Article

Flea and ANT: Mapping the mobility of the Plague, 1330s–1350s

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Abstract Bruno Latour's Actor-Network Theory (ANT) serves as a useful heuristic for thinking about the fourteenth-century Plague as well as about the interdiscipline of plague studies. Examining medieval narrative 'maps' of the mobility of the Plague, modern geographical maps, computer simulations of the movement of the Plague, and maps of the *Y. pestis* and rat genome demonstrates different types and scales of mobility, and also raises questions about the place of humanists in plague studies.

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Flea and ANT

To study the Plague/plague – any pandemic, as those who do so know well – is to focus on human and other mobilities, that is, to discover from where and how a disease travels, not only *in* the body but *from* body to body across space and time.¹ In *The Pasteurization of France*, Bruno Latour offers an analysis not only of the science that converged in the moment when Alexandre Yersin isolated the Plague bacillus in Hong Kong in 1894, but also of the city's network of drains and human waste and moving water and disease that Yersin observed (Latour [1988] 1993, 104–116). Latour's Actor-Network Theory (ANT) serves as a useful heuristic for thinking about the Plague of the 1330–1350s in a way that decenters human actors, thus opening up a space for retelling the history of

¹ I capitalize *Plague* to denote the fourteenth-century bubonic plague and its related forms. I am mindful that medievals and

moderns can be mistaken in what phenomena, symptoms, and diseases are gathered under the name of p/Plague. Historians and epidemiologists have not arrived at a consensus regarding which disease and its biovars struck when.

the Plague as simultaneously material (things-on-the-move) and semiotic (the circulation and subsequent reification of ideas).

One challenge of mobility studies is the difficulties inherent in describing what is *on-the-move*, since any such account entails a capturing of an event in space and time, thus rendering mobility paradoxically static. In addition, one must contend with scales of mobility: to fully explore the Plague according to ANT theory would require that we see ‘everything.’ In the broadest ecological and ecomaterialist terms, the Plague is *part* of a larger system that includes climate change and its subsequent cascade of effects combined with anthropogenic changes to the landscape (clearing forests for farming, building dense clusters of cities). John Law describes scales of mobility while engaging with Latour’s notion of ‘immutable mobiles,’ which are ‘themselves a network, an array. They are objects. But they also pass down or through a network, held in an array of secure and stable surroundings’ (Law, 2002, 93). In other words, imagine *the* network, or networks, as a series of nesting boxes – which is not to argue for a hierarchy of boxes or relations. Recall the nursery rhyme, ‘This Is the House that Jack Built’ (which, serendipitously for me, has a rat in it), and imagine each object as part of the larger, Jack-network as much as it is itself made up of networks. Law, working with the ship-as-object/network, says:

a properly working ship has to borrow the force of the wind, the flow of the current, the position of the stars, the energy of the members of the crew, it has to borrow all these and include them (so to speak) within itself. (Law, 2002, 93)

Rewritten, with the Plague as Object/Network:

a properly working Plague epidemic has to borrow the hospitality of marmots living on the Central Asian steppes, the virulence of *Y. pestis*, the cargo hold of a ship headed for an Italian port, the hunger of rats, the blood of humans, it has to borrow all these – and more – and include them (so to speak) within itself.

2 I am indebted to many MEDMED-L (medieval medicine list-serv) contributors who have posted on plagues, and want to acknowledge in particular the moderator, Monica Green, whose lucid posts on the latest scientific research are invaluable.

My focus in this essay, then, is on the Plague as a network ‘in itself.’ My way into this network is through how plague epidemics have been constituted as a subject of study.² New discoveries in genomics enable us to see humans as one set of actants among many in a vast network that knows nothing of race, class, gender, sexual preference, ethnic identity or religious affiliation, nor of fealty to a village, town, city, city-state, or nation. The Plague is no respecter of borders. The human body, constructed and experienced as having discrete borders, is simply another node in the network.

Today, scholars studying plague/s include archaeologists (recovering human remains), historians and literary scholars (recovering, discovering, and interpreting

written sources), geographers (mapping populations), epidemiologists (studying disease, past and present), entomologists (studying the insect vectors for plague), zoologists (studying the mammalian vectors for plague), geneticists (studying DNA and aDNA [ancient DNA]), and biomedical and security experts (preparing for a potential bioterrorist attack). The field of plague studies is therefore dependent on the mobility of scholarship across traditional disciplinary boundaries. I day-trip across these boundaries as I consider two fourteenth-century Plague narratives that chronicle the spread of the Plague and then examine four modern representations of the mobility of the Plague: a geographical map, a mathematical simulation of the Plague's movement, a 'map' of *Y. pestis* genome, and a 'map' of rat DNA. I conclude by considering the place of historians, art historians, and literary scholars in plague studies, a field, it appears, increasingly dominated by scientists. For networks to function, according to ANT, they must continually be performed or they break down. How might we humanists in this particular network of plague studies avoid entropy?

Integral to any study of mobilities, textual/metaphorical and material/literal, is *contact*. Travel itself can be a life-changing experience, but it is through contact with others, their customs, their beliefs, their cultural productions, and their material goods that the most dynamic change occurs on both the individual and the societal level. And nothing changed life more in the latter part of the fourteenth century than contact with the Plague.

Trebucheting Bodies

A well-known Plague narrative concerns the city of Caffa, Crimea. In 1345, the Khan of the Golden Horde, Jani Beg, laid siege to the city. Gabriele de' Mussi, a lawyer from Piacenza, describes the events of 1347 in this way:

Oh God! See how the heathen Tartar races, pouring together from all sides, suddenly invested the city ... and besieged the trapped Christians there for almost three years ... the whole army was affected by a disease which overran the Tartars and killed thousands upon thousands every day. It was as though arrows were raining down from heaven to strike and crush the Tartars' arrogance. All medical advice and attention was useless; the Tartars died as soon as the signs of disease appeared on their bodies: swellings in the armpit or groin caused by coagulating humours, followed by a putrid fever.

The dying Tartars, stunned and stupefied by the immensity of the disaster ... and realizing that they had no hope of escape, lost interest in the siege. But they ordered corpses to be placed in catapults [trebuchets] and lobbed into the city in the hope that the intolerable stench would kill everyone inside. What seemed like mountains of dead were thrown into the city, and

the Christians could not hide or flee or escape ... the rotting corpses tainted the air and poisoned the water supply, and the stench was so overwhelming that hardly one in several thousand was in a position to flee ... one infected man could carry the poison to others, and infect people and places with the disease by look alone ... almost everyone who had been in the East, or in the regions to the south and north, fell victim to sudden death ... as if struck by a lethal arrow ... The scale of the mortality and the form which it took persuaded those who lived, weeping and lamenting, through the bitter events ... Chinese, Indians, Persians, Medes, Kurds, Armenians, Cilicians, Georgians, Mesopotamians, Nubians, Ethiopians, Turks, Egyptians, Arabs, Saracens and Greeks (for almost all the East has been affected) – that the last judgement had come. (de' Mussi [1348] 1994, 16–20)

This graphic anecdote about the soaring trajectory of bodies infected with *pestis* illustrates in a variety of ways the trope of mobility. First, the history of Caffa itself is a remarkable tale of cultural and economic mobilities over time. Once a flourishing port city on the Black Sea and a crucial node on the trade routes between east and west, Caffa (or Kaffa; now Feodosija, Ukraine) has dwindled into a seaside destination for tourists from Russia, Ukraine, Uzbekistan, and other former Soviet republics. Caffa, founded by the Greeks in the sixth-century BCE, destroyed by the Huns in the fourth-century CE, controlled by the Khazars through the ninth century and then by the Byzantine empire, conquered by the Mongols c. 1230, and sporadically held by the Republic of Venice throughout the thirteenth century, was purchased from the Golden Horde by the Genovese in 1266. Almost a century later, the Mongols met outside its gates. Devastated by the Plague, Caffa recovered in the fifteenth century, thriving as a result of the slave trade. The Spanish traveler Pedro Tafur visited Caffa in the 1430s and described the population as comprised of 'Christians and Catholics as well as Greeks, and all the nations of the world ... So great is the multitude of men, and of so many different nationalities, that it is a marvel that Kaffa is free from plague' (Tafur [1436–1439] 1926). (Though Tafur and his contemporaries did not know *how* the Plague traveled, they knew that it did.) The Ottomans seized Caffa in 1475, and, in an example of mobility on a tragic, astonishing scale, sent hundreds of children to Istanbul to serve as slaves to the sultan; moreover, all Europeans became displaced persons when they were ordered to leave the city (Babinger, 1978, 344–345). Under the Turkish name of Kefe, the city was then ruled by the Ottoman Turks for more than a century, thus making it impossible for Genoa and Venice to trade directly with the East. The city fell to the Cossacks in 1615, was incorporated into the Russian Empire in 1783, was twice captured by the Nazis during World War II, and finally became part of Ukraine in 1954.

Second, Gabriele de' Mussi's account has a special status in Western European historiography as a 'hinge' narrative: it testifies to the moment when the Plague

‘crossed over’ to the West from the East – an occidental privileging that studies on medieval mobility have an interest in undoing. The story is often offered as the Ur-narrative for the entry of the Plague into Western Europe in the fourteenth century; one suspects that the sensationalist edge to de’ Mussi’s prose contributed to its elevation from the tendentiously anecdotal to its status as the go-to account of a defining moment in the history of the West. We should remember, however, that the Plague spread west through many routes. For example, before the Plague reached Caffa, it also traveled from Crimea to Genoa to Sicily (Ziegler, 1971, 40, 45).

Third, Gabriele de’ Mussi’s narrative is one of several extant narratives of the Plague that modern historians have used to map its progress across Asia, Africa, and Europe (the known world of the Middle Ages). I mean ‘map’ both metaphorically (historians describing the movement of the Plague) and literally (historians creating visual maps of the Plague, sweeps of arrows and dotted lines that chronicle the Plague moving over sea and by land). Until very recently, all ‘maps’ of the Plague, whether historians’ written accounts or visual representations (print or digital, computer simulations, GIS mappings, and animations; see, for example, the Wikipedia entry, ‘Black Death’), have been epiphenomenal, completely dependent upon the extant written record made up of accounts written by eyewitnesses or by authors who were writing within a generation or two after the epidemic had subsided. These days, however, studying the Plague entails generating new maps, such as that of the genome of *Y. pestis* found in aDNA in the teeth and bones of disinterred human remains (Little, 2012, 274ff.).

Words, Pictures, Moving Pictures, and Mutations

Consider an early narrative of the movement of the Plague, an excerpt from Umar Ibn al-Wardi’s *Risālah al-naba ‘an al-waba’* (*Essay on the Report of the Pestilence*), written when the Plague reached Palestine in 1348:

The plague frightened and killed. It began in the land of darkness. Oh, what a visitor! ... China was not preserved from it nor could the strongest fortress hinder it. The plague afflicted the Indians in India. It weighed upon the Sind [now the border between India and Pakistan]. It seized with its hand and ensnared even the land of the Uzbeks. How many backs did it break in what is now Transoxiana! [a region of Central Asia]. The plague increased and spread further. It attacked the Persians, extended its steps toward the land of the Khitai [Central Asia], and gnawed away at the Crimea. It pelted Rūm [heartland of Byzantium] with live coals and led the outrage to Cyprus and the islands. The plague destroyed mankind in Cairo. Its eye was cast upon Egypt.... It stilled all movement in

Alexandria. The plague did its work like a silkworm. (al-Wardī [1348] 1974, 448)

Al-Wardī goes on to describe the advance of the Plague through Upper Egypt, Barqa (in modern Libya), Gaza, Ascalon (southwest Palestine), Jerusalem, Sidon, Beirut, Damascus, Hamā (west-central Syria), Ma'arrat al-Nu'man (al-Wardī's birthplace), Sarmin, Antioch, Shayzar, al-Hārim, 'Azaz, al-Bāb (northern Syria), and Aleppo. He ends his *Report* this way: 'How amazingly does it pursue the people of each house!' (al-Wardī [1348] 1974, 451). Al-Wardī, in his late fifties, died of the Plague in Aleppo on 18 March 1349.

As do many of his Western counterparts, al-Wardī combines the urgency of an eyewitness account with belletristic flourishes. Some of al-Wardī's literariness (in addition to his hyperbolic imagery – understandable, given the horrifying incomprehensibility of the epidemic) can be attributed to the fact that, most likely, al-Wardī (along with many other witnesses to the Plague) supplemented his first-hand experience with other people's accounts, particularly those of traveling merchants. As does de' Mussi, al-Wardī personifies the Plague: its hand seizes; it gnaws; it looks; most important, it *moves*. Yet its human victims are fixed in place. This is worth noting, given the tradition of Muhammad's decrees to Muslims on the Plague. In spite of (or because of) debates by religio-legal scholars (*ulamā*) on what the Prophet actually intended, devout Muslims were told that they ought not to enter into or leave a region where the Plague rampaged; that indeed, the Plague was 'a mercy and a martyrdom for Muslims and a punishment for infidels'; moreover, 'there is no transmissibility of disease' from one person to another (al-Manbijī [1362–1364] 1982, 73, 65–66). Thus while Christians might take the option of attempting to flee or avoid the Plague (as did Boccaccio's storytellers in the *Decameron*), Muslims were enjoined to stay put. The disease would find them if God ordained.

While the corpus of Plague narratives for the fourteenth century, especially in England, is particularly rich, we have no extant maps from the medieval period; it probably never occurred to writers to represent the Plague visually. The nineteenth-century British physician John Snow is often credited as the first to map the mobility of disease. Snow was able to trace the source of a cholera outbreak in 1854 to a specific water pump in Soho, London, by interviewing people in the neighborhood. When he wrote up his findings, Snow included a street map that identified households that had succumbed to cholera and their proximity to the pump (Johnson, 2006). Snow used the map to think through to a solution to the spread of cholera, perhaps influenced by a widespread and renewed (i.e., after the earlier European 'Age of Exploration') interest in map-making – a result, in part, of the necessity of mapping that modern political entity, the nation, as well as recording the extension of that nation into colonies in the Americas, Africa, the Middle East, and South and East Asia. In addition, as David C. Mengel suggests, the mapping of military campaigns may well have

Figure 1: Carl Martin (1879), detail: England (left); Egypt and Syria (right).

served as a model for mapping disease (23 August 2012; see Mengel, 2011). This is a particularly apt comparison, given some historians' propensities to describe the movement and effects of the Plague in bellicose imagery, as does O.J. Benedictow when he refers to 'the armies of the Black Death' (Benedictow, 2004, 185). It is no surprise, then, to find what may be the earliest maps of plague epidemics produced a few decades after Snow's map. In 1879, Carl Martin offered beautifully-executed lithographs in a large fold-out format. The maps range from the Justinian Plague (541–542, continuing in waves until the middle of the eighth century) to early nineteenth-century epidemics, and was printed in the journal *Geographischer Anstalt*, which, given the number of elaborate maps, must have been extremely expensive to produce. Such a venture suggests the importance of cartography in the nineteenth century as a new modality or cognitive frame, to which we in the twentieth and early twenty-first century are certainly heir. I furnish two parts of Martin's map.

The detail of England is characterized by red lines (here showing as gray) (Figure 1) that bleed into the west coasts of Ireland, Scotland, and the south of England, indicating where the Plague landed and spread first; circles mark port cities. The detail of Egypt and Syria shows the red (here gray) lines following overland trade routes. In both depictions, arrows mark the directions in which the Plague moved. To reiterate, Martin's and all subsequent maps of the Plague are based on Plague narratives and historians' analyses of them. Today, however, other kinds of maps dominate Plague studies. Epidemiologists and others invested in predicting the spread of contagious disease in order to control it currently do so through quite complex mathematical modeling. For example, theoretical physicist Dirk Brockmann has developed an animated GIF of a 'traveling wave' model for tracking or mapping disease over land as humans move slowly, on foot or on horseback, as in the Middle Ages.³ In fact, it may well be that the mobility of merchandise was more important than that of people: the Plague's infected fleas and rats traveled in cotton, fodder, forage, furs, grain, straw, and wool, via 'passive transport,' as J.F.D. Shrewsbury says,

3 See <http://rocs.northwestern.edu/projects/forecast.html>.

who adds that ‘under no circumstances could bubonic plague ever travel faster than the fastest speed of human transport’ (Shrewsbury, 1970, 29).

Discoveries in biomedicine are changing the way that we understand – and see – the Plague. Such discoveries are often visually represented and described as a ‘map,’ as in, for example, the computerized graphics of the *Y. pestis* genome taken from Plague victims in London c. 1348 that Kirsten Bos (an anthropologist specializing in aDNA) and Verena Schuenemann (an archaeologist) furnish (Bos *et al.*, 2011).⁴ Strange geography. Historians have long posited that climate change (the Medieval Warming Period [c. 950–1250], followed by the Little Ice Age) contributed not only to the Great Famine of 1315–1317, but to the virulence of the Plague when it first appeared in Western Europe about a decade later (recall my discussion of scale earlier). Research in many fields of study, including climatology, epidemiology, and dendrochronology, increasingly suggests that this was in fact the case. Through their analysis of the medieval *Y. pestis* genome, Bos and Schuenemann argue that both genetic change (a mobility: how a soil-dwelling bacillus evolved to infiltrate mammalian hosts) and ‘environment, vector dynamics and host susceptibility’ (a network) were implicated in the severity of the Plague in the 1330–50s (Bos *et al.*, 2011). In addition, the rat genome has also been ‘mapped,’ highlighting the particular genes implicated in susceptibility or immunity to the Plague (Medical College of Wisconsin).⁵ (Like classical and medieval T and O maps, this and other such maps are deliberately schematic representations.) In effect, these genetic mutations (accidental, usually random, changes in a genomic sequence) enjoy mobility as they are passed down from rat to rat. All of these semiotic systems – narratives, maps, scientific schema – can be described, according to ANT, as mediators (in a nodal, networky sense), and are worth examining in and of themselves as actants.

4 See <http://www.nature.com/nature/journal/v478/n7370/full/nature10549.html>.

5 See http://rgd.mcw.edu/rgdweb/ontology/annot.html?acc_id=RDO:0006354.

The Matrix

Thinking about the Plague and plague studies through network theory, one platform among many for mobility studies, presents the world of the Middle Ages differently, both geographically and conceptually. ‘Modern societies,’ says Latour, ‘cannot be described without recognising them as having a fibrous, thread-like, wiry, stringy, ropy, capillary character that is never captured by the notions of levels, layers, territories, spheres, categories, structures, systems’ (Latour, 1997, 2). Perhaps the notion that societies (one part of a larger assemblage) are connected – and mobilized – by threads, wires, and capillaries has never been (a) modern phenomenon at all.

For example, in the fourteenth century, silk, war, and Plague traveled essentially the same roads and took the same sea routes. As early as 1935, A.N. Poliak suggested that one way that historians can reconstruct the great east-west medieval trade routes is to follow what Michael Dols calls the ‘itinerary’ – a

lovely, *purposeful* word – of the Plague (Dols, 1977, 78). The Plague moved, as al-Wardī and others knew, but not quite in the way we know that it does now. For example, in the west, the Plague was generally thought to be the result of a foul miasma, ‘*per fetidum flatum venti*’ [a ‘stinking breath of the wind’], as Louis Sanctus (1304–1361) says ([1347?] 1856, 14). In addition, in the west, the Plague was also attributed to angels from on high; in the east, to jinn wielding arrows or swords (al-Manbijī [1362–1364] 1982, 69).⁶ To attribute such kinds of agency to what we now call *Y. pestis*, to describe it as a malevolence or a punishment, is naively anthro-centric – as is figuring the Plague as militarily strategic. However, to inquire after the Plague (more than a bacillus) as a *thing* (which is not to ask about its role, which can only be projected upon it rather than understood or perceived – perhaps simply survival) in an assemblage of things that includes humans, rats, fleas (ecto-parasites), ships, caravans, furs, grain, spices, blood, pus, sputum, cells, and chromosomes, might yield a different picture of mobility altogether. And, for all the changes that the Plague put in motion, for all it represents with respect to mobility across borders, it should be noted that *Y. pestis* is itself non-motile; that is, while it can multiply, it cannot move on its own. It is completely dependent on the mobility of other creatures and things. In *Plagues and Peoples*, William McNeill writes of ‘macro- and microparasitic patterns’: *Y. pestis* is a micro-parasite (it cannot be seen by the naked eye); the flea, a macro-parasite (it can be seen by the naked eye); moreover, humans are also macro-parasites in a biological war (McNeill, 1976, 150). Emmanuel Le Roy Ladurie, in ‘A Concept: The Unification of the Globe by Disease,’ offers another way to think about the Plague assemblage as he examines what he calls ‘the creation ... of a “common market” of microbes’ (Ladurie, 1981, 30). Increased trade in goods led to increased ‘trade’ in bacteria. He says of what he calls ‘traveling complexes’:

The world-wide ecology of plague ultimately concerns a complex relationship between man [*sic*] and bacillus, a relationship which relies upon the harmonious function of a *ménage à quatre* (rat, flea, bacillus, man) or ... *ménage à trois* (flea, bacillus, man). The very existence and geographical diffusion of ‘*ménages*’ of this type inevitably leads in the long term to friction and incompatibility of temperament. (Ladurie, 1981, 31)

In the course of writing this essay, I have found thinking about the Plague to be quite defamiliarizing. Sometimes looking at the shaded areas and arrows on maps of the transmission of the Plague feels like reading an Automobile Club triptik – not one for traveling humans, but one for traveling *bugs*. Scenes from the *Matrix* trilogy come to mind: the ‘real’ world, in which every inanimate and animate thing (most scarily, the human body) is defined by its borders (where things begin and end), disappears. Instead, we see and experience the material world as simply *data*: thresholds dissolve, the outlines of our flesh

6 Al-Wardī’s and Louis’ accounts of the ‘movement’ of the Plague raise important questions about how medievals conceptualized and expressed mobility. The *Canterbury Tales*, after all, is an imaginative exercise in mobility. Broadly speaking, it could be argued that the topoi of *translatio studii* and *translatio imperii* represent a medieval mobility *mentalité*. From a poststructuralist perspective, *translatio studii* is an unreconstructed mobility theory that assumes a one-way, hierarchical transmission of culture and cultural productions at the expense of the reality of different networks that are not only top-down, but bottom-up, sideways, and diagonal.

bodies dissolve and no longer matter; all that *is*, is digital green rain. Similarly, simultaneously tracking the movement of the Plague across North Africa, say, or across the genome of *Rattus rattus*, has furnished moments in which I can almost see the network – and it is a place in which humans do not dominate.

Humane Mobilities: In Praise of the Anecdote and Other Narrative Performances

In the provocatively-titled ‘Can the Mosquito Speak?’, Timothy Mitchell argues against the received view that the German invasion of Egypt in 1942 was the sole cause of Egypt’s failure to thrive economically in the 1950s. He introduces a wide array of nonhuman actants into the mix: most important, *Anopheles gambiae*, the sub-Saharan mosquito that caused the death of 100,000 to 200,000 people in the malaria epidemic of 1942–1944. Mitchell says:

The connections between a war, an epidemic, and a famine depended upon connections between rivers, dams, fertilizers, foodwebs.... What seems remarkable is the way the properties of these various elements interacted. They were not just separate historical events affecting one another at the social level. The linkages among them were hydraulic, chemical, military, political, etiological, and mechanical.... there are no accounts that take seriously how these elements interact. It is as if the elements are somehow incommensurable.... they shape one another, yet their heterogeneity offers a resistance to explanation. (Mitchell, 2002, 27)

Mitchell identifies a crucial lacuna, a disciplinary blindness, in twentieth-century histories of Egypt. In contrast, scholars of the p/Plague have historically thought *through* networks, though they did not describe their work in such terms. We have never studied humans and the p/Plague in isolation from nonhuman factors. And now, because of advances in genetics and epidemiology, the p/Plague-network is becoming much more visible and material. Yet I want to suggest that the contemporary subspecialty of plague studies may be creating its own disciplinary and theoretical blind spot: one might argue that, these days, nonhuman actants are actually being studied to a degree that is disproportionate to the study of human ones. It’s an understandable swerve into the sciences, but one that needs to be balanced by a tacking back into the humanities.

Let us return to de’ Mussi’s story of Caffa. Historians and epidemiologists have sometimes maintained that the tale of infected bodies that were supposedly hurled over Caffa’s walls is the first recorded example of what we now call biological warfare (Wheelis, 2002; Derbes, 1966). Perhaps. We do not know Jani Beg’s motivations, only his actions. The story certainly suggests that the Mongol leader may have believed, along with de’ Mussi, that

‘the intolerable stench would kill everyone inside.’ They did not know, as we do, that the fresher the corpse and therefore the more infected fleas it carried, the better. De’ Mussi’s story is told so often that it now figures as an indubitable topos in biowar literature. Some bioterrorist experts have suggested that pneumonic plague has potential as a weapon because it can be stabilized and aerosolized. In fact, the threat that the p/Plague might be resurrected or replicated and then ‘weaponized’ has set in motion a good deal of the current – sometimes quite well-funded – scientific research on the Plague (Cohn, 2002; Dennis, 2005; Cornelius, 2007). Scientists and humanists alike should be concerned about the instrumentalization of knowledge, of which this serves as an alarming example.

While it is true that current scientific research on the p/Plague has, at minimum, called into question the work of many earlier historians – and, in some instances, has proved that certain historians’ conclusions about p/Plague epidemics were just plain wrong – this does not mean that there is no longer any room for historians and other humanists in plague studies. Lester K. Little says that

the days of diagnosing past illnesses solely upon the basis of written sources are numbered if not entirely gone ... even while ... venerable orthodoxies of plague history are being dismantled in scientific laboratories, historians still have much to contribute, because epidemiological analysis of past epidemics based upon written accounts and records, rather than being replaced by laboratory identification ... and experimentation, is more important than ever precisely because it can now be done in tandem with biomedical science. (Little, 2012, 286)

Yes, historians are now committed to working together with scientists. More forcefully, I would add that the contributions that historians – and literary scholars and linguists and art historians – are capable of making ‘in tandem’ can never be replaced or eclipsed by scientific research. We should be wary of the materials – the documents of the archive – that historians have traditionally depended upon becoming devalued and even dismissed.

Mobility studies offer a productive site at which humanists can create new, multi-textured and rich histories and analyses of the p/Plague – to explore, for example, the cultural ‘resistances’ to explanation, as Mitchell puts it, a project in which the narrative mode is crucial. When Dominic Palazzotto says: ‘One can scarcely condemn [medievals] for not being modern, but one can examine their explanations of the plague and epidemic disease as a product of their intellectual tradition,’ he describes a central activity of the humanist’s vocation (Palazzotto, 1973, 60). In addition to contributing to a *histoire des mentalités*, sustained attention to texts *as* texts – in this case, p/Plague materials and sources (annals, chronicles, letters, travel accounts, diaries, medical treatises and tracts, together with imaginative literature, painting, and the plastic arts) – is also intrinsic to

the work of the humanities. To read, for the first time or the one-hundredth time, the horror and despair in Petrarch's cry, 'when has any such thing been even heard or seen? In what annals has it ever been read that houses were left vacant, cities deserted, the country neglected, the fields too small for the dead and a fearful and universal solitude over the whole earth?' (Petrarch [1348] 1969, 92) or the fortitude in de' Mussi's earnest assertion that 'everyone has a responsibility to keep some record of the deaths' (de' Mussi [1348] 1994, 21), is to experience the power of language: *delectare*, *docere* – *movere*. Reading such contemporary or near-contemporary narratives – particular, gruesome, courageous and/or terrifying, sometimes weirdly deracinated, examples of 'representational plenitude' (Greenblatt, 2000, 41) as much as they are of the impossibility of such – gives us a priceless opportunity to comprehend and respect and imagine the individuals who wrote such narratives, as well as to study how such narratives come to mean. We thereby engage in perhaps the most fundamental mobility of all: keeping the intellect and the heart on the move.

About the Author

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