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How Pandemics Wreak Havoc—and Open Minds

The plague marked the end of the Middle Ages and the start of a great cultural renewal. Could the coronavirus, for all its destruction, offer a similar opportunity for radical change?

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The social tumult caused by the Black Death helped lead to the Renaissance. Illustration by Bianca Bagnarelli

> Great crises tend to bring profound social change, for good or ill. The consequences of wars and economic depressions have been amply studied; the consequences of pandemics, less so. This spring, in order to understand our possible future, I decided to look at the past through the eyes of Gianna Pomata, a retired professor at the Institute of the History of Medicine, at Johns Hopkins University. When we first talked, on Skype, she immediately compared COVID-19 to the bubonic plague that struck Europe in the fourteenth century—"not in the number of dead but in terms of shaking up the way people think." She went on, "The Black Death really marks the end of the Middle Ages and the beginning of something else." That something else was the Renaissance.

Since retiring, Pomata has returned to her home town, the old city of Bologna. "You know Bologna, right?" she asked in that first conversation, on March 27th. Decades ago, I was the best man at a wedding there. I recalled the giant churches, the red-tiled roofs, the marble walkways under arched porticoes; a stately city, low-slung, amber-hued, full of students and indomitable old couples. During the Middle Ages, Bologna was home to more than a hundred towers, the skyscrapers of their era, which served as showplaces of wealth and ambition for powerful oligarchs. Two of the remaining ones have become symbols of Bologna: one slightly out of plumb, the other as cockeyed as its cousin in Pisa. "You remember the Piazza Maggiore, the very heart of the city near the two towers?" Pomata said. "That's where I live."

Pomata's country had been in a nationwide lockdown since March 10th. "In Italy, the streets are always crowded, night and day," she said. "Our cities are medieval, made for a different way of life—not for cars but for people. Right now, to see them empty of people is so sad." When we spoke, the number of confirmed cases in Italy had reached eighty-six thousand. Only the United States had a higher number, having just eclipsed China.

Pomata, who is sixty-nine, has brown hair, with a long, open face. That day, tortoiseshell glasses rested at half-mast on her nose, beneath upward-pointing, quizzical eyebrows. Like me, she was beginning to show the pallor of confinement. Having spent much of her adult life in the United States, her English had little accent, but she retained an Italian lilt, lingering on the broad vowels.

I asked Pomata to imagine walking out of her apartment six hundred and seventy-two years ago, during the Black Death. How would Bologna appear different? “If you try to imagine a plague-stricken city in the Middle Ages, the first thing you’d see would be dead people on the streets,” she said. “Just as we have to send the Army to take coffins to crematories in other cities, as in Bergamo right now, in the Middle Ages they couldn’t cope with so many dead. The bodies just piled up on the streets.” She paused and said, “I don’t have an idyllic vision of the Middle Ages.”

Italy at the beginning of the fourteenth century was a conglomeration of prosperous city-states that had broken free of the feudal system. Some of them, such as Venice, formed merchant republics, which became seedbeds for capitalism. Venice and other coastal cities, including Genoa, Pisa, and Amalfi, set up trading networks and established outposts throughout the Mediterranean and as far away as the Black Sea. Other Italian cities, such as Bologna, became free communes, which meant that peasants fleeing feudal estates were granted freedom once they entered the city walls. Serfs became artisans. A middle class began to form. The early fourteenth century was robust and ambitious. Then, suddenly, people began to die.

Bologna was a stronghold of medical teaching. The city’s famous university, established in 1088, is the oldest in the world. “What they had we call scholastic medicine,” Pomata told me. “When we say ‘scholastic,’ we mean something that is very abstract, not concrete, not empirical.” European scholars at the time studied a number of classical physicians—including Hippocrates, the Greek philosopher of the fifth

century B.C. who is considered the father of medicine, and Galen, the second-century Roman who was the most influential medical figure in antiquity—but scholastic medicine was confounded with astrological notions. When the King of France sought to understand the cause of the plague, the medical faculty at the University of Paris blamed a triple conjunction of Saturn, Jupiter, and Mars in the fortieth degree of Aquarius, which had occurred on March 20, 1345.

"Whether it descended on us mortals through the influence of the heavenly bodies or was sent down by God in His righteous anger to chastise us because of our wickedness, it had begun some years before in the East," Giovanni Boccaccio wrote in the Decameron, which was completed by 1353 and is set during the plague in Florence. "At its onset, in men and women alike, certain swellings would develop in the groin or under the armpits, some of which would grow like an ordinary apple and others like an egg." These pus-filled swellings, called buboes, were inflammations of the lymph nodes. They eventually erupted. Internal organs broke down in a bloody froth, and bodies darkened with gangrene, which is why the plague came to be called the Black Death.

Before arriving in Italy, the rampaging contagion had already killed millions of people as it burned through China, Russia, India, Persia, Syria, and Asia Minor. It was said that there were entire territories where nobody was left alive. The source of the disease was sometimes thought to be "miasma," or air that was considered unhealthy, such as sea breezes. Paradoxically, there was also a folk belief that attendants who cleaned latrines were immune, which led some people to confine themselves for hours a day amid human waste, absorbing the presumed medicinal odors. "The advice of doctors and the power of medicine appeared useless and unavailing," Boccaccio wrote. Some people maintained that "the surest medicine for such an evil disease was to drink heavily, enjoy life's pleasures, and go about singing and having fun, satisfying their appetites by any means available, while laughing at everything." Others, he observed, "formed themselves into companies and lived in isolation from everyone else." The Decameron tells of ten

friends who shelter in place, entertaining one another with stories while the plague assails Florence. These ribald tales pay little heed to medieval notions of sacredness or piety; indeed, the society that the sequestered young people describe is amoral and cheerfully hypocritical. Priests are portrayed as stupid, lustful, greedy connivers. Illicit sex is exalted. The earthy realism of the Decameron, written in Italian vernacular rather than in classical Latin verse, sounded one of the opening notes of the Renaissance.

Pomata told me, “What happens after the Black Death, it’s like a wind—fresh air coming in, the fresh air of common sense.” The intellectual overthrow of the scholastic-medicine establishment in the Middle Ages was caused by doctors who set aside the classical texts and gradually turned to empirical evidence. It was a revival of medical science, which had been dismissed after the fall of ancient Rome, a thousand years earlier. “After the Black Death, nothing was the same,” Pomata said. “What I expect now is something as dramatic is going to happen, not so much in medicine but in economy and culture. Because of danger, there’s this wonderful human response, which is to think in a new way.”

In the fourteenth century, Tartar warriors in Crimea laid siege to the Black Sea port city of Caffa, which was owned by a group of wealthy Genoese traders. Like so many armies in history, the Tartars were also fighting an unseen enemy: they carried with them a horrible disease, which killed some victims in a few days, and left others to die in indolent agony. Before retreating from Caffa, the Tartar general, Khan Jani Beg, ordered the diseased bodies of dead warriors catapulted over the city walls, in one of the first instances of biological warfare. Panicked citizens took to boats, navigating through the Dardanelles into the Aegean Sea and the Mediterranean. A dozen ships made it to Sicily, in October, 1347.

Sicilians were appalled to find on their shores boats with dead men still at their oars. Other sailors, dead or barely alive, were in their bunks, covered with foul-smelling sores. The horrified Sicilians drove the ships

back to sea, but it was too late. Rats and fleas, the carriers of *Yersinia pestis*, the bacterium that causes the plague, quickly infested the port of Messina. By January, Italy was engulfed. Ships arriving in the Venetian vassal state of Ragusa—present-day Dubrovnik—were required to sit at anchor for *quaranta giorni*, or forty days, which is where the term "quarantine" comes from.

Medieval mortality figures are a matter of speculation, but Bologna is believed to have lost half its population in 1348. Cities all over Europe were emptied. That first outbreak, between 1347 and 1351, is estimated to have killed at least seventy-five million people worldwide, and maybe as many as two hundred million.

"Child abandoned the father, husband the wife, wife the husband, one brother the other, one sister the other," a contemporary writer, Marchione di Coppo Stefani, observed. Deep trenches were dug in churchyards. "Those who were responsible for the dead carried them on their backs in the night in which they died and threw them into the ditch," Stefani continued. The next morning, dirt was thrown on the bodies as new corpses were piled on, "layer by layer, just like one puts layers of cheese in a lasagna."

Pomata told me, "Chroniclers of the plague describe the crumbling of the family. At the same time, human beings are creative. They react to this perceived moral decay by creating new institutions. For instance, they create boards of health, which are in charge of quarantine." For the first time, hospitals split patients up into specific wards, so that broken bones and wounds, say, were treated separately from diseases. There was also a rise in trade associations, to take care of medical costs and funeral expenses. "So you can see both trends," Pomata said. "On the one hand, the plague works as a kind of acid. On the other hand, people try to re-create ties—and, perhaps, *better* ties."

When I called Pomata again, on April 7th, using Zoom, she had set up an avatar: a bouquet of plumbago. I asked her why she had chosen it. "There was a big bush of plumbago next to the door of my

grandmother's little country house when I was a child," she said. The house was in Sardinia, where Pomata grew up. "I loved my grandmother and I loved that house. So I just love that plant. It's a color I remember from when I was very, very little." Plumbago blossoms are a delicate blue, like a summer afternoon in Texas, where I live, when the color has almost been bleached out of the sky. Plumbago grows well in the heat.

Pomata's sister, Daniela, is an emergency-room doctor in Bologna, at Sant'Orsola-Malpighi Polyclinic, the largest hospital in Italy. The two sisters live in the same building. "We used to be together constantly, and now I can't see her," Pomata said. From the start of the outbreak, her sister had emphasized that the coronavirus was not an ordinary flu. "She says, 'I've never seen such pneumonias, they're devastating,' " Pomata told me. When we spoke before, there was a fear that Sant'Orsola would run out of beds in its intensive-care unit. Now the crisis had begun to ease.

I asked Pomata if Italians who recovered would be allowed to return to work. "There *is* no work for them," she said. Even before the global economic implosion caused by the coronavirus, unemployment for young Italians was thirty per cent. "What you need is exactly what the Fed is doing in the United States—you inject money into the system."

Pomata's daughter, Catherine, lives in New York, where she works in the film industry. "I don't like the situation there at all," Pomata said. "She is with her husband, she's not by herself, so that's good. They live in a tiny apartment near Columbia University, on the Upper West Side. Until recently, she was walking to Central Park, but now she doesn't, because she feels that people don't always pay attention to distance." Catherine had sent her mother a video of the Cathedral of St. John the Divine, just blocks from Catherine's apartment, which was planning to house a temporary hospital. This underscored the scale of the contagion. "Catherine loves New York," Pomata said. "Living in New York was a dream. But now I think she's very scared."

Another feature of the COVID-19 pandemic reminded Pomata of the Black Death. “We cannot go and visit the dying, we cannot celebrate funerals,” she said. “I think, What if something happens to my daughter, and I couldn’t even see her body? It just feels intolerable.”

“I am reflecting on the idea of disease waves,” I said, when Pomata and I spoke again, in May. Scientists were talking about a second wave of COVID-19 in the fall, or perhaps many waves. The 1918 Spanish flu began in the early spring, disappeared in the summer, then returned in the autumn. October, 1918, was the deadliest month in American history. A third wave came in 1919; after that, the disease retreated, having killed at least fifty million people worldwide, including nearly seven hundred thousand Americans. Public-health officials dreaded the day the virus would return. In 1976, it did. This time, it killed only one American, a young Army recruit named David Lewis. Another variant of the same strain returned as a pandemic in 2009, but proved to be less severe than the usual seasonal flu.

The bubonic plague came in three great pandemics. The first, known as the Plague of Justinian, lasted from the sixth century until the eighth, with few letups, ravaging the Byzantine Empire. The second pandemic, the Black Death, arrived in Italy in December, 1347, and spread quickly across Europe. Pilgrims carried it to Mecca the following year. The plague soon infested Scandinavia. A third of the population of Egypt died. Subsidiary outbreaks continued to appear in Europe for three hundred years. The Great Plague of London, which Daniel Defoe chronicled, hit in 1665. After that, the plague mysteriously faded away.

“There was a much more circumscribed episode in Marseille in the early eighteenth century,” Pomata told me. “And that’s it for Europe, but not for Asia.” The last plague pandemic began in the mid-nineteenth century, in China, and spread to India, where it killed six million people. At the beginning of the twentieth century, the disease journeyed to America, where a Chinese resident of San Francisco was the first to die

of it. Henry Gage, the governor of California at the time, tried to play down the outbreak, speculating that white people were immune to the disease; scores died. The plague has never been entirely eradicated, but, with each wave, it may have killed so efficiently that it starved itself of human hosts. Having persisted in flea and rat populations, the bacterium continues to infect humans from time to time. As many as two thousand cases are reported to the World Health Organization every year, often including a handful in the American Southwest.

The Black Death caused economic and demographic collapse throughout Europe, but some devastated regions rebounded surprisingly quickly. London, the engine of English prosperity even in the Middle Ages, lost an estimated forty thousand citizens, out of a population of perhaps seventy thousand, but it soon enjoyed greater affluence than ever. I asked Pomata about Italy's economic experience after the Black Death. "It was a great time to be an artisan," she said. "Suddenly, labor was scarce, and, because of that, market wages *had* to go up. The bourgeoisie, the artisans, and the workers started to have a stronger voice, simply because labor was scarce. When you don't have people, you have to pay them better." The relative standing of capital and labor reversed: landed gentry were battered by plunging food prices and rising wages, while former serfs, who had been too impoverished to leave anything but a portion of land to their eldest sons, increasingly found themselves able to spread their wealth among all their children, including their daughters. Women, many of them widows, entered depopulated professions, such as weaving and brewing.

At one point in our conversations, Pomata confessed, "I'm so upset and emotional, it's difficult to think clearly." I asked what was troubling her. "First of all, it is rediscovering the extreme fragility of life," she said. "So much of our way of life is insane. Right now, for instance, in Italy we don't have face masks." Such masks used to be manufactured there, but today this work has been outsourced to China. If the pandemic had struck in the early nineteen-nineties, she believes, Italy would have responded more effectively from the start, and not just because masks

would have been on hand. “Our national health-care system was better funded, we had more hospitals, the hospitals were better equipped, they had more intensive-care units, and all that has been cut, cut, *cut* for austerity policies dictated by Brussels”—that is, the European Union. Nevertheless, current talk about how the crisis could spell the end of the E.U. frightens her. “I am a Europeanist,” she said. “I have always believed in Europe as a culture and a political idea. But right now I see this. And I’m very angry.”

Pomata mentioned an essay that Mario Draghi, the former president of the European Central Bank, had published in the *Financial Times*, in March, suggesting that European leaders were questioning some fundamental ideas about economic growth. Draghi has been at “the pinnacle of the European bureaucracy that has been enforcing the economic policy called austerity,” Pomata explained. The southern tier of European countries—mainly Spain, Italy, Portugal, and Greece—have been struggling with heavy debt loads; northern countries, including Germany and the Netherlands, which hold the debt, insist that it must be repaid on a rigid schedule. She described the E.U.’s ethic as “Spending more than we have is heresy, and we should never do it.” She went on, “The problem, as John Maynard Keynes said, is that when you are in a crisis you don’t maintain that stance, because it makes the crisis worse. Which is what happened in the crisis of 1929. He said what you do is build an infrastructure—you build a pyramid if you have to, build *anything*. You create jobs and the economy doesn’t stop.”

She continued, “For a long time, European bureaucrats and the European ruling class have been firmly anti-Keynesian. And Draghi was part of that class—he was at the top of it! And suddenly he writes in the *Financial Times* saying the opposite of what he has been preaching all these years.”

Draghi described the coronavirus as “a human tragedy of potentially biblical proportions.” He added, “The challenge we face is how to act with sufficient strength and speed to prevent the recession from

morphing into a prolonged depression, made deeper by a plethora of defaults leaving irreversible damage. It is already clear that the answer must involve a significant increase in public debt."

Pomata said, "I'm glad, at least, that Draghi spoke up. But that ruling class, the European élite, has to really rethink." Since then, the leaders of Germany and France have proposed creating grants, financed by collective borrowing, that would help prevent the poorer regions of Europe from falling into a lengthy recession. At the end of May, the E.U. presented a two-trillion-dollar coronavirus-response plan, with the aim of reviving flattened economies, especially in the south. If the member countries approve the plan, it could mark the moment when the E.U. moves toward a federal framework, like that of the United States. Germany's finance minister, Olaf Scholz, has compared the measure to the actions taken in 1790 by Alexander Hamilton, the architect of the American financial system, to have the U.S. government assume the Revolutionary War debts of the states.

Pomata described the pandemic as "an accelerator of mental renewal." She explained, "We listen more, perhaps. We're more ready to talk to one another. Once again, I give Draghi's example, because I'm so struck by it. An anthropologist should write about this kind of thing. Draghi's world was very stable. He had some beliefs about how the economy should be handled. And suddenly he's in a whirlwind, and he has to think anew."

In 1345, shortly before the plague devastated Verona, the Italian poet and scholar Petrarch was rummaging through the library of the city's cathedral. Among the crumbling manuscripts there, he found letters written by Marcus Tullius Cicero, the Roman statesman and orator who is sometimes credited with making Latin a literary language. Until Petrarch's discovery, Cicero was almost totally forgotten, as were most of the great figures of the classical era. Reading Cicero's letters—or other abandoned works, like Livy's history of Rome—revealed to Petrarch how degraded civilization had become. He christened the

period after the fall of Rome the Dark Ages. The beauty of Cicero's language, the rigor of his thought, inflamed Petrarch with an ambition to restore the glory of the past. And that meant opening the minds of his contemporaries to the possibility of change.

"For Petrarch, it was about disliking his time and his age and the condition of Italy," Pomata said. He expressed his frustration with his era by writing letters to the ancients. "It could be like someone today disliking the present state of America and wanting to talk to Thomas Jefferson or Martin Luther King."

The Middle Ages didn't end definitively until the fall of Constantinople, in 1453, when scholars of the Byzantine Empire migrated to Europe, especially to Italy, bringing their libraries with them. But new thinking was already under way, spurred partly by Petrarch's embrace of old thinking, which is why he is often cited as the instigating figure of the Renaissance. Artists reclaimed ancient techniques for drawing and painting with perspective. Musicians recovered melody. Humanism unsettled the stagnant rule of religion over people's minds. Michelangelo, da Vinci, Palladio, Brunelleschi, Boccaccio, Petrarch, Machiavelli, and Dante Alighieri became foundation stones of European thought. Italian explorers, including Christopher Columbus, Giovanni da Verrazzano, and Amerigo Vespucci, changed the map of the world. Galileo established the scientific method. The Italian Renaissance was perhaps the greatest efflorescence of science and art in Western civilization.

Before the coronavirus pandemic hit, Italy's economy was already one of the weakest in Europe—its gross domestic product was at a dead stop. The U.S., meanwhile, had reached almost full employment, before plummeting to a level of joblessness not seen since the Great Depression. Congress and the Federal Reserve have acted forcefully, and a recent drop in unemployment suggests that some American jobs will come back quickly. Yet Jerome Powell, the Fed chairman, has predicted "a long road" to recovery. Both in the U.S. and in other countries, an era

of significant unemployment is likely, creating a labor surplus—the reverse of the situation after the Black Death.

We seem to be at another point when society will make radical adjustments, for good or ill. History offers mixed lessons. The Plague of Athens, in 430 B.C., led to a protracted period of lawlessness and immorality. Citizens lost faith in Athenian democracy, which never regained its standing. The millions of deaths caused by the 1918 Spanish flu and the First World War brought on women's suffrage but also inaugurated the Roaring Twenties, which featured disparities of wealth unequalled until the present day. After the shock of the Second World War, America transformed itself into the strongest economic power in history, largely through an expansive middle class. But after 9/11 the United States forged a dark path. Instead of taking advantage of surging patriotism and heightened international good will, America invaded Iraq and tortured suspects at Guantánamo; at home, prosperous Americans essentially barricaded themselves off from their fellow-citizens, allowing racial and economic inequalities to fester. The country we are now was formed in no small part by the fear and the anger that still linger from that tragic day.

Pomata and I began to speculate again on potential positive outcomes of the current pandemic. "People are noticing in Venice that the water is suddenly transparent," she said. "It's clean. And even I, here in Bologna, I open the window, and usually it smells foul because of too many *motorini*, and now it smells nice. It's like being in the countryside."

In Austin, the city where I live, I also have treasured the absence of the usual traffic roar, the neighborhood streets given over to pedestrians and exhilarated children on bicycles. I have been inspired by photographs of Los Angeles looking eerily pristine, and by newfound vistas of the Himalayas from Punjab, hidden for decades by smog. Could these images have a galvanizing effect, like the 1972 photograph of Earth taken from space by the crew of Apollo 17, which helped bring the

environmental movement to life? The atmosphere feels scrubbed clean; the stars are sharper and more visible. The relationship between humanity and the natural world is more balanced and harmonious. Such ecological restorations, of course, have come at the cost of collapsed economies and punctured dreams. Traffic will necessarily resume, oil will be pumped, airplanes will take off. But I wonder if the glorious experience of living with less pollution, however momentary, will linger in our consciousness as an achievable destiny—and as a reminder that major transformations are possible.

Toward the end of spring, Italy began to open again. “Starting tomorrow, they’re going to relax the rules a bit,” Pomata told me, with excitement. “You’re supposed to be able to go and visit ‘relatives,’ but of course nobody knows what is meant by relatives. A fiancée? A lover? A mistress? We’re making lots of jokes about the meaning of a relative in Italy at this moment!”

Pomata’s optimism was further buoyed by the fact that her country’s shutdown, cohesive and well managed, had worked: new infections were petering out there. Italy had six thousand new cases a day when spring started and only two hundred a day when it ended. In the meantime, the epicenter of the contagion had moved to my own part of the world. By early July, Texas was reporting more than nine thousand infections a day, and was one of several Southern states that had boosted the spread of the disease to record levels. Hospitals in Houston were nearing full capacity, and Austin was preparing its convention center as a spillover medical outpost. Governor Greg Abbott, who had begun aggressively reopening the state in April and had even forbidden mayors to enforce rules concerning the use of face masks, now reluctantly tapped the brakes, warning of a “massive outbreak.” Texas had ended up basically in the same condition that Italy was in when Pomata and I first spoke.

Pomata was shocked by the direction that the pandemic was taking in the United States. She understood the reasons for the mass protests and political rallies, but, as a medical historian, she was uncomfortably

reminded of the religious processions that had spread the plague in medieval Europe. And, as someone who had obediently remained indoors for months, she was affronted by the refusal of so many Americans to wear masks at the grocery store and maintain social distancing. In an e-mail, she condemned those who blithely ignored scientific advice, writing, “What I see right now in the United States is that the pandemic has not led to new creative thinking but, on the contrary, has strengthened all the worst, most stereotypical, and irrational ways of thinking. I’m very sorry for the state of your country, which seems to be in the grip of a horrible attack of unreason.” She continued, “I’m sorry because I love it, and have received so much from it.”

I understood her gloomy assessment, but also felt that America could be on the verge of much needed change. Like wars and depressions, a pandemic offers an X-ray of society, allowing us to see all the broken places. It was possible that Americans would do nothing about the fissures exposed by the pandemic: the racial inequities, the poisonous partisanship, the governmental incompetence, the disrespect for science, the loss of standing among nations, the fraying of community bonds. Then again, when people confront their failures, they have the opportunity to mend them.

We agreed on one thing: nothing about our societies could truly be fixed as long as everyone remained stuck inside. At one point, when Pomata and I were fantasizing about the end of our captivity, I asked her what she wanted to do when she finally went out again. “I don’t actually feel starved for human contact,” she said, with a bit of surprise. “I’ve never written so many letters as in this period of my life!” She then noted, “Of course, I see my sister from the window, and we cannot hug each other.” Above all, Pomata said, she longed to visit her mother, who lives in Sardinia, and to swim there again. This summer, she plans to make the trip. “Older people need exercise,” she said. “I don’t spend time at the beach gossiping with friends. I don’t even take the sun. I just go immediately into the sea.” ♦