depended on a sufficient availability of hydraulic energy for the intertwined tasks of artisanal production and waste disposal. When water stood still (or flowed to the wrong places) and mill rotors lay idle, the community's health became visibly compromised. Similarly, one could hear health, too: it was the sound of running water, for silence spelled disruption, blockage and hence danger.

Reducing health risks could take other administrative forms as well. The 1296 statutes ordered the election of four men, one from each of the city's quarters, and charged them with collecting and removing rocks from their neighbourhoods and keeping streets clean 'so that children will not have stones to

(n. 33 cont.)

ne fiat per vias in civitate veteri Pistorii' (123). The addition likely dates from the twelfth century as well.

³⁴ See G. Geltner, *Roads to Health: Infrastructure and Urban Wellbeing in Later Medieval Italy* (Philadelphia, 2019), ch. 1.

³⁵ Alberto Cipriani, 'Pistoia fra la metà del duecento e la Peste nera', in *Le città nel Mediterraneo all'apogeo dello sviluppo medievale: Aspetti economici e sociali*, Diciottesimo convegno internazionale di studi, Pistoia 18–21 May 2001 (Pistoia, 2003), summarizes the city's demographic historiography, confirming the city's population probably peaked in the later thirteenth century at 11,000 while a parallel process in the *contado* culminated in around 24,000 inhabitants.

³⁶ ASPI, Opera di San Jacopo 1, fos. 165^v, 166^v–167^v, 169^f.

throw at one another and horses will not be hurt by them when they race, or persons standing to watch them race'.³⁷ A later rubric names judges who are responsible for assessing damages (*iudices de damnis datis*). They are also tasked with promoting community well-being, including the proper construction of latrines, removal of dung, monitoring of infrastructures and ensuring that pigs do not roam the city freely and endanger residents and visitors.³⁸ Furthermore, although these statutes are silent about lepers, magistrates addressed the potentially menacing presence of the blind, reflecting a common perception of impaired vision as both a physical and moral danger. Blindness was also thought, along with other types of physical impairment, to lead to another moral danger, namely idleness and illegitimate poverty.³⁹ It is perhaps this combination that underpins a prohibition on blind people being hosted within the city walls by residents other than their direct kin or local hospitals.⁴⁰ A similar strategy informs the 1348

³⁷ *Statutum Potestatis Communis Pistorii (1296)*, ed. Lodovico Zdekauer (Milan, 1888), i, LXX: 'Ordinamus quod eligantur in civitate Pistorii per camerlingos communis iiii.^{or} homines, unus pro porta, qui sint vetturales, qui teneantur, scilicet quilibet in sua porta, recolligere lapides per vias publicas et ipsas vias de lapidibus mundare et purgare et ipsos lapides asportare de ipsis viis, ad hoc, ut pueri non habeant lapides paratos ad se percutiendos et ut equi non offendantur a lapidibus, quando currunt, nec persone stantes ad videndum currere ipsos equos. Et habeat quilibet eorum in sex mensibus a comuni sol. viginti f. p.' (41).

³⁸ *Ibid.* *Statutum Potestatis Communis Pistorii (1296)*, ed. Zdekauer, iiii ('Tractatus iudices de damnis datis'), LVIII–LXVI (174–7).

³⁹ On the nexus of blindness, sin and moral contagion, see Irina Metzler, *Disability in Medieval Europe: Thinking about Physical Impairment in the High Middle Ages*, c.1100–c.1400 (London, 2006), 38–55; Irina Metzler, *A Social History of Disability in the Middle Ages: Cultural Considerations of Physical Impairment* (London, 2013), 154–98; Carole Rawcliffe, *Urban Bodies: Communal Health in Late Medieval English Towns and Cities* (Woodbridge, 2013), 97–104. As these works show, medieval attitudes towards blind people and blindness were scarcely uniform or stable, but distinctions between congenital, punitive and labour-related conditions were hard to make, much like among other visibly manifest forms of impairment. See also Moshe Barasch, *Blindness: The History of a Mental Image in Western Thought* (New York, 2001), 92–103; Zina Weygand, *The Blind in French Society from the Middle Ages to the Century of Louis Braille*, trans. Emily-Jane Cohen (Stanford, 2009), 11–23; Ephraim Shoham-Steiner, *Involuntary Marginals: Marginal Individuals in Medieval Northern European Jewish Society* [Hebrew] (Jerusalem, 2008), 195–206; Kristina L. Richardson, *Difference and Disability in the Medieval Islamic World: Blighted Bodies* (Edinburgh, 2012).

⁴⁰ *Statutum Potestatis Communis Pistorii (1296)*, ed. Zdekauer, iii, LXXXX: 'Et quod nullus cechus moretur, nec aliqua persona eum hospitetur in civitate Pistorii infra muros' (130); iii, CXVII: 'nisi in sua domo propria et hospitalibus et locis piis et religiosis et cum sua familia tantum' (139).

regulations on access to dead people's (rather than only plague victims') homes, goods and families, also underscoring the government's competence in defending the city from harm.

Cleanliness, or an absence of obstacles and pollutants, was central to legislators' and practitioners' desire to promote civic pride.⁴¹ The 1296 statutes stressed keeping churches and their forecourts free of waste: likely a gesture at magistrates' piety, but one that can easily be linked to promoting healthy behaviours in crowded areas and rendering it all the more important that these environs remain easy and safe to traverse at all times and free of miasma-inducing matters.⁴² Funerals, the subject of ten chapters in the 1348 ordinances and several decrees in 1330, are also the subject of still earlier by-laws, for instance in a passage forbidding extramural burials except in plain daylight, 'for the evident benefit and convenience of the men and women of the city of Pistoia'.⁴³ One impetus for this provision could have been a desire to limit violations of funeral and sumptuary laws under the cover of night. Yet it may also have sought to improve health outcomes by reducing the risk of ambush by robbers and accidents due to poor visibility, ensuring that bodies could be handled with sufficient care and graves were deep enough to contain miasmatic fumes.

The preparation and consumption of meat likewise did not have to wait for the onset of plague to receive attention. In seeking to curb the practice of selling unhealthy meat (*carnas*

⁴¹ The nexus of social class, political order and hygiene is explored for a slightly later period in Douglas Biow, *The Culture of Cleanliness in Renaissance Italy* (Ithaca, NY, 2006); and Sandra Cavallo and Tessa Storey, *Healthy Living in Late Renaissance Italy* (Oxford, 2013), both also in response to Norbert Elias, *The Civilizing Process*, trans. Edmund Jephcott (Oxford, 1997); Alain Corbin, *The Foul and the Fragrant: Odor and the French Social Imagination* (Cambridge, Mass., 1986); George Vigarello, *Concepts of Cleanliness: Changing Attitudes in France since the Middle Ages*, trans. Jean Birrell (Cambridge, 1988).

⁴² *Statutum Potestatis Comunis Pistorii (1296)*, ed. Zdekauer, iii, CXXXIII: 'Ordinamus ad honorem dei omnipotentis et sanctorum suorum quod nulla persona teneat aliquod letamen aut putridem aliquam vel maceriam, lapides vel aliquod aliud ingombramentum iuxta aliquam ecclesiam civitatis Pistorii vel in aliqua platea ante ipsam ecclesiam civitatis Pistorii' (140–1); and see *ibid.*, iii, CL (145).

⁴³ *Ibid.*, iii, CXLI: 'Pro evidenti utilitate et commodo hominum et mulierum de civitate Pistorii, quod quandocunque ab hodie in antea contingeret . . . cohadunationes hominum vel mulierum fieri, propter aliquod vel aliqua corruptum vel corrupta alicuius sive aliquorum hominum . . . extra civitatem Pistorii . . . quod tales congregationes . . . non fiant . . . sed fiant et fieri debeant et possint de die claro, videlicet post horam nonam tantum' (143).

morticinas et infirmas), the 1296 statutes insisted, perhaps unrealistically, that butchers slaughter animals in those taverns where the flesh was to be sold and consumed, making violations and culprits easier to trace and thus also acting as a deterrent.⁴⁴ Finally, the statutes' concern with environmental hazards translated into clear instructions on dung removal from public streets and waterways, a prohibition on situating water tanks, latrines and stoves along major thoroughfares, and a warning against letting waste water ('*brodam vel aquam cohadunatam vel orinam vel stercus vel aquam tinctam*') spill onto open surfaces.⁴⁵ Such stipulations clarified the preventative significance of those urban officials, including Pistoia's *viarii*, who were formally charged with maintaining certain sites and infrastructures.

Much like the 1348 ordinances, the 1296 statutes rarely link promulgations directly with an underlying scientific theory or a specific health outcome. Yet when the health benefits are occasionally spelled out, a shared medical literacy emerges, dispelling the impression of fatalism or hygienic ignorance often assumed by later observers. For example, a rubric forbidding certain artisans from working within the city walls couched its argument in clear prophylactic terms:

Since it is civil and expedient for the preservation of people's health that the city of Pistoia be cleared of stench, from which the air is corrupted and pestilential diseases arise, we establish with this law that no artisan can or must exercise his craft or carry out any work from which stench arises within the walls surrounding Pistoia. Rather, he must carry out such craft and labour beyond the city's walls, whence stench cannot reach Pistoian citizens. And no putrid matter, from which stench may arise, may be kept in any shop or discarded in any public road within the city's walls.⁴⁶

⁴⁴ *Ibid.*, iii, CXLII (143). This instruction seems to be unique to Pistoia (and is echoed in the 1348 ordinances), although numerous regulations make strict demands on the cleanliness of butcheries and the manner in which blood, entrails and carcasses are to be disposed of, for the explicit benefit of all residents. See, for instance, *Statuti della città di Roma*, ed. Camillo Re (Rome, 1880), ii, CXCIV (189); *Statuti senesi scritti in volgare ne' secoli XIII e XIV*, ed. Filippo-Luigi Polidori, 3 vols. (Bologna, 1863–77), i, no. 3 (121).

⁴⁵ *Statutum Potestatis Comunitatis Pistorii (1296)*, ed. Zdekauer, iiiii ('*Tractatus iudices de dannis datis*'), LVIII–LX, LXV–VI (174–5 and 176–7).

⁴⁶ *Ibid.*, iii, CLXII: 'Quoniam civile est et expedit pro salute hominum conservanda quod civitas Pistorii sit purgata fetoribus, ex quibus aer corumpitur et pestilentialia egretudines oriunt; ideo hac lege sancimus, quod nullus artifex possit vel debeat exercere vel facere infra muros vel circulas civitatis Pistorii aliquam artem vel aliquod laborerium, unde fetor oriatur, sed debeat talem artem et laborerium, exercere extra muros et circulas civitatis, in locis, unde fetor venire non possit civibus Pistoriensibus. Et quod nulla putredo, de qua fetor resultet,

(cont. on p. 19)

To recall, the passage conforms to certain Galenic principles, according to which air purity and by implication public health is compromised by foul odours.⁴⁷ As such, it augments other measures in seeking to defend the urban environment from the hazards it routinely faced outside the context of extreme situations such as war, famine and plague, and in the name of civic decorum, safety and health. Nor was the ordinance a dead letter, for, as the city's historians and archaeologists have shown, it exhibits a de facto form of industrial zoning, shifting activities considered polluting away from the densely inhabited old city and situating them further out of the centre and down-water.⁴⁸

The statutes also highlight the continuity or — less likely — renewal of the city's roads office, comprising two men from each of the city's gates, who must 'go along with one of the podestà's notaries . . . to survey the public streets and roads outside the city and throughout Pistoia's hinterland'.⁴⁹ Pistoia's thirteenth-century sources are limited but, judging from the abundant evidence for *viarii*'s activities in coeval Italian cities, the office probably continued to function through the mid fourteenth century. A survey of 154 peninsular statute collections issued by 118 towns and cities reveals the institution of 84 such offices prior to the late fifteenth century, of which fourteen are first attested before 1299, a further ten by 1324 and seven more by

(n. 46 cont.)

teneatur in aliqua apotecha seu proiciatur in aliquam viam publicam intra circulas civitatis' (150–1).

⁴⁷ See Coomans and Geltner, 'On the Street and in the Bathhouse'; Dolly Jørgensen, 'The Medieval Sense of Smell, Stench and Sanitation', in *Les cinq sens de la ville du moyen âge à nos jours*, ed. Ulrike Krampl, Robert Beck and Emmanuelle Retaillaud-Bajac (Tours, 2013); N. J. Ciecieszki, 'The Stench of Disease: Public Health and the Environment in Late-Medieval English Towns and Cities', *Health, Culture and Society*, iv (2013). And see, more broadly, Jacques Jouanna, 'Air, Miasma and Contagion in the Time of Hippocrates and the Survival of Miasmas in Post-Hippocratic Medicine (Rufus of Ephesus, Galen and Palladius)' and 'Water, Health and Disease in the Hippocratic Treatise *Airs, Waters, Places*,' both in *Greek Medicine from Hippocrates to Galen: Selected Papers of Jacques Jouanna*, ed. Philip van der Eijk, trans. Neil Allies (Leiden, 2012); and Salvatore Speziale, *Il contagio del contagio: Circolazione di saperi e sfide bioetiche tra Africa ed Europa dalla Peste nera all'AIDS* (Reggio Calabria, 2016), 27–65.

⁴⁸ Cipriani, 'Pistoia fra la metà del duecento e la Peste nera', 360–1. See also Francesco Neri, 'Attività manifatturiere, mercato ed arti', in *Storia di Pistoia*, ii, ed. Cherubini.

⁴⁹ *Statutum Potestatis Communis Pistorii* (1296), ed. Zdekauer, v, XXIII: 'Qui vadunt cum uno ex notariis potestatis . . . ad videndum stratas et vias publicas extra civitatem per districtum Pistorii' (276).

1349 (see Figure).⁵⁰ Alternatively, it is possible that the damage assessors mentioned earlier took responsibility for the upkeep of these sites until that point, or else worked hand in hand with the *viarii* throughout the intervening period, as documented elsewhere.⁵¹

Beyond statutes, records concerning and issued by roads officials proliferate in this period in Pistoia and elsewhere, with similar prophylactic remits. Treviso's *viarii*, for example, were charged with ensuring the city's infrastructural flow since the very early thirteenth century, and took part in defending residents from waste matter that 'infect[s] the air and create[s] a pestilence, on account of which human bodies become infirm'.⁵² In Lucca, too, the overarching responsibility of roads officials was to strive *pro bono et sanitate hominum*, 'for the benefit and health' of all Lucchesi from at least the 1330s onward.⁵³ And in Bologna, the superbly documented officials of roads and waters, also known as the city's 'dirt' (*fango*) officers, were tasked from 1267 at the latest with monitoring proper waste disposal. This included the instruction that no latrine gutter should cause 'a stench reaching those passing or living nearby' ('quod fetor veniat transeuntibus vel ibi prope habitantibus').⁵⁴ The parallels between these offices were no coincidence; from a metabolic point of view, the significance of the road and water

⁵⁰ The first wave included Bassano, Bologna, Castelfiorentino, Chiaverano, Monteaugutolo, Padua, Perugia, Pisa, Pistoia, Siena, Spoleto, Treviso, Verona and Viterbo; the second added Chivasso, Colle Val' d'Elsa, Florence, Ivrea, Lendinara, L'Aquila, Lucca, Nizza Monferrato, Orvieto and Portogruaro; the third comprised Amelia, Bergamo, Montepulciano, Ripi, Roccantica, Ravenna and Borgo Franco. See Geltner, *Roads to Health*, ch. 1.

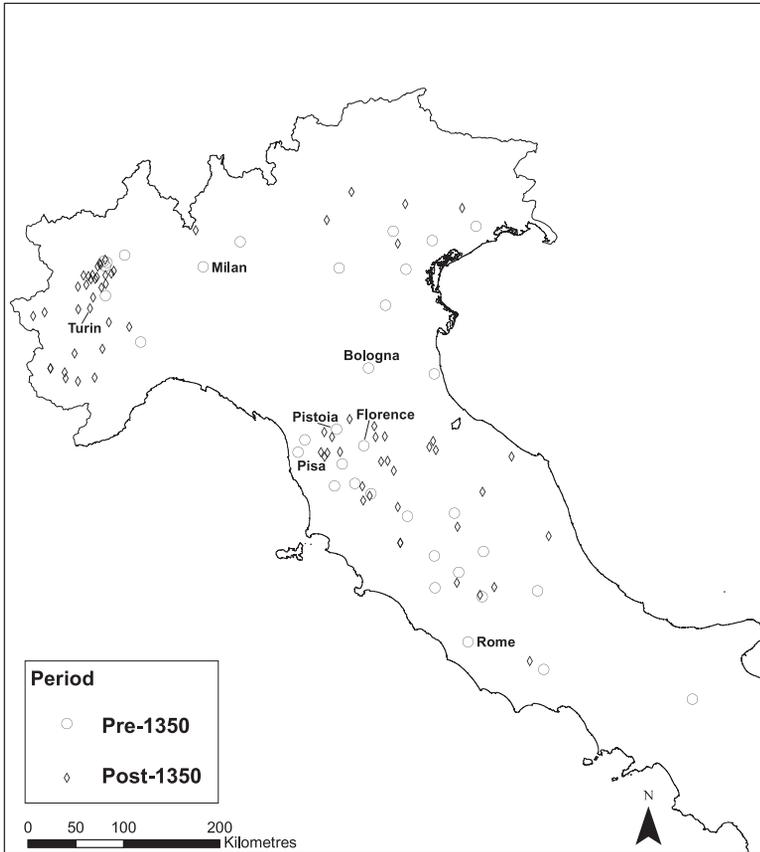
⁵¹ Such co-operation is attested for Montopoli in 1360. See *Statuto del Comune di Montopoli (1360)*, ed. Bruno Casini (Florence, 1968), I, 14 and III, 90 (76–7 and 271), respectively.

⁵² *Gli Statuti del Comune di Treviso (sec. XIII–XIV)*, ed. Bianca Betto, 2 vols. (Rome, 1984–86), 1283–1284, i, CCXXXVIII (i, 192–3): 'Talia aeram inficiunt et faciunt pestilentem — propter quod hominum corpora ad infirmitates veniunt atque mortem incurrunt'. See also *ibid.*, i, CCLXI (CCXLVIII) (i, 212–13). On the *viarii*'s earlier mentions, see *Gli Statuti del Comune di Treviso*, ed. Giuseppe Liberali, 2 vols. (Venice, 1950–51), 1207–1218, XLIX and CV; 1231–1233, CCCLVIII (i, 45 and 72; ii, 133, respectively); and n. 63 below.

⁵³ Archivio di Stato di Lucca, Curie delle vie e de' pubblici 1, 'Statutum viarum Lucani Civitatis', fo. 2^v (1342?). A printed edition is *Statuti urbanistici medievali di Lucca: Gli statuti delle vie e de' pubblici di Lucca nei secoli XII–XIV. Curia del fondaco: Statuto del 1371*, ed. Domenico Corsi (Venice, 1960). See also Geltner, *Roads to Health*, ch. 2.

⁵⁴ Archivio di Stato di Bologna, Statuti 41, VIII, 1267, I, 21 (fos. 11^r–13^v). See also Geltner, *Roads to Health*, ch. 3.

FIGURE



VIARI AND CAMPARI IN THE ITALIAN PENINSULA, c.1200–1500

system and its upkeep were obvious to city dwellers and governors alike, as urban populations grew and their integration into the region's trade networks deepened.⁵⁵ But it was not simply trade

⁵⁵ For recent archaeological evidence, stressing parallels between building practices in the region's cities and countryside, as well as the emergence of differentiated technologies and materials for creating urban surfaces for various uses, see Monica Baldassarri and Giulio Ciampoltrini (eds.), *Tra città e contado: Viabilità e tecnologia stradale nel Valdarno medievale* (Pisa, 2007). This high degree of specification aids the identification, for instance, of surfaces used for retail and light artisanal activities,

(cont. on p. 22)

that such organs were created to facilitate; the health of cities, much like that of human bodies, was understood in Galenic terms as a dynamic system constantly striving for equilibrium under external and internal pressures.⁵⁶

Evidence for the *viarii*'s activities becomes much thicker on the ground in this period for Pistoia, too. Here, city-council decisions (*provvisioni*) make frequent mention of road-masters' chores and the obstacles facing them, usually referring to the organ as the *octo viarum*, the eight roads supervisors, a title reasserting their representative role for each of the city's quarters. On 15 September 1330, for instance, the men approached the council to complain that the roads' maintenance programme was being held back because the sum of 250 lire earmarked for it could not be lawfully disbursed without the physical presence at the work sites of the chamberlain, whose busy schedule rendered it difficult. The condition, presumably imposed as an anti-corruption measure, was presently abolished.⁵⁷ On 15 March 1339, the council once again displayed pragmatism in voting to allow the *octo viarum* to appoint a notary of its choice instead of waiting for the council to do it for them, as the law instructed, probably in recognition of the limited pool of applicants. Despite such occasional hiccups, however, the appointment of *viarii* punctuates the city council minutes on an almost regular, two-month basis throughout the fourteenth century.⁵⁸

(n. 55 cont.)

those subjected to significant wear on account of heavy traffic, and those, for instance between adjacent buildings, meant to be employed as temporary waste deposits, as well as for distinctions between domestic, corporate and public areas. See Antonio Alberti, Monica Baldassarri and Gabriele Gattiglia, 'Strade e piazza cittadine a Pisa tra Medioevo ed età moderna,' in *ibid*. See also, more broadly, Valerie Allen and Ruth Evans (eds.), *Roadworks: Medieval Britain, Medieval Roads* (Manchester, 2016).

⁵⁶ Joel Kaye, *A History of Balance, 1250–1375: The Emergence of a New Model of Equilibrium and Its Impact on Thought* (Cambridge, 2014), 128–240.

⁵⁷ ASPi, Provvisioni e riforme 1, fos. 21^r and 22^v.

⁵⁸ *Ibid.*, 5, fos. 22^r (8 Mar. 1335), 26^{r-v} (14 Mar.), 37^v and 39^v (29 Apr.), 75^v (3 July), 100^v (31 Aug.), 166^v (10 May 1336), 181^v (15 July), 200^r (18 Sept.), 142^v (15 Apr. 1337), 266^v (29 Aug.), 309^r (10 Mar. 1338), 324^r (13 May); 6, 14^r (5 Mar. 1339), 15^r (15 Mar.), 23^v (30 Apr.), 33^v (30 June), 45^r (1 Sept.), 86^v (26 Apr. 1340), 91^v (19 June), 140^r (7 May 1341), 147^r (28 June), 153^v (20 Sept.), 173^v (5 Mar.), 184^v (10 June), 191^v (5 Aug.); 7, 102^v–103^r (8 Mar. 1344), 104^r (17 Mar.), 121^r (17 May), 138^r (16 July); 8, 14^r (20 Sept. 1344), 47^r (11 Feb. 1345), 63^v (6 May); 9, 6^v (6 Sept. 1345), 52^v (3 July 1346); 11, 43^r (25 Aug. 1354), 83^{r-v} (11 Dec. 1355); 14, 63^r (31 July 1368); 16, 20^r (23 Dec. 1373); 18, 59^v (8 July 1376), 72^r (15 Sept.), 94^r (25 Nov.), 114^v (29 Jan. 1377), 134^r (3 Apr.), 166^r (23 July). The list is not exhaustive but it also reflects breaks in the series as a whole.

The nomination of road-masters from the city's four quarters eventually met with a centralizing response. If up until the early 1330s the podestà was expected to rely directly on the neighbourhood-based *viarii*, soon the council began to increase his capacity in this specific respect, too. On 26 October 1332 it was accordingly decreed that, 'for the public benefit of the men of the city and the district of Pistoia' ('pro publica utilitate hominum civitatis et districtus pistorii'), a foreign official should be hired who would 'pursue the maintenance of the roads and bridges' ('indigeat refectione viarum et pontium'). He was to be a 'good, watchful, certified and experienced notary' ('unum bonum, sollicitum, legalem et expertum notarium vel officialem') appointed for six months and accompanied by one clerk and six minions at a salary of 300 lire for the outfit as a whole.⁵⁹ A month later, on 21 November, a certain Giovanni Benciveni of Gubbio won the council's approval for the job, and he was scheduled to enter office on the following 11 January.⁶⁰ Henceforth and throughout the fourteenth century, the person responsible for the *officium viarum et pontium* was a standard member of the podestà's entourage, working closely with regular and ad hoc advisory boards, on the one hand, and the eight neighbourhood representatives, on the other.⁶¹ It was in this period too that a

⁵⁹ *Ibid.*, 4, fo. 14^v.

⁶⁰ *Ibid.*, 4, fo. 19^r. A later entry in the same register (30^v; 11 Jan. 1333) indicated that, '[pro] aliquo iusto impedimento', Giovanni will not be arriving on time and the council asked the podestà to stay at the helm until a temporary replacement could be arranged. It seems, however, that the appointment was further delayed, as the city council was asked on 13 March that year to reimburse numerous citizens for their efforts 'ad faciendum muros, fossos, stecchatos, antiportos, portas, vias, pontes, fontes, puteos et alia edificia et operas communis pistorii' (40^v). Giovanni apparently never reached Pistoia, but it is likely that his efforts there would have been at least partly in vain. In November 1333, in Pistoia and elsewhere along the Arno, a great flood caused massive damage to the region's infrastructure, and all and sundry scrambled to repair them. *Ibid.*, 4, fo. 93^v (11 Nov. 1333) and 95^v (22 Nov.). Months later, progress was still so slow, that water continued to inflict 'non modicum dampnum hominum et personarum civitatis et districtus pistorii et per consequens communis pistorii'. *Ibid.*, fo. 158^v (28 July 1334).

⁶¹ *Ibid.*, 5, fos. 11^r and 13^r (14 Feb. 1335), 14^r-15^v (17 Feb.), 164^{r-v} (3 May 1336), 240^v (13 Apr. 1337).

separate copy of the road-master's statutes was produced (c.1330),⁶² alongside registers of the office's daily activities.⁶³

Of the latter series, only a single volume survives today, dating to 1335.⁶⁴ It merits special mention for two reasons. First, since Pistoia's current archival inventory inaccurately states that the city's Office of Rivers and Roads (*Ufficiali dei fiumi et strade*) was founded in the later sixteenth century.⁶⁵ In fact, both the latter series' first register, dating to 1582, as well as the office's early eighteenth-century printed statutes, exhibit a distinct continuity with the fourteenth-century *officium viarum et pontium*, even if bridges were abandoned in the title in favour of what they crossed. Second and more importantly, the volume's contents confirm that the early fourteenth-century office (which, as we have seen, was already in operation decades earlier) participated in executing the city's preventative programme and was thus instrumental in preserving urban health on a daily basis well before the plague's onset. For instance, on 23 September 1335 the *viarius* Tommaso Benedetti fined three wood merchants from the parish of Santa Maria Maddalena al Prato 100 soldi each for failing to situate their wares safely (fo. 5^{r-v}) and then proceeded to fine groups of local residents as well as individual men and women for neglecting to clean the streets and canals before their domiciles and in their parishes (6^{r-v}). Another entry that day mentions that the *viarius* employed the communal crier to announce regular

⁶² ASPi, Raccolte 5, fos. 100^r-107^v: 'De officio viarum et fluminum' (1330-). Whatever its original status, the text exhibits signs of ongoing revision in many of its aspects, including the respective roles of the central and neighbourhood officials.

⁶³ Beyond balancing the agendas of a political centre and its neighbourhoods, the road-master's office succumbed to one further pressure, namely that of administrative efficiency or at least its perception. In March 1348 (and thus still before the plague's onslaught), the council decided to fuse the office with that of the damages notary. ASPi, Provisioni e riforme 9, fo. 191^r (28 Mar. 1348); Raccolte 5, fos. 67^r-69^v (14 Mar. 1348); Statuti 5, fos. 40^r-42^r ([14] Mar. 1348). Such fusions occurred elsewhere. See *Statuti dei Comuni di Monastero S. Eugenio (1352), Monteriggioni (1380) e Sovicille (1383)*, ed. Giulio Prunai (Florence, 1961), Monteriggioni 1380, i, VIII (61-2); *Statuti di Ascoli Piceno dell'anno MCCCLXXVII*, ed. Lodovico Zdekauer and Pietro Sella (Rome, 1910), iii, 96-104 (422-7); Alessandro Dani (ed.), *Il Comune medievale di Piancastagnaio e i suoi statuti* (Siena, 1996), 1416/1432, i, XXX (17-18).

⁶⁴ ASPi, Podestà 18, Curia de fiumi e strade (1335).

⁶⁵ Altieri Magliozzi, *L'Archivio del Comune di Pistoia*, 155. See also ASPi, Ufficiali dei fiumi e strade 1, fo. 12^v (1582), which explicitly refers to itself as a revised document based on *leges antiqui* and concerning the remit of officials 'per tempo esistenti'. A revised vernacular version was later published as *Capitoli dell'uffizio dei fiumi e strade di Pistoja, compilati e riformati l'anno 1722* (Pistoia, 1728). Both texts contain substantial excerpts from the earlier office's regulations.

cleaning campaigns and charged those who ignored the latter's instructions (7^v). Similar lists of judicial pronouncements appear on 14 October (9^r-12^r), 14 November (12^v-16^f) and 14 December (16^v) that year, illustrating one routine for dealing with environmental offenders, and which highly resembles pre-plague practices attested for roads and works offices in Rome, Lucca and Bologna.⁶⁶

Pistoia's *viarii* were hardly the only officials responsible for promoting the city's health through the upkeep of infrastructures. Complaints about dilapidated roads and bridges brought before the council could be dealt with by other government organs, permanent or ad hoc, and treated sometimes without so much as even mentioning the *octo viarum* or the road-master himself.⁶⁷ Furthermore, even from the centralized office's perspective, the maintenance of urban infrastructures continued to be the prerogative of individual residents, craft guilds and neighbourhoods as well as of other officers, as becomes especially clear during moments of crisis (fire, flood, war), which occurred well before the onset of plague.⁶⁸ Then as now, community well-being fitted uneasily into one organ's purview, with a multiplicity of stakeholders and agents, formal and informal, reflecting broad concerns rather than patchiness or a lack of co-ordination. Thus, even if we were to consider Pistoia's pre-modern public health as an essentially reactive project, many events far pre-dating the Black Death triggered and galvanized local responses, as the city grew and its challenges multiplied.

In lockstep with Pistoia's changing needs, under circumstances its residents created and endured, a growing enforcement role developed around a minor organ with deep prophylactic roots and a rich legacy throughout the region. Well before the second

⁶⁶ Cristina Carbonetti Vendittelli, 'La Curia dei *Magistri edificiorum Urbis* nei secoli XIII e XIV e la sua documentazione', in Etienne Hubert (ed.), *Rome aux XIII^e et XIV^e siècles: Cinq études [Roma nei secoli XIII e XIV: Cinque saggi]* (Rome, 1993); Renato Sansa, 'Istituzioni e politica dell'ambiente a Roma: Dalle magistrature capitoline alla presidenza pontificia', in Giovanni Cascio Pratili and Luigi Zangheri (eds.), *La legislazione medicea sull'ambiente*, iv: *Scritti per un commento* (Florence, 1998); and Geltner, *Roads to Health*, chs. 2 and 3.

⁶⁷ ASPi, Provvisioni e riforme 1, fo. 121^r (23 July 1332); 2, fo. 33^v (3 July 1331).

⁶⁸ *Ibid.*, 1, fos. 8^v-9^f (3 Sept. 1330); 4, fos. 93^v (15 Nov. 1333), 95^f (22 Nov. 1333), 158^v (28 July 1334); 5, fos. 11^f (14 Feb. 1335), 111^v (26 Sept. 1335); 6, fos. 37^f (16 July 1339) and 39^v (9 Aug. 1339); Raccolte 5, fos. 102^v 103^f (1335).

pandemic struck, Italian road-masters were tasked with the upkeep of urban infrastructures, often straddling the urban/rural divide, to ensure the healthy metabolism of cities. The impact of the *viarii* was palpable; they commissioned bridge repairs and maintained streets, paved squares, erected walls, dug and drained canals, propped up riverbanks and cleared fountains, troughs and millponds. All the while they monitored and enforced the proper use of these sites by different species. Such tasks were consciously designed to enable the smooth movement of traffic as well as that of solid and liquid refuse as a major means to fight urban blockage and pollution, and to ensure the flow of water as a source of hydraulic energy or prerequisite for good commerce. In sum, roads officials were one organ among numerous urban healthscapers, whose remit linked different sectors and sections of the city considered vital to people's health, safety and well-being.

IV

AN ANTIDOTE TO PLAGUE

Given the similarities in the remit of *viarii* throughout the peninsula, as well as their (non-exclusive) responsibility for communal prophylactics, healthscaping efforts were more common and better attested than public health historiography tends to recognize, at least in this pre-modern region.⁶⁹ The oversight is due in part to historians' focus on proto-modern amenities such as doctors, quarantine facilities, hospitals and health boards. Yet it also owes much to an otherwise healthy and deep-seated scepticism about the value of urban by-laws and preventative ordinances as evidence for social practice. For instance, in 1879, Francesco Carabellese tried to explain why, despite Florence's 'high degree of civilization' in the early fourteenth century, the city failed to rise to the Black Death's challenge as reflected by the paucity of direct legislation on the matter. Referring to sanitary statutes already issued in the 1330s, he conceded that, 'with the arrival of plague in '48, the extraordinary measures issued by the commune's government to fight it were rather few, but for the most part they simply called on their citizens to observe the

⁶⁹ The case for Italy is made most recently in Geltner, *Roads to Health*. See also n. 76 below.

sanitary instructions of the [existing] statutes, which they knew well, and perhaps doubled the fines'.⁷⁰

In the event, however, 'citizens themselves ignored their own health, repeatedly contravening the statutes, notwithstanding the severe penalties with which they were struck'.⁷¹ In other words, the scientific, legal and administrative means for fighting disease and promoting health were there, but people ignored them and the government was hard pressed to enforce good policy in a time of crisis. The implied moral of the story, to follow Carabellese's logic, was thus political (the need for a more centralized state to replace an inept commune?) rather than intellectual or scientific (the flourishing of medical sciences or the rise of the medical profession?). Yet even this interpretation reinforces the Black Death's status as a watershed moment, on the grounds that the residents' allegedly myopic approach ushered a calamity that was to some extent avoidable and which cleared the path to more stringent regulation.

Later scholars downplayed even further the impact of prescriptive texts before 1348, such as a pre-plague 'pest tractate' published by Lynn Thorndike in 1930, likewise considered to have been ineffective.⁷² And the attitude remained in vogue even as further evidence began piling up for earlier prophylactic legislation, starting with Ernest Sabine's seminal works in the 1930s.⁷³ In the mid 1970s, for example, Jean-Noël Biraben dismissed as 'local' and bearing 'not very encouraging results' a slew of public sanitation statutes, from the Florentine texts just mentioned, through ordinances hailing around 1347–8 from Orvieto, Venice, Milan and, of course, Pistoia, to a text from Gloucester and the royal edict of John II of France in 1352 — all of which dealt squarely with communal prophylactics.⁷⁴ More recent scholars have echoed a similar

⁷⁰ Francesco Carabellese, *La peste del 1348 e le condizioni della sanità pubblica in Toscana* (Rocca S. Casciano, 1897), v.

⁷¹ *Ibid.*, xiv.

⁷² Lynn Thorndike, 'A Pest Tractate before the Black Death', *Sudhoffs Archiv für Geschichte der Medizin*, xxiii (1930).

⁷³ E. L. Sabine, 'Butchering in Mediaeval London', *Speculum*, viii (1933); E. L. Sabine, 'Latrines and Cesspools of Mediaeval London', *Speculum*, ix (1934); E. L. Sabine, 'City Cleaning in Mediaeval London', *Speculum*, xii (1937). Another early gem is G. T. Salusbury, *Street Life in Medieval England* (Oxford, 1939).

⁷⁴ Jean-Noël Biraben, *Les hommes et la peste en France et dans les pays européens et méditerranéens*, 2 vols. (Paris, 1975–76), ii, 102. See also Carpentier, *Une ville devant la* (cont. on p. 28)

sentiment, including Maria Serena Mazzi, Giorgio Cosmacini, and Ronald Zupko and Robert Laures, all of whom lauded communes' legislative attempts but saw them by and large as pretentious, especially prior to the first visitation of the second plague pandemic.⁷⁵

What these and other scholars justly lamented was a lack of evidence for enforcement, that is, extant documentation of practice (or its material equivalent), be it before or after the Black Death. If so, illuminating the activities of *viarii* and other pre-modern healthscapers can help fill a lacuna for Italy, in much the same way that Carole Rawcliffe has done for England and Wales, Dolly Jørgensen for Scandinavia and Janna Coomans for the Low Countries.⁷⁶ Yet this would require more than unearthing new evidence. Indeed, the rich source material for Italian *viarii* and other stakeholders is not entirely unknown; nor are archaeological data of possibly corroborative value completely absent.⁷⁷ Rather, medical and health historians' reluctance to consider such evidence seriously may reflect partly the attraction of a modern paradigm of public health, and partly a shared belief in the supremacy of the Black Death as an agent of change. Strikingly, for instance, Biraben's

(n. 74 cont.)

peste, 100, who described Orvietani's apparent apathy at the onset of the plague as 'tragic'.

⁷⁵ Maria Serena Mazzi, *Salute e società nel Medioevo* (Florence, 1978); Maria Serena Mazzi, 'Per la preservazione et bene universale: La politica sanitaria del governo fiorentino nel quattrocento', *Nuovi Studi Storici*, xxix (1995); Giorgio Cosmacini, *Storia della medicina e della sanità in Italia: Dalla Peste nera ai giorni nostri* (Bari, 2005), 35; Giorgio Baroni and Giorgio Berti, *Spazio alla vita: Il servizio di pulizia nei secoli e oggi nel mondo. Per una nuova immagine degli operatori del settore* (Milan, 1993), 26; Ronald Edward Zupko and Robert Anthony Laures, *Straws in the Wind: Medieval Urban Environmental Law* (Boulder, Col., 1996). By contrast, Anja Petaros et al., 'Public Health Problems in the Medieval Statutes of Croatian Adriatic Coastal Towns: From Public Morality to Public Health', *Journal of Religion and Health*, lii (2013), which sets up its subject matter as an extension of Italian practices, is more upbeat about the impact of the laws.

⁷⁶ Rawcliffe, *Urban Bodies*; Dolly Jørgensen 'Cooperative Sanitation: Managing Streets and Gutters in Late Medieval England and Scandinavia', *Technology and Culture*, xlix (2008); Janna Coomans, 'In Pursuit of a Healthy City' (University of Amsterdam Ph.D. thesis, 2018).

⁷⁷ Duccio Balestracci, 'The Regulation of Public Health in Italian Medieval Towns', in Helmut Hundsbichler, Gerhard Jaritz and Thomas Kühtreiber (eds.), *Die Vielfalt der Dinge: Neue Wege zur Analyse mittelalterlicher Sachkultur* (Vienna, 1998); Lara Sabbionesi, '“Pro maiore sanitate hominum civitatis . . . et borgorum”': Lo smaltimento dei rifiuti nelle città medievali dell'Italia settentrionale' (Università Ca' Foscari, Venice, Ph.D. thesis, 2016).

aforementioned scepticism about legislation issued before 1348 fades for the period immediately following the plague's onset. To wit, he presents Barnabò Visconti's *regulations* on isolating the sick in 1374 Reggio Emilia and its 1377 analogue in Dubrovnik (Ragusa) as 'the first serious step' in fighting the disease, although neither was paradigmatically different from earlier normative texts or (in his publication) backed by evidence for social practice. It is as if, once plague struck, erstwhile desirable interventions morphed into consequential ones. By the fifteenth century, no longer regional outliers, Trieste, Milan and Venice appear to be typical examples of the growing trend throughout Western Europe for a rigorous effort by rational and professional men to put the region on a path to medical modernity.⁷⁸

In a congenial context, prescriptive sources thus *can* make communal prophylactics seem like plague's silver lining, the positive if delayed outcome of disaster. Such a hopeful outlook may be based on a tendentious reading of the evidence, but it certainly echoes other evaluations of the Black Death's aftermath. After all, scholars tend to agree that other benefits awaited those who survived the violent events, including higher wages, more balanced nutrition and greater personal liberties that spelled the end of an era.⁷⁹ What is more, the narrative of painful progress (or the topos of disaster's rewards) continues to frame modern public health as a positive counterpart to the Industrial Revolution's social and environmental harms,⁸⁰ not to mention the comparable tendency until quite recently to construe public health as one positive outcome of Euro-American colonialism and imperialism.⁸¹

⁷⁸ Biraben, *Les hommes et la peste*, ii, 103.

⁷⁹ Christopher Dyer, *Standards of Living in the Later Middle Ages: Social Change in England, c.1200–1520*, rev. ed. (Cambridge, 1998), 296–317; see also n. 1 and 3 above.

⁸⁰ The classic account remains George Rosen, *A History of Public Health*, rev. ed. (Baltimore, 1993), esp. 192–293. One calamity with positive outcomes is analysed in Alvaro S. Pereira, 'The Opportunity of a Disaster: The Economic Impact of the 1755 Lisbon Earthquake', *Journal of Economic History*, lxix (2009). For a critical survey of disaster studies, see Daniel R. Curtis, *Coping with Crisis: The Resilience and Vulnerability of Pre-Industrial Settlements* (London, 2014), 13–18.

⁸¹ The view no longer holds sway in mainstream medical and post-colonial historiography since at least the 1980s. Game-changing publications include Daniel R. Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (New York, 1981), esp. 58–79; David Arnold, *Imperial Medicine and Indigenous Societies* (Manchester, 1988); Jean Comaroff, 'The Diseased Heart of Africa: Medicine, Colonialism, and the Black Body', in Shirley Lindenbaum and

(cont. on p. 30)

As this article suggests, however, an emphasis on applied epidemiology and biomedicine as the *sine quibus non* of public health has impoverished the history of communal prophylactics. It has marginalized numerous possible sources and created a narrower prism than is actually available for observing earlier societies' attempts to promote health and fight disease. Being able to integrate new and known sources is therefore just as much about expanding the paradigm in which they are currently analysed as it is about locating them. Evidence other than by-laws can and should be taken into consideration, such as registers attesting the preventative remits and actions of *viarii* (and others), and data collected by civic, bio- and zoo-archaeologists. Even when limited to prescriptive texts, however, numerous sources, such as monastic *regulae*, architectural and military manuals and health advice literature, exhibit a consistent, scientifically grounded preoccupation with group prophylactics well before the plague's onset.⁸²

Notwithstanding the havoc it wreaked and the demographic shadow it cast, the Black Death was thus only one among numerous triggers and processes shaping the history of public health in Western Europe. Paroxysmal events such as epidemic disease, but also wars, floods and famine, certainly increased pressure on communities to stay resilient. Yet urban life in the region, which was reinvigorated from the twelfth century onwards, was subject to threats on a routine basis, including crowdedness, poverty, negligence and pollution. To fight back, governments, guilds, clerics and residents drew on different experiences and developed various resources under constantly changing conditions, including climactic ones, to stay healthy. It is this heterogeneity in non-extreme situations that public health historians often overlook when viewing plague as jump-starting public health awareness. As Joel Tarr, a pioneering environmental historian of the United States, put it,

The meaning of the terms "nuisance" and "hazard" are time and culture specific, and their definitions depend on many elements both within the

(n. 81 cont.)

Margaret M. Lock (eds.), *Knowledge, Power, and Practice: The Anthropology of Medicine and Everyday Life* (Berkeley, 1993); Philip D. Curtin, *Disease and Empire: The Health of European Troops in the Conquest of Africa* (Cambridge, 1998).

⁸² Geltner, *Roads to Health*, ch. 5.

urban container and the larger society. Urban pollution . . . at any time, can be understood as the product of the interaction among technology, scientific knowledge, human culture and values, and the environment.⁸³

To accept Tarr's argument is to change the terms of debate still prevalent in much public health scholarship commenting on fourteenth-century Europe and, by the implication of a faulty logic, the pre-modern world. As the present article avers, the difficult task facing historians is not so much to explain or reject a pre/modern divide but rather to take account of the assumptions involved in construing the rise of public health as a unique accoutrement of modernity. Meeting the challenge highlights the primacy of one narrative of modernization, often to the detriment of a nuanced historical understanding of community prophylactics. Gaining and grounding that insight may render change across time no less important an *explanandum* than continuity. More importantly, perhaps, it will help biologically and anthropologically informed historians who have begun to extend plague studies globally to situate their findings in local prophylactic cultures as well, one community and one region at a time.⁸⁴

APPENDIX 1

OUTLINE OF THE PISTOIAN ORDINANCES OF 2 MAY 1348

Source: Archivio di Stato di Pistoia, Comune, Statuti 5, fos. 42^v-45^r.

[fo. 42^v] Preamble

1. No one is to enter Pistoia or leave the city or district and enter those of Pisa or Lucca without the Council's prior written permission [cancelled on 23 May].

2. No one is to bring into the city or its district used cloth or have it burned in the main square, except that meant for personal use and weighing under 30 *libre*.

3. Corpses may be taken out of homes only in caskets, sealed to confine foul odour, and buried in them. Priests are to declare all burials to the officials [43^r].

⁸³ Tarr, *Search for the Ultimate Sink*, 7.

⁸⁴ Monica H. Green (ed.), 'Pandemic Disease in the Medieval World: Rethinking the Black Death', *The Medieval Globe*, i (2014).

4. Graves are to be dug about 1.45 metres deep to confine the corpses' foul stench.

5. No one is to bring a corpse into the city.

6. No one is to accompany a body or its kinsmen beyond the church door or return to the deceased's home or enter it or any other house on that occasion or up to seven days later.

7. Other than direct blood relatives, no one is to send gifts to the deceased's house or eat there before or after the burial.

8. To avoid waste, no one is to wear new clothing within eight days of the funeral except the wife of the deceased.

9. No herald is to summon or be sent to summon anyone, privately or publicly, to a funeral or to view a corpse.

10. To avoid scaring the sick, the cathedral bells may not be rung during funerals. But during a burial in a parish or fraternal church [43^v] the bells can be rung once and moderately.

11. No one is to assemble a group to accompany a widow from a deceased person's house, except when returning from the church or burial place. Up to four women, however, may gather to escort her from that house at other times, and no one is to join them.

12. No one may loudly lament someone who died outside Pistoia, or summon people to assemble on such an occasion except relatives and wives, or have bells rung or criers summoned or announce the occasion.

None of the above applies to the funerals and burials of knights, law doctors, judges and physicians, whose relatives may honour them as they wish.

13. So that the bodies of the living will not fall ill from putridity and rotten food, no butcher or meat monger may hang flesh or sell hung flesh ['De macellarijs' in margin].

14. No butcher or meat monger may keep filthy matter anywhere meat is sold, nor slaughter animals there or keep skinned carcasses near filth.

15. No butcher or meat monger may display at his counter meat from more than a single ox, calf or cow at any one time.

16. [44^r] Between May and August each year butchers and meat mongers must slaughter and sell meat on each licit day for its consumption to those wishing to eat it.

17. No butcher or meat monger may slaughter animals without a designated official's approval, who shall confirm it is healthy and witness its immediate slaughtering.

18. Between 1 March and 1 December each year no butcher or meat monger may slaughter any breeding, mature or juvenile sow.

19. Between 1 December and 1 March each year butchers and meat mongers must flay any breeding, mature or juvenile sow before selling its meat [revised on 23 May].

20. The official in charge of the correct sale and price of meat is to be elected by and from among the workers of the chapel of San Jacopo in the cathedral and the low-ranking officials of the city's treasury.

21. For the better preservation of health, no one may export poultry, calves and other fatty food products from the city [cancelled on 23 May].

22. So that stench and filth may not harm people, henceforth tanning is forbidden within Pistoia's walls [amended 23 May].

23. [44^v] The podestà, capitano del popolo and their officials are responsible for enforcing these ordinances on funerals and the retail sale of meat.

University of Amsterdam

G. Geltner 