The porous city: dealing with public health crises in fifteenth-century Sint-Truiden

Weeda, C.V.; Stein, R.; Sicking, L.H.J.

CLAIRE WEEDA

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Many Netherlandish towns and cities in the fifteenth century had to deal with recurring public health crises.[1] Struck by outbreaks of the plague and famine, this strongly urbanised region – at the time over a third of the population in Flanders, Brabant and Holland lived in cities – faced significant challenges (Unger, 1999: 329-330; Blockmans, 1980: 43, 46; Stabel, 1997).[2] Sint-Truiden, a relatively small, yet significant market town situated in today's Belgian Limburg and the site of a large Benedictine abbey since the seventh century, fared little better. Three types of health-related crises struck its community between 1417 and 1490, at the time numbering between 4.000-6.000 inhabitants: famine, plague and financial hardship as a result of falling population numbers. How did the city handle these exigencies? This chapter will argue that, in response, the city pursued vital politics by maintaining porous boundaries. It modulated the intake and output of food, persons, matter, and, by extension, money, to uphold balance and motility in the circulation of goods, energy and waste (Rose, 2007; Hoffmann, 2007; Kaye, 2014; Knoll – Reith, 2020). In this way the weekly bylaws issued by the city magistrates actively anticipated and responded to the biopolitical challenges of managing the urban body politic on a population level, to ensure its vitality. In doing so, they built on existing practices, infrastructure and knowledge as well as adopting new policies.

Before turning to the city of Sint-Truiden in more detail, it is necessary to briefly discuss some key ideas and developments in the field of public health and environmental studies relating to this period. This chapter will, therefore, commence by introducing a few concepts and interpretations of health policies, before exploring Sint-Truiden's strategies in more detail.

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2 In the southern part of Holland, more than half the population dwelled in cities in the early sixteenth century. In Brabant, the northern parts of Holland, Liège, Namen and Henegouwen 28-31 percent was urban (Blockmans, 1980: 46).

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Public health programs, porosity and metabolism

Several studies in recent years successfully challenged the modernist bias that urban communities, before the advent of modern science, technology and the nation-state, responded apathetically to public health and environmental challenges. Carole Rawcliffe's pioneering *Urban Bodies: Communal Health in Late Medieval Towns and Cities* (Rawcliffe, 2013) was the first comprehensive study of public health regulation, that recently was enriched with Janna Coomans's *Community, Urban Health and Environment in the Late Medieval Low Countries* (Coomans, 2021), exploring communal health responses and neighbourliness in Netherlandish cities. Not only did municipal authorities throughout Europe regulate behaviour, they also policed it and its interactions with the environment at a population-level by issuing by-laws and statutes and handing out fines and punishments (Rawcliffe – Weeda, 2019). At the same time, regimens scripted how households, city authorities and territorial rulers should care for and discipline both the individual body and the body politic, to facilitate the government of the political community (Nicoud, 2007 for sources). Thus, as schoolmen, monks and political theorists absorbed the works of Galen and, from the late thirteenth century, Aristotle's *Politics*, they intellectually conceived the political community to be an organic entity, viewed through the prism of physiology (Nederman, 1987; 2004; and 2015). Accordingly, scholastics and city officials might consider the body politic to seek an inner equilibrium through a hierarchical system, in which the higher and lower parts together gravitated towards a 'common good' (Kaye, 2014; Lecuppre-Desjardin – Van Bruaene, 2010) – a good, however, that foremost signified enhancing the elite's virtue and leisure, by expediently tapping the population's differentiated qualities and functions through good governance. As Peter Hoppenbrouwers observed in his inaugural lecture in Leiden in 2008, this good governance, encapsulated in justice's demonstration of the virtue of *Temperantia*, meant the use of corporal punishment, of violence (Hoppenbrouwers, 2008: 4).

These concepts and efforts can be termed biopolitical, in the sense that authoritative voices worked with them and devised strategies to intervene in 'collective existence in the name of life and health', while individuals, through regimens, were encouraged to work on the self (Rabinow – Rose, 2006: 197; Meloni, 2021). The naturalisation of the imagined community extended to its economy as well, where the establishment of market value and the 'just price' was considered the 'natural' outcome of the dictates of demand and supply (Kaye, 2014: 76-127). How such ideas and ideologies informed practices and actions is still poorly understood, however, as is the integration of and resistance to the disciplinary biopolitical technologies wielded by evolving institutes and elites. For instance, in Sint-Truiden in times of famine, urban authorities sought to control bread prices and weights, to redistribute goods, leaving little room for the markets to seek a 'natural' price.

Public health programs, then and now, rely on infrastructures, as Guy Geltner argued in *Roads to Health* (Geltner, 2019). Road- and field-masters in Bologna, Lucca and the Piedmont region, as they walked their beat, enforced public health and safety measures in the city and its hinterland, policing animals and humans. The maintenance of road networks also ensured that food reached mouths and the sick travelled to health-care facilities. As public health policies focused primarily on locations and spaces, so the motility of matter, the flow of water and removal of waste, were deemed pivotal (Zaneri, forthcoming).

The fact that medical science was particularly attuned to the exigencies of movement and flow came from its reliance on ancient Graeco-Arabic theory. Hippocratic students had in circa 400 BCE conceived that the environment and situation – the climate, winds, rainfall and terrain – exerted a key influence over the physiology of species. Galen of Pergamon, in the second century CE, further created a system of six factors external to the human body (the so-called non-naturals), whose management to a large extent determined personal wellbeing and health (Rather, 1968; Stores, 1998). The system focused on maintaining health by enhancing the body's metabolism through intake and evacuations, regulated via the porous body's entry points. Diet in particular was considered to drive the physical and mental processes of mortal beings; corrupt food and drink – meat and fish – were deemed harmful. Corruption was manifest in the stench of waste, dirt, and faeces, as foul smell signalled the presence of miasma, foul particles that floated in the air and evaporated from stagnant waters and bad breath. The quality of the air, purgation, exercise and rest, and the regulation of the passions were accordingly considered vital tools for sustaining health, as was the seasonal impact of the planets and macrocosmos (Garcia-Ballester, 1993; Mikkeli, 1999; Cavallo – Storey, 2013). Thus, on a population level, environmental and situational conditions were said to impact the mental and physical state of mortal beings, in accordance to which the political management of cities should be modified.

As a token of the entanglement of natural and political processes, of *zoē* and *bíos* (Meloni, 2020), the regulation of blockage, flow, and circulation was part of the technology of public health maintenance pursued by urban governments. In this context, two further concepts are helpful to understand the cross-over between the individual and the political body: porosity and metabolism (Meloni, 2020: 8; Hoffmann, 2007). As Maurizio Meloni observes, the value of the enhancement of blockage and flow was situational: in some cases, obnoxious fumes needed to be released, in others instances nutritional foodstuffs consumed. The concept of porosity pertained to the regulation of the intake and output of matter via, for instance, the city's gates, rivers and roads, or an individual body's nose, mouth or skin pores. Yet it could also be extended to the abstract, legal sphere: as well as the openings of the city's material boundaries, porosity applied to the extension of citizenship rights to migrants. How matter, people and goods moved in, were digested and transformed through work, and then moved out of the city can be said to represent a city's metabolism, which is comparable to a body's

(Hoffmann, 2007; Barles, 2020; Weber, 2020). In the fifteenth century, before the later shift to fossil fuels, cities thereby strongly relied on their hinterland for resources such as water and wood (Smil, 1994; Sonnlechner, 2010) to be processed in the city. The import of goods in the city's metabolism was indeed driven by the specific life-sustaining practices in the city (Haumann, 2020).

After this short introduction to some key concepts, I will now explore how one city in particular, Sint-Truiden, maintained its flow of goods, people and waste in consideration of these principles. To what extent were the city's regulatory interventions a response to health crises? Did it seek to uphold its population numbers through vital biopolitics? Did it do so through regulations ? To answer these questions, this chapter looks, for the period 1417-1490, at the bylaws issued and recorded, on a weekly basis, by the city magistrates in the so-called Maandagboeken of Sint-Truiden.[3] It is clear from these weekly, Monday meetings that the authorities of Sint-Truiden dealt proactively with public health crises. The city attempted to influence health and population numbers by controlling citizenship, migration and access to the city of regionally mobile labourers; by regulating the circulation of goods and food prices, also in cooperation with other cities in the region of Liège; by channelling waste; and by upgrading levels of sanitation, informed by medical theory.

Sint-Truiden in Haspengouw

The city of Sint-Truiden is situated in the north-east of present-day Limburg. Although the market town is not exceptionally large, it draws significance from the presence of the large Benedictine abbey, founded in 655, that sits in its centre. Over the centuries, as a locus of learning and devotion, the abbey attracted crowds of pilgrims visiting the shrines of St. Trudo and Eucherius and it is from the abbey that the town emerged. Located near the road from Tongeren to Tienen (from where one could travel to Cologne) and to Hoei, the city developed into a substantial market town, where local traders and merchants from farther afield exchanged agricultural produce and textiles (Gerits, 1989). The fertile region of Haspengouw (or Hesbaye), of which Sint-Truiden was the main city, also served as the food basket for the area, providing it with corn and fruits. Alongside northern France and the Baltic, Haspengouw was one of the main grain-exporting regions in north-western Europe. Nearby Leuven, Tienen, Zoutleeuw, as well as Sint-Truiden held grain markets and merchants travelled from Antwerp, Mechelen, Amsterdam and Goes to purchase grain there for Holland, Zeeland and Flanders (Van Uytven, 1975: 1110, 1113).

3 Stadsarchief Sint-Truiden, Nachtegael (1417-1464); Nachtegael dubbel en vollediger (1417-1465); Beslissingen van de commissarissen en van de Raad (1467-1479); Residuum der Keuren der ambachten. I would like to thank the Stadsarchief of Sint-Truiden and Thierry Ghys in particular for their cooperation.

By the fifteenth century, the city was outfitted with all the amenities of a middle-sized community in its day: in addition to the abbey, which had a bath house, and ran a bakery and a school, the city boasted several parish churches and a large Franciscan abbey, founded in 1226. The city mill, the building of which traditionally was a seigniorial right, fell under the abbey's jurisdiction. On the central market square stood the municipal hall, erected in 1366-1367. Adjacent to it rose the Church of Our Lady, which had been founded around the ninth century and became a collegiate church in 1399 (Gerits, 1989: 204, 208). Just outside the city walls stood the stunning church of the Beguines of St. Agnes, founded in 1258, which today, listed as a Unesco World Heritage Site, is famed for its spectacular wall frescoes produced between the fourteenth and sixteenth centuries.

From early on, the city of Sint-Truiden maintained various facilities in the service of public health. In 1139, the laity founded a hospital under the authority of the abbey. It was supervised by the city aldermen and, from 1384, a central committee of 24 members. Like many cities, Sint-Truiden also built a leper hospital at Ziekeren in the south-west, which in 1527 cared for 32 inmates; an additional facility is mentioned at Schurhoven, although it has not left any further traces (Gerits, 1989: 209; Demaitre, 2007). The Beguines also serviced an infirmary and were responsible for the city's laundry (Coomans – Bergmans, 2008). The city established several 'guilds' – charity organisations – such as the leprosy guild, the Church of Our Lady guild for the poor, and, uniquely, the shoe guild, which provided shoes to the poor. Statutes issued by the Prince-bishop of Liège in 1393 and 1417 arranged for the central administration of these guilds, under the auspices of six persons who were elected annually (Duchateau, 2009: 8-10). From 1473, the city also housed the Cellites, a confraternity that had adopted the Rule of Augustine in 1458 and was dedicated to the Seven Good Works, prioritising the care for plague victims and the mentally disabled (Van Leupen, 1998; Weeda, 2022). In 1532, their female equivalent of the *grauwzusters* founded a convent that cared for women and children suffering from the plague.

The city's infrastructure included nine towers jutting from the city walls and five gates, from which roads led to Zerkingen and Namur; Tongeren and Liège; Tienen, Louvain, and Brussels; Herk and Diest; and Hasselt (see Illustration IV.1). From west to east flowed the water of the river the Cicindia, powering the city's mill, which was reinforced by two sluices at the Comisgat (where the river entered the city) and the Vissegat (where it flowed out of the city. The maintenance and sanitation of the city's water supply was the focus of many of the magistrates' regulations. The riverlet was covered with wooden piping to separate it from the stream the Vlietje used by the tanners in the district Vettersbroeck (Ghys, 2011: 23). The abbey's Statute Book dedicates a significant number of its folios to arrangements and laws pertaining to the water ways and city's ponds, next to the regulation of the beer trade, its main economic activity. Near the Comisgat a tower was erected to store salt – a valuable commodity – which came from Zoutleeuw, the farthest inland port, from where it was transported

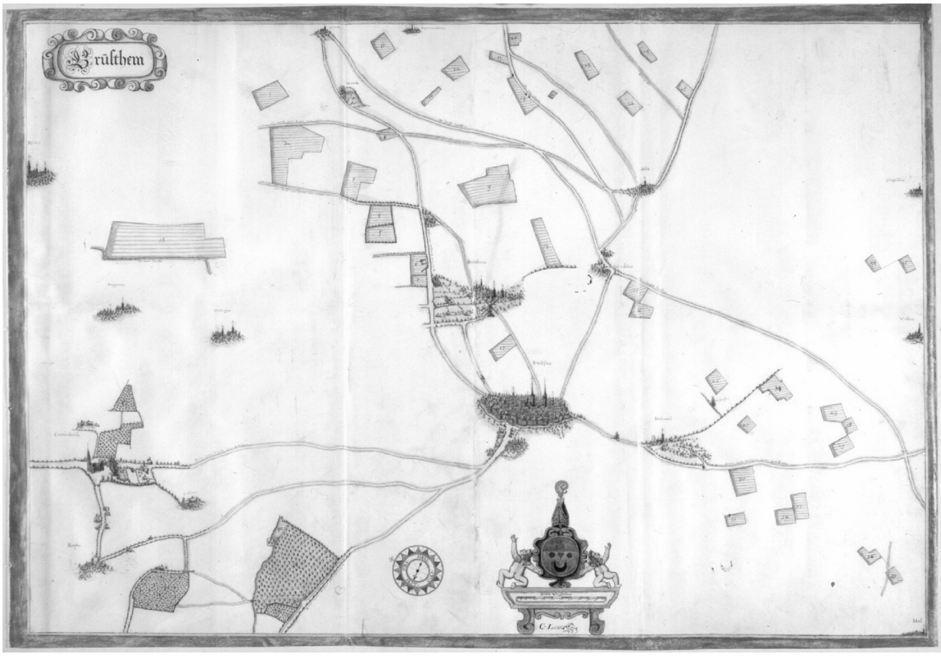

Illustration IV.1 Sint-Truiden in the *Kaartboek* of the abbey of Averbode, 1650-1680

to Sint-Truiden by horse and cart. The tower also served as the city prison (Verheyden, 2011: 33).

Above all, Sint-Truiden's urban landscape was scattered with monastic sites. It was a city of cloisters and churches. In the vicinity of the old Benedictine abbey and besides the Franciscan convent stood several other monastic houses: the Benedictine nuns dwelling at Nonnemielen (*c.* 1194) in nearby Metseren had a house (*refuge*) in the city, as did the abbeys of Averbode and Herkenrode; the Cistercian nuns lived nearby at Terbeek (1221). A *commanderie* of the Teutonic Order at Bernissem (1240) was also close by, as were the sisters of Hiëronymusdal (1396), who later joined the regular canons of St. Augustine of Luciëndal (1416) (Gerits, 1989: 208). The density of religious houses meant that the level of learning was probably significant for a middle-sized market town. The Benedictine abbey of Sint-Truiden housed a flourishing school from the eleventh century onwards and in the twelfth century a second school was founded in the Church of Our Lady under the supervision of a *magister*. In 1530 the city issued an ordinance that the city school master held a monopoly over educating the youngest children, in case their training went beyond training the Pater Noster and Confiteor (Keurboek: 276 no. 2).

Like Maastricht, the city of Sint-Truiden fell under a dual jurisdiction. One half fell under the abbey of Sint-Truiden, which controlled the city mill and certain excise duties. From 1227, the other half belonged, as one of the twenty-three 'Good Cities', to the Principality of Liège. The latter exerted control over the coinage and taxation of the city. Between the thirteenth and fifteenth centuries, the city witnessed a string of uprisings and the foundation of various communes. The organisation of power was reconfigured on several occasions. In 1417, the bishop-elect of Liège, John III of Bavaria (1374-1425), bestowed upon the 'Good Cities' of Liège the same statutes as those of the Prince-bishopric of Liège. Seven guilds were recognised in Sint-Truiden,[4] each of which were tasked with appointing two council members to the city's magistracy, acting alongside the two burgomasters. In addition, the fourteen aldermen, equally divided across the two jurisdictions, together administered justice over the entire city and its hinterland (the *vrijheid*), which was demarcated with wooden crosses, while each jurisdiction provided one *schout* (reeve) responsible for enforcing the law (Gerits, 1989: 205-206). This situation lasted until 1467, when the city was placed under the Burgundian governance of *wethouders* or *commissarissen*. In 1473, the burgomasters were reinstalled, but the *wethouders* seem to have remained in office until 1477, when the old city freedoms of 1417 were reinforced, following the death of the Burgundian Duke Charles the Bold (1433-1477) (Mignon, 1968: 149-150).

In Sint-Truiden, the city magistracy sat every Monday in the city hall and issued sentences and bylaws, that have been recorded in the so-called Maandagboeken. For the period 1417-1467, two versions of the Maandagboeken have survived, one register called 'Nachtegael' and a more extensive register, perhaps a working document, that also records the judicial sentences ('Nachtegael dubbel en vollediger'). For the period 1467-1479, a separate register contains the decisions of the period under the *wethouders* ('Beslissingen van de commissarissen en van de Raad'). Many of the bylaws, which often were issued in direct reaction to specific incidents, subsequently made their way into the city's *Keurboek* and guild regulations ('Keurboek' and 'Residuum der Keuren').[5] Some of the bylaws also were copied into the abbey's ordinances (Rijksarchief Hasselt, inv. no. 896, Ordonnanties), most of which pertain to water management and the beer industry. From 1455, the city's *strijtmeesters* policed the population and collected the fines in case of violation of the by-laws pertaining to relatively minor transgressions, such as the evasion of excise duties or the sale of underweight bread. The fines were allocated to finance the city's defence, public works and infrastructure (Heynen, 1971).

The production in the city was dominated by the textile industry and the beer trade. In 1417 there were seven guilds in Sint-Truiden, and in 1446 thirteen. Guild membership was restricted to married citizens who had paid an entrance fee. The

4 Not to be confused with the charitable guilds mentioned above.

5 A substantial selection of Sint-Truiden's bylaws was published in Straven, 1886. However, his registers are not complete and sometimes contain mistakes in dating. For that reason, I here refer to the original manuscript registers held at the city archives of Sint-Truiden.

city had an important market function, in particular around Pentecost and in the autumn when pilgrimages to Saint-Trudo and Saint-Eucherius were held. The Sint-Michielsmarkt took place annually from the 29th of September and lasted for two weeks; in 1480 a second seasonal market was established by the bishop of Liège Louis of Bourbon (1438-1482), beginning on the eve of the procession of Our Lady, again lasting for two weeks. In addition, there was a weekly market. The latter was divided into two spaces: to the north vendors sold vegetables, as well as cheese and textiles; to the south was the main market, with sections for cattle; coal; herring; stalls selling grain; brushes; fruit; and crockery (Gerits, 1989: 210-211).

Medical science was actively practiced in Sint-Truiden. For instance, the abbey's *Chronicle* documents, quite routinely, that in the mid-thirteenth century, the monks of Sint-Truiden underwent the prophylactic medical treatment of bloodletting (eds Alberts and Jansen, trans. Lavigne, 1988: 111), in accordance with the advice of, for instance, the Limburg calendrical manual *Regimen duodecim regimen* (Jansen-Sieben, 1972; Van Winter, 2017). Likewise, in 1239, the abbey decided to relocate the hospital from the market to the Stapelstraat on the Scheibeek because of its unhealthy, miasmic location (*Cartulaire de l'Abbaye de Saint-Trond*, 1870: I, 207), demonstrating a knowledge of medical science. Several bylaws produced in the fifteenth century attest to the city's awareness of the dangers of miasma, especially in hot summers, and of corrupt food (for instance: 9 June 1455, Nachtegael dubbel: fol. 87v).

Arguably, the abbey's status as a centre of learning meant that its inmates had access to a substantial range of learned texts, including works of natural science of Albertus Magnus and Thomas of Cantimpré (*Handschriften uit de abdij van Sint-Truiden*, 1986). In the course of the fifteenth century, moreover, the city's magistrates might be informed directly on public health programs by Jean Gheerinx of Diest, a member of a dynasty of medical practitioners who was studying medicine at Bologna in 1453 and had copied several medical-astrological treatises. He acted as alderman in Sint-Truiden between 1476 and 1484, but already appears earlier as a witness to an agreement between the friars and the chapter of Church of Our Lady in 1456, where he is identified as a doctor in medicine (*Cartulaire de l'Abbaye de Saint-Trond*, 1874: II, 325-328). His grandson Jerome, an apothecary, subsequently became burgomaster of Sint-Truiden between 1514 and 1555 (Stiennon, 1956).

Knowledge of Aristotle's concept of common good was disseminated in the fifteenth century by intellectuals like Denis the Carthusian (1402-1471), who was first educated at the monastery school of Sint-Truiden and produced regimens pertaining to the health of the individual and body politic. Thus, in his *De regimine policiae* he argued that one of the city's main functions was to provide health care for its population (*Opera minora*, 1909: 11). Significantly, from the fourteenth century, the elite citizens in Sint-Truiden proudly called themselves *otiosi*, the idle class given to virtue and leisure, a self-descriptive category in line with Aristotelian ideals of the pursuit of good governance by the higher strata through recreation and an abstinence of physical labour. Such a self-denomination suggests that the higher power echelons of Sint-Truiden consciously conceived governance to be organised through a hierarchy of offices in a body politic.

Dealing with famine and plague

Having established that Sint-Truiden's city magistrates in the fifteenth century had at least minimal access to Graeco-Arabic science, the question arises how they dealt specifically with public health crises, used medical theory and engaged at all with the city's physiology, metabolism and porosity. The Maandagboeken indicate four moments when the city was struck by excess deaths, famine and plague in the fifteenth century: the years 1424-1425 (phase I); the late 1430s (phase II); the late 1450s (phase III); and the 1480s (phase IV). Except for phase I, the public health exigencies that struck Sint-Truiden were transregional. Plague and famine hit the area in the years 1438-1439, 1456-1459, 1481-1485 and 1490-1495, in addition to regular local outbreaks (Blockmans, 1980: 59). Data from Brabant show that a stagnation of the urban population occurred in the years 1438-1439, 1456-1459, 1466, 1472-1473, 1480-1481, and 1490 (Blockmans, 1980a; Van Schaïk, 2013: 74).

Famine and outbreaks of plague were contingent, although the causality is still unclear (Soens, 2022). Remi van Schaïk has observed that in the years 1437-1439; 1481-1482 and 1489/1491-1492 plague was preceded by famine (Van Schaïk, 2013: 68), of which the years 1437-1439 were some of the worst.[6] Historians have suggested that perhaps the population's resistance to epidemics was weakened because of food scarcity, caused by inclement weather, the disruptions of war and/or political conflicts that hampered trade. For instance, between 1470 and 1493, the grain export in the southern Netherlands and France was disturbed by wars between France and Burgundy (Blockmans, 1980: 49-50; Van Uytven, 1975: 1116-1117). The mobility of armies perhaps also facilitated the spread of plague at these times. As many sources including those from Sint-Truiden attest, disease also disrupted the circulation of goods. For instance, cities restricted the trade in fruits and meat, because they were considered to be vectors of disease transmission (Rawcliffe, 2013; Henderson, 2019; Coomans, 2021). Plague regimens, such as the tract of John ad Barbam (or Burgundy) of Liège produced in 1365, warned against eating fruit and about eating too much in times of plague (Singer, 1916: 165). Analysis of mortality rates during times of plague and famine in Dijon in this period thereby suggests that in this regard, especially poor newcomers with weak social networks in the city were most vulnerable to hunger and plague (Galanaud et al., 2020). Some also argue that the ensuing chaos led to bad sanitation in the cities, allowing disease to spread. This, however, seems

6 Van Uytven, 1975 observes public health crises in the years 1456-1459; 1468-1474; 1481-1485; 1487-1490.

unlikely. Rather than a direct response to insalubrious hygienic conditions, the city magistrates' heightened focus on the cleaning of streets and the removal of waste during outbreaks of plague reflects a prophylactic intensification of existing practices of hygiene, grounded on contemporary aetiology arguing that foul particles, evaporating from corrupt matter, caused disease. In other words, cities' attention to sanitation reflected contemporary concerns over the relationship between miasma and dirt, whereby authorities responded to outbreaks through public health mechanisms already in place (Geltner, 2019a).

Replenishing the population (phase I: 1424-1425)

How did Sint-Truiden handle its health crises? In the first clear instance where Sint-Truiden grappled with a public health crisis, in 1424-1425 (phase I), the city on 13 January 1425 laments the decimation of the population – *den slach van den sterften leijder*. In this instance, the direct cause of the crisis is unclear however. The bylaws issued by the city magistrates from the autumn of 1424 suggest that the city perceived it was dealing with an outbreak of disease, rather than famine. On 24 August 1424, the authorities for the first time in the Maandagboeken accordingly ordain that it is forbidden to dispose of dead animals, except at the designated area in the Houtstraat, far beyond the city walls (Nachtegael: fol. 21r). This bylaw – regulating the separation and removal of dangerous corrupt matter to outside the city – was subsequently copied into the *Keurboek*, so that it remained in force (Keurboek: 228). In 1448, the city reissued a similar bylaw, and six decades later, on 18 May 1489, at the height of a severe outbreak of the plague, enforced the ruling that all dead animals were to be taken outside the farthest gate/settlement and buried four feet under the ground, while sick pigs should be kept at home and not allowed to be herded or to roam the streets (Keurboek: 228).

On the same day, the city magistrates also record an agreement with the brothers of the hospital, who had staged a walk out, arranging for them to return to the city by the end of the week (Nachtegael: fol. 21r). It is unclear why the brothers had left the city. It is conceivable that they had refused to accept the dangerous working conditions while the city was dealing with an outbreak of disease. By all counts, the city magistrates' response is coercive. They threaten, if the brothers were to leave again, to impose the sanction of the loss of their *provende* (stipend) for an entire year, which was to be redistributed among the poor. The city also imposed a fine of one old *grote* upon any citizens who disposed of their waste outside the city, yet too close to the city gates or public roads. On 9 October 1424, moreover, the city stipulated that the so-called ribalds – itinerant, masterless labourers often in search of seasonal work – and sex workers are only allowed to stay in the city and *vrijheid* for the duration of one night, under penalty of marking their mandibles with a hot iron (Nachtegael: fol. 21v). This ordinance also was copied into the *Keurboek* (p. 141 no. 3) and was in force for a year.

Historians Catharina Lis and Hugo Soly interpret the restriction of the movement of seasonal workers into cities as attempts by the authorities to control public order and the labour market – as landowners wished to restrict mobility and hold workers to longer-term, often cheaper contracts (Lis – Soly, 2012: 426-494). As we shall see, Sint-Truiden at this time simultaneously and explicitly opened its gates to targeted, 'decent' individuals, offering them limited citizenship rights, to replenish the population numbers out of economic need. As in other cities, the population was thus strengthened with new inhabitants from the surrounding hinterland (Blockmans, 1980: 51-52; Rubin, 2020).

In January 1425, the bishop of Liège, Jean de Heinsberg, responds to a petition submitted by the city of Sint-Truiden, openly requesting a biopolitical intervention. In his ruling, Jean de Heinsberg relates how the city had been burdened with debt, for it had issued myriad annuities to deal with existing debts and the costs of damages, 'om grooten last en schade' (to great burden and damage). Until recently, the city had managed to keep up the payment of the annuities – which was necessary were they able to continue to trade in the area – by redistributing the excise duties that it levied. However, the outbreak of disease and the decimation of the population had recently slashed the city's income from trade. Thus, the city, acknowledging the need to uphold the number of inhabitants in order to sustain the circulation of products and coinage, asked permission to replenish the city's population by admitting as citizens men of good repute and without a criminal record. The bishop agreed, under the proviso that the new citizens take an oath before the burgomasters and councillors, swearing loyalty to the bishop and church of Liège and the abbey and city of Sint-Truiden and declare that they will not participate in elections for the magistracy, actively or passively, or sit in court. The provision is duly recorded in the Book of Ordinances and in the city's Book of Statutes (Ordonnantiën: 80; Privilegie ende Statuytboeck: 86). On 12 March 1425, the city magistracy further stipulates on which grounds a person is to be admitted to the city: besides the already mentioned provisions, they should not hold office in the city so long as they live outside the city's *vrijheid*; they are not to participate in the *kuerdag* – the annual spring meeting where the city's magistrates and laws are established. In case they have any outstanding debts in the city, they should be notified by a minion appointed by the city and appear in court the next day, under the penalty of losing their citizenship (Nachtegael: fol. 23r; Ordonnantiën: 81).

In these responses the city government, consciously or unwittingly, attempted to manage the city's vitality by working with porous boundaries – letting in some people, expelling others based on qualified categorisation. It was not exceptional in doing so. Mortality rates were high during plague outbreaks and replenishing the city population by allowing migrants to settle in it was common practice in the fifteenth century (Stabel, 1997: 115-135; Rubin, 2020). The policy reveals a conscious effort by the city government to maintain population levels in order to meet production demands, in turn sustaining the circulation of goods and income from excises needed to pay off urban debts.[7] In addition, regulating its metabolism is reflected in the removal of corrupt matter beyond the city walls, to reduce the risk of disease transmission. In this first phase, to conclude, the biopolitical intervention concentrates on the management of the movement of people, coinage and waste.

Integration of grain markets and redistribution of food (phases II and III: 1430s and 1450s)

The second public health exigency that struck Sint-Truiden in the fifteenth century was transregional. In 1437, crops failed after an incredibly cold winter. The grain imports from the Baltic also faltered, disrupted by conflicts between the Hanse and the County of Holland. In 1438, new crop deficiencies caused, according to the chronicles, by hail led to rising grain prices, which doubled or even tripled (Van Schaïk, 2013: 70-71). The *Chronicle* of Jean de Stavelot details the city of Liège's response in these calamitous times. In 1438, on multiple occasions the clergy and citizens held special masses and processions in the city, praying for an end to the mortalities and high food prices, and for rain to fall after the seeds had been sowed. The bishop headed the procession by carrying the holy sacrament, followed by the church leaders of Saint Laurent and Saint Jacques and the abbot of Beaurepart. Along with these spiritual public health interventions, the city proclaimed a ban on the export of corn, under the penalty of an exculpatory pilgrimage to Santiago de Compostela in northern Spain, the payment of ten Rhenish *florins* and the confiscation of the corn. By November 1438, food shortages were so dire that the burgomasters and prominent citizens toured the Haspengouw and the County of Loon, beseeching the farmers to thresh their grain and pay their rents in kind, or else to sell as much corn as possible to the bakers. In the following period, the penalty for illegally exporting grain was harsh: transgressors were threatened with the loss of their right hand, a fine of ten Rhenish *florins* and an exculpatory pilgrimage to Santiago de Compostela. On 15 December 1438, the city of Liège arranged for bread to be handed out at the local Franciscan convent. The crowd was so large that eighteen poor men, women and children were crushed to death and a larger number injured. Two days later, the magistrates of Liège ordained that all the foreigners and non-resident poor should leave the city, some of whom perhaps moved on to Sint-Truiden (Jean de Stavelot, 1861: 392-427).

A central response of the region's cities – to which Sint-Truiden was a party – was to agree to mutually exchange grain, in order to keep the bread prices as low

7 This echoes research in the field of industrial and social ecology studies, that combined analysis of monetary flows and ecological analysis of energy and resource flows (Barles, 2020: 113-114). In a longer tradition, alchemists, physiologists and economic scholars focused on the *circulatio* and mobility of natural resources, commodities, people, and money (Weber, 2020).

as possible. This was necessary because rising grain prices could lead to double bread rates – and costs of bread might consume half the salary of apprentices and the poor (Blockmans, 1980: 56). Grain prices rose in 1417-1418; dropping and then increasing in the years running up to 1438; and then rising from 1463-1464 through to 1492, although an individual year could witness sharp fluctuations (Unger, 1999: 336).[8]

In the early fifteenth century, the grain markets of Brabant and Flanders already had become more integrated, forming part of an interregional trade network (Unger, 1999: 334-336). Towns with access to river or trade networks were able to scour for extra grain supplies in times of shortage and thus stabilise their grain prices. In the last quarter of the fifteenth century, however, prices became more volatile, perhaps because of the Burgundian wars. Towns might also import large quantities of corn from farther afield in times of dearth (defined as two consecutive years of a scarcity of grain supplies or longer) to feed their populations and promote trade in grain (Unger, 1999: 338-399, 341). As Van Schaïk has shown, cooperation between cities extended to sharing information about grain prices as well (Van Schaïk, 1999: 472; idem, 2013: 72).

Cities took a range of additional measures. They imposed bans on the export of grain. Urban authorities, including in Deventer, Culemborg, Cologne, Bruges and Gouda, purchased grain and took control of the grain stores of private owners; and built extra storage space. In 1437, Cologne for the first time purchased rye for its population. Bans were issued on speculative trade in grain. Bakers, millers and brewers were placed under extra supervision. In some instances, maximum prices were imposed or prices lowered (Van Schaïk, 2013: 72-73; idem, 1999: 483-484; Jörg, 2008: 194-195). City authorities took to fixing the bread prices and weights, which was announced on church doors and gates. This was easier than focusing on the grain prices, which were harder to control (Van Schaïk, 1999: 483). The Zutphense *broodzettingsregister* of 1483-1553 shows that transgressors were actively penalized, as do the financial records of the *strijtmeesters* in Sint-Truiden. Some cities took issue, however, claiming they were being disadvantaged or that such regulations actually created famine (Van Schaïk, 1999). In these instances, the authorities demonstratively interfered with the market demands and the 'natural' price of goods.

Echoes of these emergency measures reverberate in the bylaws of Sint-Truiden. On 19 August 1437, the city first issues a bylaw forbidding grain traders to buy wheat, rye, barley, spelt, peas, beans or *raepzaat* of other grain except for hempseed and flax, and except to meet their own or their family's direct needs (Nachtegael dubbel: fol. 50v). A week later, it is forbidden for people living outside the city's *vrijheid* to buy wheat, rye, barley, spelt, oats, *raepzaat*, peas or beans at the grain market before 10 a.m., giving the citizens a head start (Nachtegael dubbel: fol. 50v). On 14 October 1437, it is forbidden to export

8 Blockmans, 1980: 56 records that the disruption of the food production led to higher grain prices in the years 1408-1409; 1415-1417; 1423-1424; 1436-1438; 1455-1457; 1481-1483 and 1488-1492.

corn or edible grain outside the city by horse or cart; grain is only allowed to be transported on a person's back, limiting the quantity and facilitating the policing of the ban (Nachtegael dubbel: fol. 50v). Again, on 17 February 1438, it is prohibited to export corn, hard or soft, *raepzaat*, peas or beans, flour or bread, in sacks, baskets or by horse (Nachtegael dubbel: fol. 52v). On 5 May 1438, the city issues a prohibition on selling corn, hard or soft, to foreigners, at night or by day (Nachtegael dubbel: fol. 53v). A week later, it is forbidden for millers to export flour without importing the same amount; a miller who sells corn or flour outside the *vrijheid* is to pay 10 *clinckarde* or is threatened with the loss of his hand (Nachtegael dubbel: fol. 54r). On 29 December 1438, the magistrates forbid non-citizens or traders to buy corn in large quantities. Inside the city, it is permitted to buy grain and store it, but not to resell it; the purchase is only allowed to happen within normal market hours. Both non-citizens and citizens are allowed to buy corn for their own needs and transport it out of the city. Non-citizens with storage space in the city are allowed to take the grain with them to sustain their own family, but the remainder should be sold within the city and it is forbidden to export bread except for one's own family5's needs (Nachtegael dubbel: fol. 56r).

Finally, on 29 June 1440, the guild members of Sint-Truiden assemble, as was customary, in the garden of the monastery of the Franciscans to declare they will return all the grain taken from the nearby cities of Hasselt and Herk. A majority also decides they will export grain in accordance with the arrangements that have been made in the county. On 2 July 1440, the bishop of Liège lifts the ban on the export of grain (Nachtegael dubbel: fol. 59v).

In phases II and III, the focus lies on managing the city's intake and export of food resources, whereby the city deals intensely with its hinterland and neighbouring cities. We can see that the cities in the region seek to cooperate and redistribute cereals in times of dearth. The Prince-bishop of Liège and Count of Loon was the central coordinator of the exchange network of grain in which Sint-Truiden participated. For instance, in September 1461, the cities of the County of Loon, with the permission of the French king, agreed to supply one another with grain (Straven, 1886: II, 458-460). The covenant cut across the existing regulation of the food supply of Sint-Truiden, which held an important regional agricultural market. There were clear restrictions on the sale of food stuffs to non-citizens coming to market, to ensure there was sufficient nutrition for the own urban community. The export of food stuffs was also controlled, for instance by fixing quantities based on what could be transported by person or cart load. The redistribution dictated by the market was thereby factored in, as provisions were made for tradesmen bringing salt to the market, who in exchange were allowed to carry away grain with them. To supervise the exports the city issued tokens to ascertain the right to purchase food. Food allowed in was subject to quality controls.

These regulations coordinating the supply of grain were preceded by an outbreak of the plague in the years 1456-1459 that was so extreme that the city magistrates of Louvain fled the city. The towns and cities of Herentals, Tervuren, Hoogstraten, Namen, and Sint-Truiden were all hit severely. In 1456, again, ordinances were issued in Sint-Truiden pertaining to the regulation of the food trade. On 19 April 1456, the city banned the export of grain until the guilds had ascertained they had enough. On 3 May 1456, the citizens were forbidden to purchase corn unless for their own consumption, and only an amount that could be carried around their necks. Those living outside the *vrijheid* purchasing food, had to swear that they were doing so only for their own consumption and that they would remain within the city's hinterland. They were to be given a token for their purchase, which they had to hand in at the gate of the city. Neighbours were allowed to purchase grain on behalf of their co-neighbours. Those from outside who had not taken the oath, nor collected a token, would be fined one *reale* and had their food confiscated, a reasonably light penalty (Nachtegael dubbel: fol. 89r). On 31 May 1456, the citizens were allowed to transport the grain by horse, but only up to half a *mudde* and only for their own consumption (Nachtegael dubbel: fol. 89v).

Along with bans on exporting grain, on 21 October 1437 the city also, for the first time, imposed restrictions on so-called money weddings until 1 September of the following year, while not issuing restrictions on the movement of ribalds (Nachtegael dubbel: fol. 51v). It also forbade sending money for the celebration of first mass. It thus seems that the city opted for controlling public order and health by regulating public events – money weddings meant large gatherings where affluent citizens showered coins as part of the wedding celebrations, presumably attracting crowds from inside and outside the city – instead of specifically limiting the movement of qualified non-citizens. Bans on money weddings were reissued in 1439-1440, 1460-1462, 1465 and 1467. To keep their spirits up, nonetheless, on 8 September 1438 the city decreed that the inhabitants were not allowed to wear the veil for more than a day upon the death of a parent or friend (Nachtegael dubbel: fol. 54v).

Restriction of trade in infected goods (phase IV: 1480s)

Situated on the border between Brabant, Namur and Liège, in the years 1465-1468 the region became caught up in the conflicts between Liège and the French. Another outbreak of the plague in the Liège region occurred in 1470-1474, leaving traces in the Maandagboeken of Sint-Truiden in the form of heightened regulation of sanitation (Beslissingen commissarissen: fol. 7r; Keurboek: 279).

Finally, in 1479, we again see an outbreak of the plague striking Sint-Truiden. In this instance, the city indeed focuses more strongly on reducing the spread of disease by curtailing the import of infected goods and by taking extra sanitary precautions. On 19 September 1479, it forbids the import of second-hand clothing or goods of persons who had died of plague or had cared for plague sufferers; or to sell them in the city. Those who took care of the sick outside the city should remain there until Candlemas (2 February) (Keurboek: 267). In this period, there is also a much stronger focus on miasma and the dangers of corruption, perhaps on the advice of the medical doctor and alderman Jean Gheerinx or through interurban exchange of plague policies (Weeda, 2022a). Thus, on 13 March 1480, it is ordained that the fish vendors, male or female or anyone at the fish market who had to deal with waste from saltwater fish, needed to ensure the waste was carried out of the gates before 2 p.m.; it was forbidden to depose of fish water on the market (Keurboek: 302). On 24 April 1480, the city goes on to forbid the disposal of wood, manure, earth or waste in front of city gates or in the canals (Keurboek: 279). Three weeks later, the city decides it is forbidden for barbers or bleeders, male or female, to place blood in vessels in front of their houses; blood should be collected within the house and removed before 2 p.m. and taken in/outside the Vissegat downstream, where the water flows out of the city (Residuum: 81).

Finally, on 11 September 1480, the city ordains that special masses and processions be held because of the plague, by men and women separately. Each head of the household should join in and the men were to carry the cross for the women. By means of the procession, the citizens thus protected the community as they moved along the city's infrastructure, blessing its streets with their imagined benedictions (Agresta, 2020; Weeda, 2022a). It was also forbidden to buy clothes or goods from a place where the plague had struck, unless one could present a certificate that nobody had died of the plague in that house in the past three months – one of the earliest known references to a goods certificate of its kind (Weeda, 2022a).[9] It was forbidden to receive any guests with plague or to go out riding and visit them (Keurboek: 267).

In 1480, the three estates of Liège once more ordained that the export of corn and grain was forbidden in this time of dearth. Again, however, the city of Sint-Truiden took into account the balancing of the market, allowing tradesmen who imported salt, fish or other merchandise to the market, to freely export grain or other goods as long as it was for the same amount. Incoming and outgoing goods and foodstuffs thus remained in balance. The bishop of Liège, Louis of Bourbon, granted permission for this measure, under the proviso that the sale prices were made known to the magistrates and that export goods did not exceed imports, putting public health over profit. The *amman* of Montenaken, the *drossard* of Looz (both reeves) and all the officials were consequently ordered to let these goods pass freely, so long as the tradesmen could produce an attestation issued by Sint-Truiden's magistracy, certifying that the stipulated conditions had been met (Ordonnantiën: 121).

In 1481, populations again fell victim to the plague in Brussel, Leuven, Diest, Liège, and Maastricht. In 1481-1482, merchants from Bergen op Zoom travelled

9 See Bamji, 2017, who says that the earliest known health pass was issued in Milan in 1484. Perhaps Jean Gheerinx, educated at Bologna, had knowledge of this practice before he came to Sint-Truiden.

to Sint-Truiden to buy grain, to no avail. In 1482-1483, a conflict raged in Liège that affected the harvests of Haspengouw.

Another strong outbreak of the plague occurred in the years 1487-1490, in Turnhout, Humbeek, Tienen, Hoegaarden, Zichem, Diest, Aarschot, Antwerp, Namen, Ghent, Nijvel, and Sint-Truiden. In 1487, many of the manors and farmsteads of the abbey of Sint-Truiden were ruined, while the fields lay bare and taxes remained unpaid. In the years 1488-1489 the situation was so dire in the Liège region, that poor people left the cities to roam the fields in search of food (Van Uytven, 1975: 1105-1106, 1115). In the years 1490-1491, the region experienced inclement weather; there was hunger in the north and the region adjacent to the German Rhineland. The city of Cologne was cut off from grain imports from Liège because of warfare. Social unrest and levels of theft rose in the city as a result. There was a scarcity of bread. Cities, in response, again took emergency measures, for instance watching over the gates to ensure that food was not exported out of the city (Van Schaïk, 2013: 80-82). In this case, the porous boundaries of cities were closed off.

Conclusion

Throughout the fifteenth century, the city of Sint-Truiden repeatedly took various measures to sustain life while facing public health crises. Although these varied in substance, still it is evident that, certainly in phases I-III, public health and economic challenges were interconnected and that the city authorities considered them to be as such. The magistrates sought to sustain an economic production sufficient enough to remain financially afloat, to meet its obligations from debt, and it considered its economic viability to depend on population numbers. In phase I, it sought to remedy the situation by encouraging the migration of specific individuals into the city; in phases II-III, the attention shifted to the cooperation between the network of twenty-three 'Good Cities' within the principality of Liège and the balancing of imports and exports of food stuffs. The containment of famine and plague, thus, occasioned a political alliance strengthening inter-urban ties. Maintaining balance was prioritised when in 1440, the guild members of Sint-Truiden decided to redistribute the grain from Hasselt and Herk. The focus lay on controlling the balanced intake and output of food and goods, upon whose circulation and the excise duties drawn from them the city depended. In all these examples, the city thereby managed the city's metabolism and wellbeing by, depending on the situation, closing or opening its porous boundaries, allowing in or removing qualified persons, goods, and waste.

Nonetheless, as Van Schaïk justly comments, the city's response was just as much about imposing social order and controlling the hinterland and the market for fiscal purposes, as it was about the containment of a health crisis (Van Schaïk, 1999: 466). The city distinguished sharply between those mortal beings potentially allowed to join the city's community – the men of good repute – and those whose legal presence in the city was restricted to 24 hours – the ribalds. The latter were mostly itinerant, working poor whose cognomen suggested stereotypical disorderly, vulgar, lewd, criminal behaviour – a status that released the city of its obligation to offer charity support to them. The many provisions defining the purchase of food stuffs in moments of famine, accordingly, detailed who qualified for food: the purchaser and his household, a neighbour, the holder of a token.

In the late 1480s, the city took explicit measures to reduce the transmission and impact of plague, limiting the import of potentially infected goods and regulating the disposal of blood by the barbers. These regulations echo the plague bylaw issued by the authorities of Louvain, dating to 1468 (Weeda, 2022a; Serrure, 1985). They also reflect the more targeted, medicalised approach to dealing with outbreaks of the plague. In the same year the city invited the Cellites, plague health workers, to come to Sint-Truiden. The city also began to issue certificates, allowing specific individuals and goods to circumvent the imposed blockages and to continue to move in and out of the city. In that sense, the city continued to maintain its porosity, acknowledging that it was necessary to uphold the mobility of people, goods and matter insofar as possible. Nonetheless, cities also erected bottlenecks to control and restrict the mobility of specific persons, animals and matter, enhancing inequalities in the process (Coomans – Weeda, 2020). In this sense, the flow was never free, as it depended on infrastructures, was regulated and policed (Knoll – Reith, 2020: 205-207).

Above all, it shows that the city, rather than an isolated organism, consistently relied on, dealt and negotiated with, and extended its power over its surrounding hinterland. In doing so, the city was part of a much wider network, that was involved in sustaining the circulation of goods, people, people, matter *and* money. This was not a uniquely local or even European phenomenon. Christiaan Pee has argued that in the Chinese Song Empire (960-1279), the circulation of money and goods across regions was considered to conform to the moral cosmos, as it sustained life and wellbeing (De Pee, 2018). The redistributive market and natural ecosystems, from a public-health perspective, thus were perceived as entangled, from which some benefitted more than others.

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