Historiography and Covid-19. Some considerations

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1. Historians and epidemics. From Thucydides to Covid-19

Pandemics and epidemics affect all human activities. Therefore, human and social sciences, including historiography, are called to wonder about them and make their own contribution of analysis, mainly in regard to social impact and behavioural dynamics.

Not by chance, historians have been interested in epidemics since the ancient world. In the fifth century BCE, Thucydides narrated the pestilence that affected Athens during the Peloponnesian war; other ancient authors addressed the same or other epidemics.

In recent times, historians have not ignored the outbreaks of infectious diseases, but their interest has not been steady, having been influenced by two factors:

- Evolution of historiography. As is well known, in the 1930s the "historiographical revolution" due to *Les Annales* "school" greatly increased the attention for social history; in the 1970s, a more specific interest arose in environmental history and social history of medicine, finding a breakthrough with the publication of William McNeill's *Plagues and Peoples* (1976). This evolution has enhanced the attention for epidemics and, since then, the studies on the subject have been more and more numerous.
- New outbreaks. Generally, when infectious diseases hit humankind, the interest of historians (and of public opinion) in previous pestilences rises. For example, the first historical studies on the 1918 "Spanish" influenza were published after the "Asian" flu outbreak of 1957; the recent epidemics (SARS,

Swine flu, MERS, Ebola) and the "discovery" that infectious diseases do not belong only to the past, have further enhanced the attention of historians for previous pestilences (Philip, 2004, pp. 121-134; Heaton & Falola, 2006, pp. 205-230; Vagneron, 2018, pp. 21-43).

Overall, the interest of historians in epidemics has been belated. For example, the majority of the studies on the fourteenth-century Black Death[1] have been published in last three or four decades, although the research on the topic had begun in the nineteenth century (Benedictow, 2006, pp. 5-9). In recent times, countless studies have been published and, logically, they have proposed diverse narratives and interpretations of the pestilences that have followed one another over the centuries. Some studies have mainly focused on demographic data, others on social and economic impact, others on the responses of governments and local authorities, others, usually written by physicians or historians with medical background, on epidemiological factors (pathogens, transmission of infection, etc.). In last years, the history of epidemics has been better contextualized in the history of science and scholars have addressed new topics and posed new questions. On the whole, local studies are more numerous, but historians have also published several general histories of the major pandemics[2].

The research on past epidemics has to cope with some difficulties. First of all, sources are often partial and incomplete and, for the most ancient events, even the most basic data are unknown. For example, the pathogens of the Greek-Roman pestilences have never been identified; for the Black Death, the mechanisms of

[1] The so-called Black Death – which, as is known, in the years 1347-1350 killed between 30 and 60% of the European population – marked the beginning of the Second plague pandemic, lasted, with continual outbreaks, until the eighteenth century. The Black Death was the first occurrence of bubonic plague since the First plague pandemic, begun with the Justinian's Plague of 541-43 CE and lasted until about 750. The Third (and last) plague pandemic occurred between the second half of the nineteenth century and the early twentieth century, mainly hitting India and other underdeveloped countries.

[2] See, among the others, Spinney (2017) and Barry (2004) on the Spanish flu; Benedictow (2006) and Byrnes (2004 and 2012) on the Black Death; Harper (2017) on the first-millennium epidemics. For a more general overview of the history of pandemics, see Naphy & Spicer (2004), Snowden (2020a).

infection are not clear and there is not unanimous consent about the kind of disease (some scholars have disputed that it was a bubonic plague outbreak, provoked by the *Yersinia pestis* bacterium, although it remains the most common wisdom) (Byrne, 2004, pp. 15-32; Benedictow, 2006, pp. 35-34). In all cases, providing exact figures of victims and mortality rate is very difficult and, therefore, estimates are always approximate, even for the twentieth-century outbreaks. Today historians can benefit from the "genomic revolution", thanks to which scientists, recovering DNA from archaeological rests, are able to shed light on old diseases, but this, of course, does not provide all the desired answers, particularly about the social impact of epidemics.

Moreover, the history of epidemics is rarely included in the "general" history. Research reaches only specialists and the historians with different expertise usually have only a superficial knowledge of the impact of infectious diseases. The "general" histories devote very little room even to pandemics, which are frequently overlooked in national narratives and schoolbooks, despite their deep impact and long-lasting consequences.

This is true for both ancient and modern history. Important events of the Greek-Roman era, such as the "Antonine Plague" of 165-180 CE (possibly an outbreak of smallpox) and the "Cyprian's Plague" of 249-262 (perhaps an haemorrhagic fever) are usually neglected in the accounts of Roman history, also for the shortage of sources.

With regard to modern and contemporary age, the case of the 1918 influenza – the event most often compared to Covid-19 – is emblematic, as it is likely the most "removed" pandemic in history. Indeed, at the material time the influenza found very little room in the public discourse, because of the war censorship. In recent decades (mainly since the 1980s), the attention of historians has grown, many interesting studies have been published and several international congresses have discussed the issue (the first was held in Cape Town in 1998) (Philip, 2004; Vagneron, 2018), but the influenza is often neglected in the general histories of the twentieth century and, with some exceptions, is relegated to a footnote or few lines in the chapters on World War I.

Other events benefit from more attention. For example, the Black Death usually receives an adequate coverage in the books of

medieval history, because of its terrific impact, but most epidemics are frequently overlooked.

Not surprisingly, the outburst of the Covid-19 pandemic has increased the interest in the history of epidemics: "All history is contemporary history", Benedetto Croce said, as generally the past is searched to answer questions posed by the present.

At the onset of the pandemic, the first thing has been to reprint some books previously published, not only historical studies, but also novels, such as *La Peste* of Albert Camus (1947), and works of popular science, among which the well-known *Spillover* (Quanmen, 2012).

However, historians could not ignore the "demand" of knowledge of past epidemics and have endeavoured to provide the public with the desired information. Particularly, historians of medicine have written articles for the general press and have been interviewed by newspapers and magazines, addressing diverse topics: containment measures enacted during the past pestilences, economic and social consequences, communication, stigmas and scapegoats, experiences of individual physicians and sufferers. Medical historians, who are little used to address a broad audience, have been catapulted into the media debate – a "Warholian moment of celebrity", according to Lachenal & Tomas (2020) – albeit not to the same extent as microbiologists and epidemiologists.

More generally, both specialist and non-specialist historians have endeavoured to make their contribution. Many research groups have launched projects, sometimes aimed at the general public, on the history of communicable diseases. Just to give some examples: the American Association for the History of Medicine [AAHM] in May 2020 organized a two-days webinar on *Pandemic, creating a Usable Past: Epidemic History, Covid-19 and the Future of Health*[3], during which many scholars discussed the role of history in the face of Covid-19; the online journal *Origins. Current events in historical perspective*, published by the Ohio State University and the Miami

[3] https://www.histmed.org/epidemic-history. The AAHM has also proposed a collection of online resources on pandemics: https://www.histmed.org/covid-19-teaching-resources-and-materials-for-historical-research.

University, has created a special section on the history of pandemics[4]; in Brazil, the Foundation Oswaldo Cruz, aimed at promoting research on history of science, has devoted a section of its website to *O olhar dos historiadores* (the historians' gaze)[5]; the Consejo Mexicano de Ciencias Sociales [Mexican Council on Social Sciences] has organized a series of webinars on the role of human and social sciences, including history[6]; in Italy, the University of Turin has held some conferences on the infectious diseases in the ancient world[7]

Furthermore, several academic journals of human and social sciences, among which the *Journal of Global History* (Frankema & Tworek, 2020) and *Centaurus* (Charters & Vermeir, 2020), have published special issues on pandemics; the American Historical Association [AHA] and the Paris Institute for Political Sciences [Sciences Po] have compiled bibliographies of historical articles on Covid-19 and previous pandemics[8]; the Harvard Library has revived a virtual exhibit, *Contagion. Historical Views of Diseases and Epidemics*, first appeared in 2008, with materials on the history of infectious diseases[9].

Scholars have also discussed how to carry out research in time of pandemic (mainly in regard to the inaccessibility of archives and libraries) and have launched projects to preserve the memory of Covid-19. For example, some German universities have created *Coronarchiv*, a database aimed at collecting materials and personal memories of the pandemic, and the University of Arizona has

[4] https://origins.osu.edu/coronavirus-covid-19-pandemic-1918-flu-hiv-vaccination. Similar initiatives have been proposed by other U.S. universities, such as that of Minnesota: https://cla.umn.edu/history/news-events/story/covid-through-eyes-historians-3.

[5] www.coc.fiocruz.br/index.php/pt/todas-as-noticias/1768#.YFqo7i2h3BJ.

[6] www.comecso.com/category/las-ciencias-sociales-y-el-coronavirus.

[7] www.unito.it/eventi/le-pandemie-nella-storia-ciclo-di-conferenze-cura-del-dipartimento-di-studi-storici-e-della

[8] AHA: www.historians.org/news-and-advocacy/everything-has-a-history/a-bibliography-of-historians-responses-to-covid-19; Sciences Po: https://sciencespo.libguides.com/covid-19/approches-historiques.

[9] https://curiosity.lib.harvard.edu/contagion.

launched a similar project, *A Journal of the Plague Year* (echoing the title of a Daniel Defoe's book)[10].

The Covid-19 outbreak has also increased the interest for environmental history, as Sars-Cov-2 – the virus responsible for the pandemic, which spilled from animals to humans – raises a serious ecological issue. The environmental historians, who were used to study pandemics and infectious diseases since before Covid-19, have proposed new reflections about the relations between humans and environment, often stressing the unsustainable exploitation of nature (Alagona *et al.*, 2020).

The interest in past pandemics has also arisen among the general public. Newspapers and magazines of the entire world have argued that policy makers have to learn lessons from history. Generally such idea is proposed in very loose terms, based on the assumption that the past can be somewhat repeated.

Against this background, many historians have wondered how history can be helpful in the ongoing emergency. For the historians of medicine, the question is not completely new, because, since before the current pandemic, they have compared past and present epidemics and discussed the "lessons" that history can provide[11]. Covid-19 has exponentially increased the interventions on the topic. Countless articles have appeared in newspapers, blogs and websites, and also prestigious medical journals, such as the *New England Journal of Medicine* and *The Lancet*, have addressed the question (Jones, 2020a; Peckam, 2020; White, 2020). Generally, historians have suggested being cautious when comparing past and present events or have denied that such comparisons can be done[12].

[10] Coronarchiv: https://coronarchiv.geschichte.uni-hamburg.de/. A Journal of the Plague Year: https://covid-19archive.org/s/archive. For a list of other projects see https://histnum.hypotheses.org/3274.

[11] For example, in 1989, the Harvard historian Charles Rosenberg published an influential article about AIDS, outlining a pattern of the social reactions to epidemics (Rosenberg, 1989). Among the more recent debates, see Forum on Microbial Threat (2007).

[12] See, for example, Arnold (2020), Charters & McKay (2020), Corbellini (2020), Deligny (2020), Harper (2020), Jones (2020b), Lindemann (2020), Newfield (2020), Snowden (2020b), Taylor (2020).

2. Recurring elements in the history of epidemics

The "usefulness of history" in regard to pandemics is generally sought in the "examples of the past", namely in the recurring elements of social behaviour and social patterns of infection, which have emerged during many past pestilences. Therefore, it is necessary to provide a short overview of these elements. Of course, they have not characterized all past epidemics in the same way and have taken different forms in each individual case. In fact, social behaviour and popular reaction to infectious diseases are influenced by many factors: not only mortality, morbidity and case-fatality rate of each epidemic, but also symptoms, acquaintance with the disease, modes of transmission, etc. (Snowden, 2020a, pp. 83-87).

In any case, many recurring elements of past pestilences can be found, in varying degrees and diverse forms, in the current pandemic. The most important are the following.

a) Tension between collective interest and individual rights

Very often, during epidemics a tension arises between individual freedom and "non-pharmacological interventions", such as quarantine, physical distancing (improperly called social distancing), isolation of the infected, etc.

Such measures, rudimentarily implemented for the first time in Central and Northern Italy by the time of the Black Death and then improved in the following centuries (Cipolla, 2012, pp. 11-20; Cosmacini, 1988, pp. 112-118), have had a different impact depending on the circumstances. However, some events prove that, when correctly implemented, they are able to limit epidemics. For example, in the pre-industrial age some Italian States managed to contain several outbreaks of plague, as did the Lordship of Milan in 1348 and the Republic of Venice in subsequent centuries. Also in more recent times, the "non-pharmacological interventions" have produced encouraging results. Just think to the 1918 Spanish influenza: in the U.S., some cities implemented effective measures and, in such a way, managed to contain the epidemic; other cities, where the measures were not enacted, experienced a higher mortality rate (Spinney, 2017, pp. 99-124); in Oceania, whereas New Zealand suffered a severe outbreak, Australia was able to limit

the damage, at least in the first two waves of the pandemic, thanks to the rapid implementation of quarantine (Chandra, Christensen & Likhtman, 2020, pp. 418-419).

Nevertheless, during all epidemics many people, mainly those belonging to the sectors most damaged by the measures, such as merchants and traders, refuse to comply with them. Furthermore, the enactment of "non pharmacological interventions" often gives rise to upheavals and mass protests. Just to give some examples, in 1771 Moscow's citizens rioted against the measures enacted to contain a bubonic plague outbreak (Alexander, 2002, pp. 177-201); in Naples, during the cholera epidemic of 1884, many inhabitants of the popular (and most affected) neighbourhoods strongly protested against the health officials sent by the municipality to sanitize their houses and on some occasions they ostentatiously ate forbidden foods, such as unripe and overripe fruit (Snowden, 2020a, pp. 250-255). Likewise, in 1973, when in Naples scattered cholera cases were reported, fishermen publicly ate mussels, although authorities had forbid their consumption. Quite often, revolts and riots have been triggered by the brutality of the officials charged to enforce the measures, mostly when there was a pre-existing distrust of public authorities, as happened during the Third plague pandemic in the colonial India, and, more recently, in Liberia during the 2014-16 Ebola outbreak.

In the current pandemic, the "non-pharmacological interventions" are roughly the same as in the preindustrial age and their disregard is still common. In addition, demonstrations and protests against the measures have been organized in almost every country, often by owners of shops and restaurants or by deniers. A further problem is the politicisation of measures, whose respect sometimes depends on political ideas: often, populist-nationalist parties oppose the enactment of "non-pharmacological interventions", while moderate and leftist politicians back their implementation. This is logical, because usually the right supports the *laissez-faire* policy, whereas the left gives priority to collective interest and societal needs. In any case, the politicisation of "non pharmacological interventions" is a serious danger, as it spurs many people not to comply with them. The good news is that, unlike in the past, today the measures are associated to vaccinations and treatments.

Another frequent reaction to epidemics is flight: when a town is infected, many inhabitants, among those who can afford it, seek refuge elsewhere, escaping from both the disease and the containment measures. Flights have occurred countless times in history, even when moving was discouraged or forbidden by health institutions. The Covid-19 pandemic has been no exception. For example, in some countries, such as Italy and India, internal migrants moved back to their places of origin after the announcement or the enforcement of containment measures. However, as the pandemic has a global reach, it is difficult to find a safe place.

b) Scapegoats and stigmatization of ethnic and social groups

Very frequently, specific ethnic and/or social groups have been considered responsible for epidemics, particularly in the cases of sudden outbreaks (the endemic infectious diseases usually do not provoke reactions of this kind). People have often searched for scapegoats, believing that epidemics were intentionally caused by specific individuals, or have stigmatized some groups, regarded as potential, although not intentional, infectors. Not infrequently, these prejudices have provoked heavy discrimination and even physical assaults.

The most known case of scapegoating is that of Jews, who during the Black Death were blamed of provoking plague by poisoning the wells; based on this allegation, hundreds of Jewish communities were ravaged by Christian fanatics (frequently, with the support of the authorities) and thousands of people were killed (Winkler, 2005; Byrnes, 2012, pp. 193-196). Physical assaults also occurred in other cases. For example, by the time of the Italian plagues of the sixteenth-seventeenth centuries, some people, labelled “untori” (plague-spreaders), were accused of spreading the infection by applying poisonous ointments in specific places and several of them were executed. Some evidence suggests that also in more ancient times scapegoating was not unknown. For example, the Cyprian’s plague was one of the sparks that triggered the Decian persecution against Christians, occurred in 250 CE, because the “blasphemy” of Christians was thought to have unleashed the wrath of the Gods (at the same time, the plague eased the spread of Christianity, as many

people found that the traditional Gods were powerless) (Harper, 2017, pp. 136-159).

Generally, scapegoats belong to weak and defenceless groups. Furthermore, scapegoating is usually based on pre-existing prejudices. For example, the accusation of poisoning wells relied on allegations against Jews arisen since the eighth century CE.

Sometimes, the prejudices emerged during epidemics have had long-term consequences. The Black Death, for example, accentuated the attitude of "othering", which lasted for centuries.

In addition, often people endeavour to identify the "patient zero" or the carrier that has triggered an epidemic. For epidemiologists it is a vital insight, as it allows them to explore the features of infections. For the rest of population, the "patient zero" is often nothing but a scapegoat. The most known case is that of Gaëtan Dugas, a Canadian flight attendant that in the 1980s was unfoundedly blamed of having brought AIDS to North America (in truth, the disease had been circulating in the continent since at least the 1970s). The search for the "patient zero" has also taken place in the current pandemic. In Italy, for example, in February 2020 a man was wrongly identified as the first carrier of Sars-Cov-2 in the country. Though super-spreaders actually exist, often the discovery of "patients zero" proves unfounded.

Along with scapegoating, stigmatization is frequent in time of epidemics. Specific groups are laden with the stigma of being responsible for infectious diseases because of their behaviour or their features. For example, in the nineteenth and early twentieth centuries, European and American citizens considered Asians as the sick *par excellence* and potential spreaders of plague and cholera, because of their alleged poor hygiene[13].

Stigmatization, like scapegoating, has also provoked outbursts of physical violence. For example, in the preindustrial age the idea that infectious diseases were a chastisement of God suggested that eliminating the sinners would have hastened the end of the epidemic and, therefore, the violence against prostitutes, alleged witches,

[13] The fear of the diseases coming from the Orient is very ancient: even some texts of the Egyptian and Greek civilizations mention the health risk represented by the peoples of Asia (at that time, roughly equivalent to the present Middle East) (Cosmacini, 2011, pp. 48-49).

etc., including lynching and pogroms, was quite common (Snowden, 2020a, pp. 62-64).

In the current pandemic, there is no shortage of stigmatisation and attempts to identify scapegoats. The Chinese are the first suspects and the discrimination against them has increased throughout the world (even in China, cases of ostracism have been reported towards citizens from the Hubei province). Physical assaults against people of Chinese descent have occurred in many countries. Sometimes political authorities have endorsed the discrimination: former U.S. president Donald Trump repeatedly called Covid-19 "the Chinese virus" and other European and American politicians have made similar accusations. The stigmatization is eased by the centuries-old "sanitary distrust" of Asian people and, above all, by the more general xenophobia, widespread in Europe and North America.

In many countries, mostly in Europe, the search for scapegoats diminished after that the pandemic spread worldwide. Indeed, pointing the finger at China – one of the most powerful countries in the world – is not like attacking defenceless minorities; after the initial errors in communication, the Chinese government has proven to be one of the most capable in the containment of the epidemic. Nevertheless, in some countries, such as the U.S., discrimination and violence against people of Asian descent have not ceased.

The Chinese, furthermore, are not the only victims of xenophobia. Xenophobic and populist leaders have seized the opportunity to claim the enforcement of anti-immigration policies, though the countries of origin of migrants, for example those of Africa, are averagely less affected by Covid-19 than the Western world. The "sanitary fear" of migrants relies on pre-existing xenophobic feelings: since before Covid-19, accusing immigrants of "bringing illness" was not unusual among the supporters of populist parties. The pandemic has increased fear and hate. In some countries, such as India, even internal migrants have been blamed as potential infectors and many cases of abuse and discrimination have been reported. In the same country, the pandemic has also heightened the pre-existing tension between Hindus and Muslims. The latter, viewed as potential spreaders, if not as intentional propagators of the virus, have been

suffering stigmas and discrimination since the beginning of the emergency (Roy, 2020; Bhanot *et al.*, 2021).

c) Stigmatization of infected individuals and health workers

Also the infected are often victims of stigmatization. Stigma, in this case, must not be understood as purpose to keep physical distance from sufferers, which for many communicable diseases is recommendable, but as considering them somewhat responsible for their own illness. In the past, the sick were often regarded as sinners and their diseases were considered a chastisement meted out by God. This did not occur only in the preindustrial age, but also in more recent times, for example in the 1980s-1990s towards the sufferers of AIDS and the HIV-positive individuals, viewed as culprits of homosexuality and drug use (and heavily ostracized as potential infectors). Stigmatization has also occurred for reasons other than the divine punishment, like in the nineteenth and twentieth centuries against people affected by tuberculosis, since when the transmission by contagion was discovered (Snowden, 2020a, pp. 322-323), and against sufferers of plague and cholera, often regarded as filthy and backward people.

Paradoxically, on some occasions a sort of stigma hit the groups less affected by epidemics, such as Jews in the medieval epidemics of plague and affluent people during the cholera outbreaks[14], as their lower susceptibility to infection appeared suspicious.

Today, in many countries the sufferers of Covid-19 are usually regarded as victims, rather than as sinners or culprits. Nevertheless, they have experienced some forms of stigmatization, sometimes because people believe that they have exposed themselves to unnecessary risks or simply because they are viewed as potential spreaders of the disease.

A similar kind of stigma is directed at health workers. In the past, physicians and health officials were often regarded with suspicion, due to the widespread (and often justified) distrust of medicine (Cipolla, 2012; Cosmacini, 1988, 114-118). Today, this distrust is less common than in the preindustrial age, but it is dangerously

[14] Cholera is provoked by contaminated food or water and has always been a disease of poverty, as the rich, living in healthier housing condition and consuming better aliments, are less susceptible.

increasing in some sectors of public opinion. Also for this reason, sometimes the health workers employed in Covid-19 wards are ostracized as potential spreaders. In some cases, physicians have been forced to spend some days in the restrooms of their hospitals; verbal abuses and physical assaults have been reported in several countries (Islam *et al.* 2020, p. 1622-1623; Bhanot *et al.*, 2021). Fortunately, for now such irrational attitude belongs to a minority of population.

d) Proliferation of irrational theories, charlatans and denialism

Irrational and antiscientific theories have accompanied epidemics since the dawn of time. In the preindustrial age, such theories were mainly based on religious beliefs and often gave rise to counterproductive actions, such as processions and ceremonies. Today, the religious interpretation of the events is less common, but in several countries the organization of ceremonies and rites has contributed to spread the contagion.

Moreover, not all anti-scientific theories rely on religious beliefs, in the present like in the past. For example, during the Middle Age and Early Modern Era, the use of talismans against plague was widespread. Ideas of this kind have never disappeared and not even the mass alphabetization and the multiplication of information sources, occurred in last decades, have thwarted their dissemination. In 2002, for example, in China the theory that vinegar prevented SARS was quite common. Today, the social media (and, sometimes, even the "traditional" media) are full of weird ideas on covid 19: facemasks would be harmful to health; the pandemic would have been purposefully unleashed to reduce the world population; the 5G technology would hasten the spread of infection; etc.

These beliefs are endorsed only by minorities, but they are not rare and may be very dangerous, as their supporters tend not to comply with the containment measures and to refuse vaccination, thus making it difficult to reach herd immunity. Furthermore, those who believe hoaxes are inclined to follow useless and dangerous "measures of prevention", such as drinking alcohol or even swallowing bleach (Teovanović *et al.*, 2020; Islam *et al.* 2020).

The dissemination of such theories is eased by charlatans and scammers, who during epidemics have always thrived. Over the

centuries, these pseudoscientists have proposed the most bizarre treatments, either for personal interest or because they actually believe in the effectiveness of alternative medicine. This did not happen only in the preindustrial age, but it has also been frequent in more recent times. At the time of the Spanish influenza, for example, newspapers often published advertisements of products that claimed to be able to fight the disease (not only tablets, but even toothpastes and other hygiene products) (Tognotti, 2016; Spinney, 2017, pp. 133-139).

Today, in many countries the law forbids misleading advertisements, but "alternative" treatments are still proposed. Among them are, for example, the proposal to treat the Covid-19 infections by hydroxychloroquine (a drug used for other diseases), which the World Health Organization [WHO] and many scientists have declared ineffective against Sars-Cov-2; the claim of home care instead of vaccination, etc., as well as many bizarre treatments, such as eating garlic or hot peppers.

Also denialism, which today infests social media, has always accompanied epidemics, above all in their first stages. Many people – sometimes for economic interest – refuse to accept the reality of the epidemic, frequently stating that it is a hoax disseminated by governments to control citizens or for other evil reasons. Sometimes these theories have provoked violent reactions and physical assaults. Just to give an example, in 1630, in the town of Busto Arsizio (close to Milan), the physician who confirmed the presence of plague was shot to death (Naphy & Spicer, 2004, p. 86).

The worst scenario occurs when pseudoscientific theories and denialism are endorsed by institutions and rulers. Unfortunately, this is not rare. Often local authorities have sought to hide the outbreaks and have responded very slowly. For example, institutions, citizens and even some physicians were very reluctant to admit the occurrence of plague in Marseille in 1720, (the last great outbreak of plague in Europe, which killed about half of the city's population), thus easing the spread of infection (Naphy & Spicer, 2004, pp. 135-150); more recently, former South-African president Thabo Mbeki, in office from 1999 to 2008, repeatedly denied the presence of AIDS, although in the country it claims tens of thousands of victims every year.

During the present pandemic, several political leaders have sought to conceal the truth or minimize the impact of the virus. In the first days of 2020, Chinese authorities concealed the first cases of infection and informed the WHO belatedly. Later, several rulers, such as Donald Trump, Brazilian president Jair Bolsonaro and many local authorities in the entire world, have repeatedly underestimated the impact of the pandemic.

Also the opposition to vaccination, which today is widespread, is an old story, dating back to the "variolation" in the eighteenth century (Williamson, 2007).

e) Social inequality

The social impact of past epidemics, that is how infectious diseases affect the diverse social groups, is difficult to be defined, because of the shortage of data. However, it is certain that, on average, the marginalized and the poor experience the highest rates of morbidity, fatality and mortality; the upper classes are less likely to contract infectious diseases and have more opportunities to recover when infected. Indeed, they usually live in better housing conditions, whereas poor citizens and socially excluded groups are often relegated in overcrowded and unhealthy neighbourhoods (if not in slums). Furthermore, the affluent people have more chances of isolating themselves, as they have enough resources to survive without earning money; they are averagely more educated, which allows them to understand the reality of the epidemic and take countermeasures.

Furthermore, when the members of the upper classes are infected, their better nutrition and better health, along with the easier access to care, improve the chances of recovering.

This does not mean that the affluent and powerful people are immune from microbes: the history of infectious diseases is full of wealthy businessmen, rulers, monarchs, etc. died from the contagion; in the past, the access to care was not always beneficial and some commonly used treatments, such as bloodletting, are nowadays known to be counterproductive (Cosmacini, 1988, pp. 23-27); many epidemics sowed death in all social classes.

However, it is certain that generally the upper classes risk less than the poor. For example, plague was not a disease of poverty,

but poor and socially excluded groups were affected more severely. Some evidence suggests that, although the Black Death swept through all social classes, the poor experienced higher morbidity and mortality rates; all the following plagues hit the low-income citizens, mostly those living in the popular urban districts, more severely than the rich (Benedictow, 2006, pp. 258-266; Alfani, 2013; Alfani & Murphy, 2017, pp. 323-326); the Third plague pandemic not only affected the low-income countries almost exclusively, but the population of European descent living in those places suffered lower mortality rates than the natives; at the time of the Spanish flu, in the U.S., Native Americans experienced a greatly higher death rate than Whites; some infectious diseases, such as cholera, are specifically diseases of poverty.

Quite often, the susceptibility of the poor to infections has also raised stigma against them, as they have been viewed as potential spreaders.

With regard to Covid-19, data show that the marginalized are suffering more[15], mainly in developing and emerging countries. In Brazil, Sars-Cov-2 is sweeping through the citizens of African descent and those living in *favelas* with particular virulence; in India the lower social classes are paying the highest price. The housing conditions and the need to earn money, indeed, prevent the inhabitants of popular neighbourhoods and slums to protect themselves. Also in the Western countries the pandemic is affecting the poor and the marginalized more severely. For example, in the U.S. the mortality rate is particularly high among Blacks, Native Americans and Hispanics (but ethnicity has a minor impact than education, given that the citizens with lower education degrees are experiencing a much higher mortality rate, also due to their jobs) (Chen *et al.*, 2021); in the entire world, the mortality rate is higher in the low-income neighbourhoods (OECD, 2020). However, in the industrialized countries, access to care and proper nutrition are today more available than in the past and thus, under the sanitary point of view, the differences among social groups are smaller.

[15] As is known, covid-19 has hit the industrialized world harder than the low-income countries, but this is a separate issue, probably due to environmental and climatic factors and, in regard to the case-fatality rate, also to the age structure of population (not to mention the unreliability of the data of many countries).

Unfortunately, these are not the only inequities, because for the marginalized and the poor also the social-economic consequences of epidemics are harder. The impact of the past pandemics on economy has been diverse, depending on the circumstances: some events, such as the Black Death, caused a reduction of economic inequality, but in many other cases (for example, the outbreaks of plague in the early modern Europe) the gap between the rich and the poor grew (Alfani & Murphy, 2017).

Nowadays, Covid-19 is causing a further increase in the social and economic distance: brutally speaking, the rich is becoming richer and the poor is becoming poorer. The economic crisis due to the virus is affecting the marginalized, such as racial minorities and precarious workers, more than the other citizens, and the expected collapse of the Human Development Index will likely damage vulnerable countries and groups more seriously (UNDP, 2020; Oxfam, 2021). Of course, foretelling the long-term consequences is impossible, but it is highly unlikely that, after the pandemic, the distribution of wealth will be fairer: Sars-Cov-2, which has hit an already unjust world, is increasing injustice.

f) Overexposure to risk of health workers

Health workers are always one of the categories most affected by epidemics and experience the highest mortality rates. Just to give some examples, during the Early Modern Age in Italy health officials were forbidden to leave the cities affected by plague, while many other inhabitants sought to save themselves by fleeing (but sources also report cases of doctors who fled the infected cities) (Cosmacini, 1988, pp. 113-114). More recently, physicians and nurses were overrepresented among the victims of the 2014-16 Ebola epidemic in West Africa, mainly because of the poor condition of hospitals and medical facilities (Evans, Goldstein & Popova, 2015).

The current pandemic has in turn claimed the life of numerous health workers, particularly in the first months: according to Amnesty international, by August 2020 at least seven thousand physicians and nurses had died of Covid-19[16]. Main symbol of this

[16] https://www.amnesty.org/en/latest/news/2020/09/amnesty-analysis-7000-health-workers-have-died-from-covid19/.

sacrifice is Li Wenliang, a Chinese ophthalmologist that in December 2019 first identified some "strange pneumonias", later dubbed Covid-19, in the city of Wuhan, then he was infected and died on 7 February 2020.

3. History and historians faced with the Covid-19 pandemic

The presence of similarities among the epidemics that followed one another over the centuries must not suggest that history is a handbook containing responses and advice for our behaviour. History is not *magistra vitae* in this sense.

This is not the place for a discussion on the "usefulness of history" – an issue that intellectuals and scholars have debated since the ancient world. However, it is important to take into account some crucial assumptions: they are banal, above all for professional historians, but it is worth connecting them to the current pandemic, as in many cases newspapers and other media have recommended learning lessons from history. First of all, it is necessary to remind that events do not repeat themselves exactly like in the past and, consequently, historical analogies are complex and never perfect. History can be "useful" in several ways, but its "usefulness" is indirect and mediate. The main element of "usefulness" is likely collective memory, not the conscious knowledge of past events: memory is unconscious, but essential in determining behaviour and actions, whereas a deep knowledge of the past belongs to very few people.

With regard to epidemics, the memory of centuries of battles against infectious diseases influences our actions and the past experiences affect social behaviour and political decisions. However, the inappropriate "use" of such experiences, based on the assumption that they can be replicated, may lead to unexpected outcomes. An example comes from the antimalarial campaign: as the Yale historian Frank Snowden (2020a, pp. 357-384) pointed out, the eradication of malaria in Sardinia, carried out after the World War II, suggested that the disease could be worldwide eliminated; consequently, the WHO and other institutions launched a broad anti-malarial campaign, but it was unsuccessful, as the "victory" in Sardinia had been due to peculiar factors, not present elsewhere.

Moreover, the present pandemic is different, under many points of views, from the past epidemics, not only from those of the pre-industrial age, but also from those of last centuries.

Compared to the diseases of the pre-industrial age, the current pandemic is, of course, completely different. Just to highlight two elements, think to mortality rate and collective imagery. The mortality rate, as is known, in the pre-industrial age was enormously higher and infectious diseases provoked huge demographic collapses, which have never occurred again. Even admitting that the Spanish influenza had a higher death toll than the fourteenth-century plague, as some scholars have suggested[17], its impact on demography was starkly lower: for the Black Death, the estimates of deaths range from 30% up to 60% of the European population (from 75 to 200 million deaths in Europe and Asia in absolute data); for the 1918 flu, they range from 1% to 5,4% of the world population (from 17 to 100 million deaths worldwide). In the case of Covid-19, to date (June 2021) the death toll is between 0,04 and 0,1% of the world population (that is between the 3,5 millions reported deaths and the maximum estimate of 7,6 millions[18]). This does not mean to underestimate the drama of the ongoing events, but only that the comparisons with the epidemics of the past, which sometimes appear in the media, are not founded.

Furthermore, in the preindustrial age, epidemics were a central element of the collective imagery. The dread began to diminish in the nineteenth century (also with a shift from plague to cholera as most feared infection) and nowadays people is much little scared by infectious diseases, mainly because their place as first cause of death has been taken by chronic-degenerative illnesses, thanks to the "mortality revolution" occurred between the nineteenth and twentieth centuries. It is true that, in the 1980s, AIDS increased the concern for communicable diseases, demonstrating that they were not defeated, but the level of fear did not even remotely reach that

[17] Johnson & Muller (2002) raised the death toll of the 1918 influenza, arguing that it killed no less than 50 million people worldwide. For the epidemics of the pre-industrial age see the data provided by Alfani & Murphy (2017, pp. 316-317), based on the most recent scholarship.

[18] See the data of the Institute for Health Metrics and Evaluation, https://covid19.healthdata.org/global?view=cumulative-deaths&tab=trend.

of the preindustrial age. Today, Covid-19 has raised the concern again, forcing human beings to change many of their habits, but, of course, in the collective imagery it has not the place that belonged to plague and other infections of the past.

The current pandemic also appears different from the epidemics of the twentieth and twenty-first centuries. Indeed, it features several unique (or uncommon) elements, not only because the pathogen is novel, but also in regard to social and cultural impact, due to the context in which it has erupted. Let us see some of these peculiarities.

– It is one of the rare epidemics of last centuries to affect the rich and industrialized part of the world more than the developing countries. In recent times, epidemics have usually hit low-income areas far more severely (think to cholera, Third plague pandemic, AIDS, and, more recently, SARS, Ebola, Avian influenza, etc.); some infectious diseases (tuberculosis, malaria, rabies, etc.), almost eradicated in the industrialized world, are still endemic in the developing countries, where the "mortality revolution" has not fully accomplished; the deadliest epidemic of the twentieth century, the 1918 influenza, did not spare the Western countries, but Asia, Africa and Latin America experienced higher mortality rates (Patterson & Pyle, 1991, pp. 4-21); the main exception of last years, the 2009 Swine flu, which primarily hit the industrialized countries, had lower mortality and case-fatality rates than most other epidemics.
  Covid-19, if the official data are reliable, has affected Europe, North America and some emerging countries, such as Brazil and India (where, however, a significant percentage of population lives below the poverty threshold) more severely than the rest of world. The developing countries are not immune from the virus, but in many of them, particularly in those of Equatorial and Southern Africa, morbidity is low. This has very significant consequences, first and foremost the greater attention of scientists, international institutions and media, as well as the availability of large funds to face the emergency.
  However, foreseeing the future paths of the disease and its impact on low-income countries is impossible, also for the rise of

variants. India, particularly, risks becoming the worst scenario, making Covid-19 more similar to the epidemics of last two centuries.

– It is the first pandemic associated to an infodemic, namely "too much information including false or misleading information in digital and physical environments" (WHO definition[19]). Rumours have always accompanied epidemics; the recent outbreaks (for example, the Ebola epidemic of 2014-16) were already characterized by the multiplication of sources of information. Today, the problem is more serious because, thanks to the web 2.0 and the global reach of the pandemic, everybody has become a medium and, overestimating their own understanding of the events, they feel entitled, if not compelled, to publicly disseminate their views. Often, this leads to the dissemination of misleading information, which may have disastrous outcomes.
The infodemic, however, has also been caused by the "traditional" media, such as TV networks and newspapers, which have devoted huge space to Covid-19 and sometimes have provided fake or misleading news. Unfortunately, more information does not mean better information.

– It is the pandemic with the most rapid and effective response of science. In the past, epidemics represented the most stinging defeats of medicine, which was almost completely powerless. During the medieval and early modern epidemics, many physicians felt ashamed of their helplessness and the popular distrust of science grew (Cosmacini, 2011, pp. 216-221). In more recent times, the Spanish influenza constituted another defeat, as physicians, despite the enormous scientific progress of the nineteenth century, were almost completely unable to treat sufferers and did not grasp the etiology of the disease.
Nowadays, the situation is different: shortly after the first Covid-19 cases, the scientific community has embarked on a huge effort to analyse the pathogen; although Sars-Cov-2 is a novel virus, vaccines have been produced in record time. Some countries (Israel, U.K.) have begun to recover a year after the

[19] https://www.who.int/health-topics/infodemic#tab=tab_1

emergence of the disease and there is hope that it can be defeated in the whole world. The main problem is not represented by scientific research, but by the distribution of vaccines, which privileges specific countries and social groups, and by the possible evolution of the pathogen.

– As Covid-19 has mainly spread in the industrialized countries, on average people enjoy better health than in the past; healthcare and public hygiene are more advanced. However, there are a number of shortcomings, mainly in the countries where the health system is based on private enterprise and does not provide all citizens with equal access to care. Furthermore, the "advantage" is not broad-based (think to countries such as India and Brazil, which are undergoing serious problems for the limits of their health system and the lack of oxygen) and it risks being lost if the pandemic hit the low-income countries harder.

– The world is much more rapidly interconnected. Long-distance trades and exchanges have always existed and have often fostered the circulation of diseases (as is known, many pathogens were carried by cargo ships); already in the early twentieth century, the Spanish flu was a really global pandemic, reaching every corner of the world. However, today the exchanges are faster, mainly thanks to air transport, and this influences the spread of the infection and will likely have impact on its social and economic consequences.

Also because of these peculiarities, history cannot be used as a formulary with answers and solutions. As Marc Bloch pointed out, history is the "science of change", not the science of repetition.

Moreover, if the errors of the past are repeated, at first glance it might seem that history has taught nothing. In truth, history is all but useless and it is thanks to previous experiences that incommensurable progress, although not perfect, has been achieved. During a pandemic, medicine and other sciences involved in the direct and "immediate" management of the emergency play a primary role, but also human and social sciences, including historiography, can be useful, as they help to understand the

dynamics of social behaviour and the impact of the disease on society. Indeed, although research is directed to very few people, in the medium term it can reach the general public, through schools and other channels, improving the understanding of pandemics, helping people to face them.

Indeed, history can create awareness of the risks and the potentialities inherent in social behaviour and can provide a general framework of trends (which, however, in each individual case features its peculiarities). For example, history shows that, since the early twentieth century, epidemics have no longer provoked mass hysteria and outbursts of religious fanaticism, at least not to the same extent as in the previous centuries, but also that irrational and anti-scientific attitudes have not disappeared and still jeopardize the efforts to contain epidemics.

Furthermore, the history of epidemics proves that the dissemination of proper information is a vital need. In the past, the failures in communication have produced catastrophic outcomes, easing the spread of diseases and creating stigmas and discrimination.

History also shows the importance of international coordination, which enables to share medical protocols and research results, as well as to harmonize containment measures. Microbes know no borders and, to effectively fight them, men must sweep any "health nationalism" aside. The Covid-19 pandemic is demonstrating that much progress has been achieved, mainly in the field of scientific research, but also that many shortcomings persist, for example in the distribution of vaccines and for the little transparent relations between some governments and the international organizations, *in primis* the WHO. These shortcomings mainly endanger the low-income countries, but they may have negative effects in the entire world.

In addition, history proves that that it is necessary to be vigilant and ready to cope with possible future pathogens. Unfortunately, new viruses and bacteria may affect humankind, the existing microbes are able to mutate and old communicable diseases may re-emerge. Plague, disappeared from Europe in the eight century CE, re-emerged after about six hundred years with extreme virulence; in the second half of the twentieth century, many scientists were confident that the world was going towards the complete

eradication of infectious diseases, but then AIDS, SARS, Ebola, Covid-19 and other illnesses came to remind that the "war" against microbes is by no means won and that they will "accompany" human beings for a long time to come.

Moreover, history shows the limits of science, but also that it is the only way to overcome the pandemic. This is likely the crucial point. Today the distrust of medicine is growing (just think to the widespread opposition to vaccination) and social sciences could help to give confidence to people. The problem is not scientific research, as many studies on the history of medicine exist, but the more general knowledge of history. Usually, pandemics and communicable diseases are not part of school and university programmes of history (with some exceptions) and they are almost completely ignored by the general public. However, a better knowledge could teach people that, although medicine has not the magic bullet, there are not alternatives to fight an infectious disease. For example, teaching students the eradication of smallpox and the impact of vaccination on many other diseases might reduce the distrust; likewise, explaining that in 1918 medicine was totally unable to fight the Spanish flu, whereas today many tools, albeit not perfect, allow us to cope with infectious diseases, could teach to welcome the progress of science. Of course, it would be a slow and mediate process and its impact could be seen only after years.

In any case, the current pandemic will have serious and long-lasting consequences, first under the psychological point of view. Covid-19, like the Spanish influenza in 1918-19 and the AIDS in the 1980s, has demonstrated that man is weaker than he was though to be.

As far as historians are concerned, they will likely devote more attention to epidemics and infectious diseases. The challenge is not to publish new studies on epidemics, which medical and environmental will certainly do, but to integrate the outbreaks of infectious diseases into general history (think, for example, to the Spanish influenza in relation to the World War I and the post-war crisis). Probably, after the current pandemic also the non-specialist historians will be more interested in the relations between society, environment and illness: pandemics, as said above, affect all human action, and, therefore, social, political, economic, and cultural

historians should take them into account, when necessary, in their studies. In such a way, the history of infectious diseases would gradually reach the general public, improving the more general knowledge of the subject.

Also Covid-19 will become soon a history topic. Of course, there is no telling how much room it will find in books and collective memory, but it is certain that at present it is having a huge cultural impact and, in the media of the entire world, it has overshadowed any other topic. Therefore, it may not be forgotten or relegated to a footnote.

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