



Black Death of 1348 in Florence and SARS-CoV-2 (COVID-19) in the 650th anniversary of the death of the writer Giovanni Boccaccio (1313-1375)

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Summary

The 650th anniversary of the death of the Tuscan writer Giovanni Boccaccio (1313-1375) provides an opportunity to reread some pages of his masterpiece, the *Decameron*, from a historical-medical perspective. In this work, Boccaccio gives an account of the “Black Death”, a devastating pandemic of bubonic plague, which reached Europe, Messina (Sicily), from Asia Minor in September of 1347. The plague travelled along the commercial route taken by Genoese sailors returning from their strategic trading posts at Kaffa on the Crimean Peninsula, which was under siege by the Mongols. The framework, the cage that encloses the 100 short stories that comprise Boccaccio’s work, is the starting point for a novelistic reinterpretation. On an unspecified summer day in 1348, the plague broke out in Florence, Italy. In a few years, the terrible “Black

Death” decimated the population of Europe. The city of Florence was shocked by the aggressiveness of the disease and by the collapse of the most basic norms of respect and civil coexistence. On the 650th anniversary of Boccaccio’s death, the authors of this short article commemorate this great writer, his work and, in particular, the historical, social and public health responses to this massive pandemic. The Black Death shared some similar features with the recent COVID-19 pandemic: from the initial difficulties and misunderstandings to the adoption of public safety and prevention measures, such as quarantine, and the lasting impact on society after the event had passed. The similarities between Boccaccio’s description and what we experienced during the COVID-19 era regard also other aspects of public health aspects.

Introduction

The 650th anniversary of the death of the Tuscan writer Giovanni Boccaccio (1313-1375) (Fig. 1) provides an opportunity to reread some pages of his masterpiece, the *Decameron*, from a historical-medical perspective.

In 1348, the “Black Death” broke out in Florence, (Italy) (Fig. 2); the city was shocked by the virulence of the disease and the dissolution of the most basic norms of civil coexistence.

The plague served Boccaccio as a prologue to his literary masterpiece, describing the moral misery and death that reigned in human society.

Seven young women and three young men met in the Dominican church of Santa Maria Novella in Florence and, at the suggestion of one of them, decided to move from the city to the countryside, in the hope of escaping contagion – although the plague did not spare the countryside either – and with the stated aim of living honestly, far from the moral decay that reigned supreme in Florence.

Over the course of two weeks, each member of the group took a turn at being king or queen over the others, deciding how to spend the day and establishing the theme of the stories that will be told in turn each day. These narrative spans ten days of the two weeks, hence

the title of the book, “Decameron” or “Ten Days”; in all, 100 tales are told.

Although remembered by most people as a repertoire of comical and licentious situations, the *Decameron* seeks

Fig. 1. Giovanni Boccaccio, affresco, 1450, Galleria degli Uffizi, Firenze. [Public domain. Wikipedia commons].



Fig. 2. The Plague in Florence in 1348. Luigi Sabatelli engraving of the edition he edited of the *Decameron*. [Public domain. Wikipedia commons].



to convey a profoundly serious message, an invitation to a serene and courageous view of life, far from ignoring moral and religious values, but without surrendering to fideism and moralism. It therefore indicates a way to celebrate and exalt human vitality and assert the ability to adapt in the face of adversity, such as the plague that struck Florence in 1348, which forms the backdrop to the work.

It is a work that extols intelligence (ingenuity) and cunning as effective and useful means of mastering fortune, which is seen as an unpredictable factor in earthly life.

Through his 100 short stories, the author, the writer Giovanni Boccaccio explores the complexity of man and his nature, addressing themes such as love (both carnal and spiritual), pranks, religious hypocrisy and the transformation of contemporary society, while also highlighting the virtues of the mercantile world and social satire.

The *Decameron* is also a tribute to the power of literature and the art of storytelling as a means of exploring and understanding the human soul.

BLACK DEATH

The opening page of the first day of the *Decameron* focuses on three thematic themes:

- the description of the plague in Florence in 1348;
- the gathering of the joyful company of ten young people in the church of Santa Maria Novella;
- their refuge in a villa in the countryside to escape the contagion [1].

Boccaccio provides a very lively description of the plague, hypothesizing its origin from the East and examining the various possible causes, ranging from divine punishment to the influence of the stars:

I say, then, that the years of the beatific incarnation of the Son of God had reached the tale of one thousand three hundred and forty-eight, when in the illustrious city of Florence, the fairest of all the cities of Italy, there

made its appearance that deadly pestilence, which, whether disseminated by the influence of the celestial bodies, or sent upon us mortals by God in His just wrath by way of retribution for our iniquities, had had its origin some years before in the East, whence, after destroying an innumerable multitude of living beings, it had propagated itself without respite from place to place, and so, calamitously, had spread into the West. In Florence, despite all that human wisdom and forethought could devise to avert it, as the cleansing of the city from many impurities by officials appointed for the purpose, the refusal of entrance to all sick folk, and the adoption of many precautions for the preservation of health; despite also humble supplications addressed to God, and often repeated both in public procession and otherwise, by the devout; towards the beginning of the spring of the said year the doleful effects of the pestilence began to be horribly apparent by symptoms that shewed as if miraculous [2].

Boccaccio then describes the symptoms of the disease, which in the East manifested itself with abundant nosebleeds, while in Florence black buboes appeared on the bodies of plague victims.

The buboes could vary in size, but initially they were concentrated in correspondence with the lymph node stations: armpits and groin.

Not such were they as in the East, where an issue of blood from the nose was a manifest sign of inevitable death; but in men and women alike it first betrayed itself by the emergence of certain tumours in the groin or the armpits, some of which grew as large as a common apple, others as an egg, some more, some less, which the common folk called gavoccioli. [011] From the two said parts of the body this deadly gavocciolo soon began to propagate and spread itself in all directions indifferently; after which the form of the malady began to change, black spots or livid making their appearance in many cases on the arm or the thigh or elsewhere, now few and large, now minute and numerous. [012] And as the gavocciolo had been and still was an infallible token of approaching death, such also were these spots on whomsoever they shewed themselves. The disease could be transmitted from human to human but it could also be transmitted by objects and could also affect animals.

Moreover, the virulence of the pest was the greater by reason that intercourse was apt to convey it from the sick to the whole, just as fire devours things dry or greasy when they are brought close to it. [015] Nay, the evil went yet further, for not merely by speech or association with the sick was the malady communicated to the healthy with consequent peril of common death; but any that touched the clothes of the sick or aught else that had been touched or used by them, seemed thereby to contract the disease.

I say, then, that such was the energy of the contagion of the said pestilence, that it was not merely propagated from man to man, but, what is much more startling, it was frequently observed, that things which had belonged to one sick or dead of the disease, if touched by some other living creature, not of the human species, were

the occasion, not merely of sickening, but of an almost instantaneous death.

Doctors were completely helpless, and there was no effective medicine: the only possible solution was to flee. Boccaccio emphasizes that during the emergency, charlatans proliferated, facilitated by the fact that many doctors had left. Thus, useless, if not harmful, remedies were administered [3].

Some again, the most sound, perhaps, in judgment, as they were also the most harsh in temper, of all, affirmed that there was no medicine for the disease superior or equal in efficacy to flight; following which prescription a multitude of men and women, negligent of all but themselves, deserted their city, their houses, their estates, their kinsfolk, their goods, and went into voluntary exile, or migrated to the country parts, as if God in visiting men with this pestilence in requital of their iniquities would not pursue them with His wrath wherever they might be, but intended the destruction of such alone as remained within the circuit of the walls of the city; or deeming, perchance, that it was now time for all to flee from it, and that its last hour was come [4].

The rites of death were completely disregarded: funerary rituals were no longer carried out as usual and burials were carried out in great haste, often by throwing the bodies into mass graves, covering them with quicklime to prevent animals from digging them up [5].

Nor, for all their number, were their obsequies honoured by either tears or lights or crowds of mourners; rather, it was come to this, that a dead man was then of no more account than a dead goat would be to-day... As consecrated ground there was not in extent sufficient to provide tombs for the vast multitude of corpses which day and night, and almost every hour, were brought in eager haste to the churches for interment, least of all, if ancient custom were to be observed and a separate resting-place assigned to each, they dug, for each graveyard, as soon as it was full, a huge trench, in which they laid the corpses as they arrived by hundreds at a time, piling them up as merchandise is stowed in the hold of a ship, tier upon tier, each covered with a little earth, until the trench would hold no more.

The city became frighteningly silent, as the daily noises of the markets, the shops, and the people crowding the streets fell silent.

The consequence was the complete blockage of trade, commerce, and any other activity, so much so that the citizens became impoverished and, exhausted by hunger, also fell ill for other reasons.

Wherefore, they too, like the citizens, abandoned all rule of life, all habit of industry, all counsel of prudence; nay, one and all, as if expecting each day to be their last, not merely ceased to aid Nature to yield her fruit in due season of their beasts and their lands and their past labours, but left no means unused, which ingenuity could devise, to waste their accumulated store; [045] denying shelter to their oxen, asses, sheep, goats, pigs, fowls, nay, even to their dogs, man's most faithful companions, and driving them out into the fields to roam at large amid the unsheaved, nay, unreaped corn.

THE COMPARISON

A few years later, another Tuscan writer, Marsilio Ficino (1433-1499) (Fig. 3), a philosopher and physician, wrote a text in the vernacular dedicated to his fellow citizens, offering suggestions on how to escape the plague [6].

Ficino was then living outside the city, on the Careggi hill, at Villa Le Fontanelle, which had been given to him by Cosimo the Elder so that he could translate Plato's texts in peace.

Ficino, perhaps wrote his book because he felt guilty for living in a privileged situation, compared to the population exposed to the risk of disease [7].

He had a very different approach from Boccaccio: the text includes a chapter on the natural origins of the plague, described as a general phenomenon that corrupted nature before attacking the health of individuals, providing opinions from various sources, always taking into account astrological changes and the resulting poisoning of the air and water [8].

This is followed by a list of the disease's symptoms and how to recognize the progression of the infection [9].

A series of suggestions for preventing and treating the plague is then provided, often including recipes for medicines that could be obtained from a pharmacist or doctor, or prepared at home.

Ficino offered suggestions tailored to the recipient's wealth, with remedies proportionate to their resources [10].

Plague was considered a sort of poison, an all-encompassing phenomenon that corrupted the surrounding nature before it attacked the health of individuals.

Ficino believed that plague originated in the air under specific natural conditions and was transmitted through contact between individuals.

Those who cared for the sick were most at risk of contracting the disease, and Ficino devoted an entire chapter to describing the precautions that could be taken to avoid contagion during contact with the sick.

If you ask me how this poison enters, I answer: through

Fig. 3. Portrait of Marsilio Ficino (1433-1499) - [Public domain. Wikipedia commons].



all the pores of the body, especially the most open ones, the mouth and nose... Walls, iron, and wood hold it for a year... wool is nourishment for this poison... Therefore, you should not eat or drink from poison vessels or touch anything that they have touched [11].

Avoid conversations, and when you do converse, stay at least two arm's lengths away from your companion, in an open space, and if you are suspicious, at least six arm's lengths away, and make sure the wind doesn't blow from him toward you.

The table and the bed, and narrow places and many winds together, are very dangerous.

Not everyone was susceptible to the disease, even though they were exposed to the risk, maybe alluding to *healthy carriers*:

...don't be surprised if a man sometimes catches this vapor and isn't offended by it, but offends others... It's like red-hot iron.... it ignites and consumes the tow and straw, but isn't consumed

Ficino was strongly influenced by Galenic medicine and gave great importance to lifestyle, nutrition, evacuations and recommended tranquility and moderation, which would have guaranteed the maintenance of a good humoral balance.

The most common advice to avoid the plague was always to flee, summed up by the exhortation "*Cito, longe, tardi*" – flee quickly, go far away and return late. Although Ficino's primary motivation for writing the *Consiglio*... was compassion for his fellow Tuscans, the work was written for a more professional audience, including barber-surgeons, bathhouse staff, midwives, and pharmacists.

Preventive measures – bloodletting, purges, and enemas – could not be applied by the untrained: many of the surgical remedies – punctures, cauterizations, leeches, and cuppings – could only be performed by experts.

Treatment included the traditional theriac and plague pills: for the poor who had little money for expensive medicines to prevent the plague, he recommended "*pieces of toasted bread, soaked in vinegar with a little rue, eaten with raw onion and accompanied by good wine.*"

Likewise, for those caring for the sick, he recommended the use of emeralds, to be held in the mouth, worn, or drink powdered; the poor, who could not afford emeralds, would have to make do with radishes "...to dry the blood and counteract the poison."

Those who cared for the sick were the most likely to be infected by the disease and Ficino dedicates a whole chapter to describe precautions that may be taken so as to avoid infection while in contact with the sick.

Beware of stuffy air... Keep your whole body well washed. Fumigate your home often with good odors, and likewise your clothing... Wash your mouth, face, and hands often with vinegar. ...Use moderate exercise in a spacious place... I advise anyone who is very careful about touching things brought from diseased places...

The room of the sick... let the air be exhaled and removed, but let sheets soaked in vinegar be stretched around the bed and sprinkle vinegar down the walls and throughout the room.

Ficino understood that there is a risk of multiple infections and called for caution:

Let no one say that he who is once freed from the disease is free forever... Even this year, in the month of September, I freed a woman from the disease. Then, being as healthy as any other person, she conversed with some infected people and after 18 days she became ill again and died, not having the medicine in time.

Conclusion

The recent SARS-CoV-2 and the Black Death are completely different diseases, one caused by a virus and the other by bacteria [12]: SARS-CoV-2 (causing COVID-19) is a viral infection, while Plague is a bacterial disease [13]. However, the Black Death shared some similar features with COVID-19 pandemic: from the initial difficulties and misunderstandings to the adoption of public safety and prevention measures, the lasting impact on society after the event had passed.

The historical and societal responses to the COVID-19 pandemic and the Black Death (a major plague pandemic) have shown some similarities, particularly in the initial lack of understanding, the mischievous and indiscernible nature of disease, the helplessness of medical treatments, the recommendation to avoid physical contacts with infected people, and prevention initiatives of public health measures like quarantine...

Reading the first pages of the Decameron offers food for thought regarding the spread of the Black Death in Florence of 1348. Indeed, Boccaccio's narrative is that of a man of letters, a witness to the devastation of the city and its values.

The similarities between Boccaccio's description and what we experienced during the COVID-19 era are evident: the Eastern origin of the disease, its novelty, the lack of treatment, the need for isolation, unceremonious burials and economic instability.

By contrast, Marsilio Ficino (1433-1499), an Italian scholar and Catholic priest who was one of the most influential humanist philosophers of the early Italian Renaissance, offered a more detached interpretation of the disease; he adopted a medical approach and a perspective that focused on public health aspects, such as preventive measures, safety precautions, the importance of isolation and quarantine, territorial control, etc.

Furthermore, Marsilio Ficino clearly advocated the proactive aspect: distancing, frequent hand-washing [14], the risk of reinfection, and the modes of contagion – all of which denote the modernity, attentiveness and foresight of public health at that time.

Later, during the Hong Kong epidemic in 1894, Alexander Yersin (1863-1943) identified the bacterial agent that causes the plague, and which bears his name, *Yersinia pestis*. However, we can say that 650 years earlier Boccaccio had described significant essential features of the disease, paving the way to understanding

how major epidemics affect humanity and what impact they may have in subsequent periods, not least from an economic and social standpoint.

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Conflicts of Interest Statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Authors' contributions

DL: conceived the study; DL & FB: designed the study; DL, FB and MM drafted the manuscript, performed a search of the literature, revised the manuscript; DL and FB: methodology; FB: investigation and data curation; DL, FB and MM: review; MM: editing. All authors have read and approved the latest version of the paper for publication.

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