

**The Fourth Horseman**  
10,000 Years of Epidemics

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## The Fourth Horseman's Ride Through History

Fifty-seven-year-old Wei Guixian, selling shrimp at the market, was feeling under the weather. She had a fever, headache and dry cough, and in early December 2019 she left her stall at the wet market in the large and thriving central Chinese city of Wuhan, situated on the banks of the Yantze River, and went to see the doctor, hoping to alleviate the symptoms of her cold. She then returned to work.

It was a decision that had fateful consequences. Eight days later, as she lay semi-conscious in one of the city's biggest hospitals, suffering from pneumonia, respiratory problems and impaired kidney function, people with similar symptoms were now being rushed onto wards left and right. Several of them would eventually leave the hospital in coffins.

Some weeks later, towards the end of February 2020, Jakob Tage Ramlyng and his family touched down in Roskilde, a large Danish city not far from Copenhagen, after a skiing holiday at a resort north-east of Milan. After a day of meetings at his workplace, the television broadcaster TV2 News, he came down with acute abdominal pain. Later that night at Roskilde Hospital, the staff were able to give him an explanation. He was the first Dane to test positive for the illness reported in China, and he was sent home for two weeks' quarantine.

The infection was out of control. Tourists from all over the world were being called home and cruise ships were withdrawn from service, while thousands of people almost instinctively set about hoarding. In early March, the World Health Organisation – the WHO – declared a global pandemic.

Originally an exotic disease observed at a Chinese wet market, within three months the virus had spread via our modern-day, hyper-globalised networks to virtually every corner of the globe, bringing the world to a screeching halt. The impact was felt on a vast scale. Country after country locked down, blocking air traffic and putting up concrete blocks along land borders. Testing tents were erected, reception centres organised, and emergency-care nurses trained at lightning speed. The coronavirus, COVID-19, which was previously unheard-of, was suddenly the focus of everyone's attention, and people barricaded themselves indoors while their newsfeeds turned into an endless loop of information about infection curves and death counts, discussions about vaccines and herd immunity, and battles over personal protective equipment, PPE, and respirators. The situation that epidemiologists and others had been warning against for decades was now a reality.

For the vast majority of the world's population, this was the first time they had seen the effects of an epidemic unfold under such scrutiny from the media – with all the fear and destructiveness that followed in its wake. From a historical perspective, however, none of this is a surprise. If we step back and take the long view, we see that global diseases are a recurring phenomenon: the strange thing, in fact, is that this one was such a long time coming. The last time an epidemic ran rampant across several continents, leaving this many people dead in such a short span of time, was a hundred years ago.

Since history is a product of human experience, we can draw on past events to help us learn how epidemics arise and develop, and to understand how people react to them. There are certainly plenty of historical examples: our fear of epidemics is an ancient one. The Book of Revelation tells the story of the Four Horsemen of the Apocalypse, four terrifying riders come to lay waste to the world. The first three represent the destructive power of war, conquest, and famine, while the fourth, riding a pale horse, spreads disease. If all four riders are abroad at the same time, the world will perish – although when you read the history books, you soon discover that the fourth horseman is capable of inflicting more than enough damage all by himself.

“During these times there was a pestilence, by which the whole human race came near to being annihilated,” wrote a seriously shaken historian by the name of Procopius in the years after the first well-documented outbreak of the bubonic plague in 542. He had seen the people around him buckle under the mysterious sickness ravaging Constantinople – present-day Istanbul – and be buried by the score. It would then be nearly a thousand years before the epidemic known to many by the eerie nickname “the Black Death” killed up to half the European population.

Human beings often act as though we can control what happens in the world, and at times there are peaceful periods when it’s easy to feel as though we’re free – masters of our own fates. But history shows that this is an illusion, and that at other times, it is microbes that shape and alter our lives. On numerous occasions, epidemics have changed the course of world history. They have had a decisive impact on the preservation or collapse of empires, providing new opportunities for survivors of the indiscriminate devastation wrought by the disease – regardless of social status. In fact, disease has been by far the biggest killer and agent of social upheaval in world history, all the way up until the Second World War – and even then it should be noted that tuberculosis and cholera together claimed far more lives than the war itself. Yet we usually prefer to use wars, with their clear beginnings and endpoints, to demarcate historical epochs.

We only have ourselves to blame for the ravages and victories of disease. The biggest and most widespread outbreaks over the centuries have been due to our close relationship with the animals we breed, slaughter and eat. Hunter-gatherers, who were rarely settled in one place, never reached a population density high enough to sustain such diseases, but more than 10,000 years ago, humans in the Middle East began to cultivate the land and keep livestock. They settled in villages and developed complex societies in which waste accumulated and people and animals lived cheek-by-jowl. The animals’ bodily secretions could easily contaminate the food supply, creating ideal conditions for all sorts of diseases to thrive. This new way of life also allowed for higher levels of production, which swelled the size and density of the population, all while villages were increasingly interconnected through trade, enabling diseases to spread across large areas.

Pigs and cattle were an especially common source of microbes, which developed into major infectious diseases. From the very beginning, this was an evolutionary process in which the bugs slowly adapted to changing conditions and adopted various strategies to promote their spread, such as sneezing – a classic sign of influenza – or coughing, which is typical of tuberculosis and the coronavirus. Coughs and sneezes both disperse millions of tiny infectious droplets of saliva into the air, which are easily and effectively transmitted from one person to the next. The microbes, after all, are interested in survival: they cause changes in our bodies, turning us into factories of infection.

In short, the interaction between humans and animals in densely populated villages – and soon in larger urban settlements – created some of the most far-reaching and terrifying diseases in world history. Measles and tuberculosis come from cattle, and usually smallpox does too. The plague is a bacterium that survives in the stomachs of rat fleas and is transmitted via bites, while influenza comes from pigs and birds. Malaria is spread by mosquitos, AIDS originally made the leap from monkeys to people, and fruit bats are common carriers of Ebola.

So it has come as no surprise to virologists, archaeologists and historians that the novel coronavirus arose in the very densely populated province of Hubei in central China, and that the epicentre was a market where live animals were crowded together in a small space with low levels of hygiene. Animals from across the world were sold, then slaughtered on the spot before being taken to dinner tables and eaten by shoppers with adventurous culinary tastes. It was a disaster waiting to happen, and it will happen again. It’s impossible to say for sure which animal the next virus will originate from. Snakes and bats have been mooted as potential candidates.

In any case, the coronavirus is merely the latest chapter in a story that began when human beings turned farmer and started keeping animals in captivity. By enabling more control over the food supply, our ancestors set us on a course towards ever-increasing population growth – growth that has largely continued, only meeting serious resistance every few years, when severe outbreaks of disease, the fourth horseman, lay waste to cities and continents. The only difference between then and now is that today we have more information, higher levels of education and healthcare, and, well, a sense of the public good.

Around a hundred years ago, the world was beset by a particularly nasty kind of influenza: the Spanish Flu. When it struck at the end of the First World War, an age of oppressive censorship in the press, jam-packed trenches and poor nutrition, the epidemic had free rein, causing devastation on a scale that shocked the whole world. Operating in a brief space of time, its victims were mainly younger people, primarily those between twenty and forty years of age. This is probably because children's strong immune response took the edge off it, while the elderly had already lived through similar flu epidemics, giving them a degree of resistance.

The result was the most extensive single outbreak in the form of an epidemic to date. Approximately thirty to fifty million people globally lost their lives between 1918 and 1920. Admittedly, this is before we developed the healthcare system we know today, but in many ways humanity is as unprepared and powerless now as it was then. Many of the familiar strategies – emergency hospitals, quarantine measures, PPE, hygiene rules – were already commonplace. This makes it more useful to compare current epidemics with those of the past: since so many factors remain the same, we may glean things from our ancestors' experience of the Spanish Flu that could help us deal with our own situation. That it pays to limit and slow the pace of infection, for instance, so that not as many people are infected at one time, giving the healthcare system more chance to keep up and look after the sick. This is still the strategy utilised by the authorities in Denmark. We can also see ourselves in how the population reacted to lockdowns, isolation and the devastation of disease, and what kind of society emerged on the other side.

This book offers a historical overview, explaining why the planet has been repeatedly afflicted by epidemics – and will continue to be so. It delves into the explanatory models of the past in order to understand the population's response, as well as our current models, exploring the diseases' origins, development and progress. We offer examples drawn from all areas of world history – at least, from the last ten thousand years. The greatest and most serious outbreaks changed the course of humanity. It therefore seems worth taking a closer look at the nature of epidemics, following in the wake of the fourth horseman's brutal rampage through history.