



## Trade Networks and the Black Death

By Bennett Sherry

Disease has always plagued human communities. One of the biggest epidemics in world history was started by one of the smallest animals and spread by trade networks in the world's largest empire.

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## Spread the Word, but Cover Your Mouth

One of the worst computer viruses ever was the Conficker worm. In 2008, it infected up to 30 million computers. The worm caused billions of dollars in damages and disrupted governments and businesses worldwide. We like to think that more connection is good. The more people talk to each other, the better the world will be. Today though, viruses like Conficker can plague millions of people in minutes. That's because we have a global Internet that connects billions of us through our many devices.

The Internet of the fourteenth century was the Silk Road, though it was less of a road than it was a network. It linked China to Europe. We should think of the Silk Road as a bunch of merchants and cities, trading posts and oases, ports and paths. All were connected to each other by trade. And like the networked Internet, ideas, information, goods, and money all traveled along the Silk Network. But these long-distance trade connections also allowed diseases to spread farther and faster than ever before. This is not unlike computer viruses of today, except more deadly. The worst of these was an outbreak of bubonic plague in the fourteenth century. It was known as the Black Death.



*The people of Tournai (a city in present-day Belgium) bury plague victims, 1353. Pierart dou Tielt, public domain.*

The Black Death was not the only plague to spread along trade routes. In the sixth century, bubonic plague spread across the Mediterranean, infecting millions over two centuries. A great outbreak of the plague started in China and India in the nineteenth century. Plague and disease have accompanied humans since we started crowding into cities and interacting with faraway peoples. So how did this particular plague get to be so bad? Interestingly, it began in a period of peace.



## The Pax Mongolica

The Pax Mongolica was a period from the mid-thirteenth to the mid-fourteenth century. By this time the Mongol Empire had split into four areas. Each was ruled by a “khan.”

The Mongol Khans connected much of Eurasia’s people. They enforced a general peace (“Pax” is Latin for peace). This unusually war-free time allowed more trade connections to develop all across Africa, Europe, and Asia, the landmass also known as Afro-Eurasia. Earlier Mongol conquests disrupted trade routes with their violence. But the huge empire created by those conquests eventually connected more people than ever before under one ruling group.



*A map showing the extent of the Mongol Empire. Having so much land controlled by one empire made overland trade much cheaper and safer. Public domain.*

Once the Mongol Khans settled down and tried to rule over their vast empire, they grew increasingly concerned about tax revenue. One of the best sources of taxation came from trade. So, the Mongol Khans wanted to make trade easier and safer. For more than a century, the Mongol Empire ensured that trade networks grew and merchants prospered. The Mongols severely punished anyone who dared threaten the trade. But the flowering of trade connections also carried the seeds of disaster.

## *Yersinia pestis*: The Black Death

The fourteenth-century Black Death, or bubonic plague, disease was caused by the *Yersinia pestis* bacterium. These bacteria sometimes spread to humans through contact with the fluids of an infected person. More commonly, though, it is spread by flea bites. The bacteria move to humans when fleas vomit into our bloodstreams before feeding. The effects of the bubonic plague are just as gross as how it spreads. Soon after infection, the diseased person develops swelling in their lymph nodes, called *buboes*. Typically lymph nodes help to filter out bad substances from our bodies. Next, bleeding inside the body causes swellings of pus and blood to discolor the skin. It was a horrific disease that spread quickly and struck without warning. Most people who got the plague ended up dead.

## Merchants of death: A trade plague

Human interaction with animals and the environment also played a role in spreading the plague. Take, for example, Central Asia, the region west of China and south of Russia. The fleas there that carried the bacteria lived on a species of rodent known as great gerbils. A temperature increase as little as 1 degree Celsius can increase the presence of the bacteria in the gerbils by up to 50 percent. A change in climate in the middle of the fourteenth century likely helped the disease to spread out from Central Asia.

*Yersinia pestis* got its start in Central Asia's grasslands. The disease spread through flea bites. But the fleas escaped Central Asia on the backs of both traders and camels traveling with trade caravans. From these hosts, the fleas spread to rodents traveling with the caravans and to rats that infested trading ships. Once ships carrying plague rats and merchants arrived in other trading ports, the plague spread like wildfire. The plague likely arrived in the Mediterranean onboard Italian merchant ships. The Pax Mongolica made the Italian city-states of Venice and Genoa extremely wealthy and powerful.

During this period Marco Polo of Venice traveled through the Mongol Empire. Plenty of other Italian merchants traveled east. They bought luxuries in Indian ports like Calicut or from merchants on the coast of the Black Sea. The unifying rule of the Mongol Empire made these remarkable interactions between different people possible. But it also meant that, after meeting in markets, people also brought plague-infected rats back to new and distant lands. Had the Mongol Empire not interconnected the world through trade and conquest, it is unlikely that the Black Death would have been so deadly or so widespread.

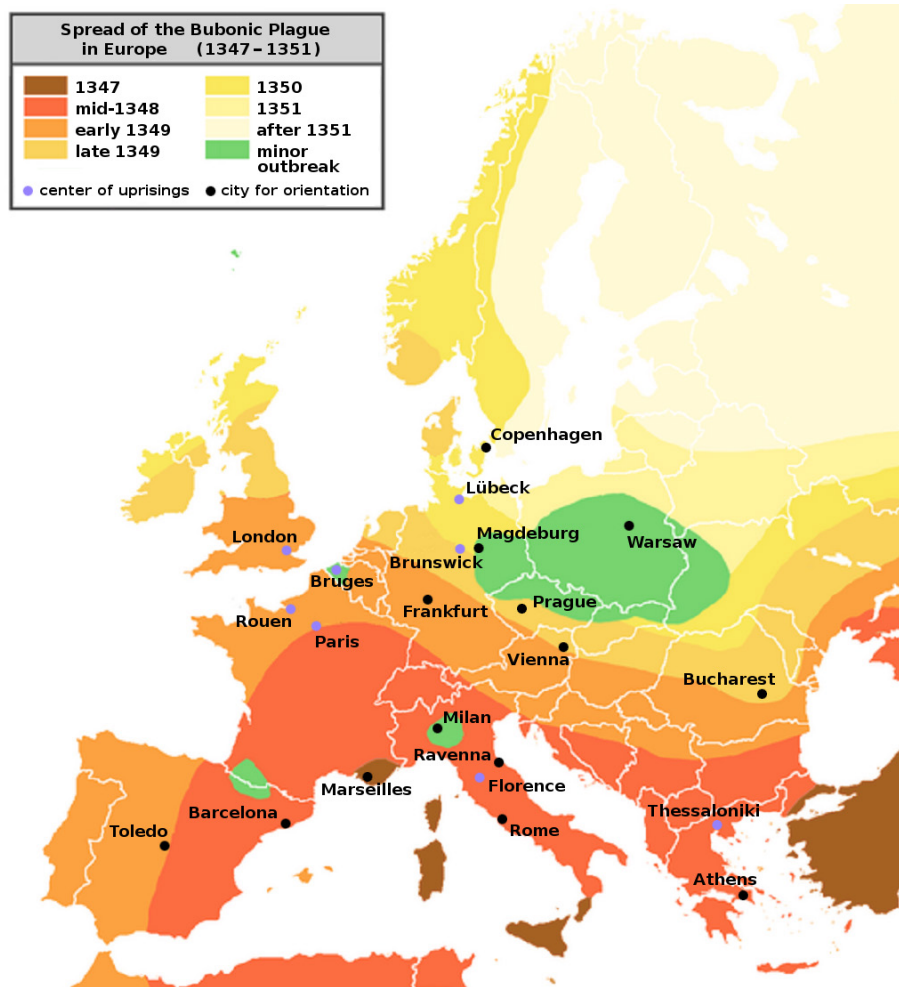


[A flea infected by \*Yersinia pestis\*](#). By the National Institute of Allergies and Infectious Diseases, public domain.



[The \*Rhombomys opimus\*](#), or great gerbil. More deadly than it looks. Yuriy Danilevsky, CC BY-SA 3.0.





*A map showing the spread of the plague throughout Europe. You can see that the plague started in the ports of the Mediterranean and spread inland. Roger Zenner, CC BY-SA 3.0.*

## A specter haunting Eurasia

The Black Death killed as many as 100 million people across Afro-Eurasia during the 1300s. A twenty-first-century epidemic on the scale of the Black Death would kill between 1 billion and 2 billion people.

The devastation caused by the plague led to sharp declines in production and trade all over Afro-Eurasia. Even places unaffected by the plague suffered from disruptions to long-distance trade.

In general, the plague was the worst in Europe, which had crowded, damp, and dirty cities. The plague killed up to 25 million Europeans out of a population of 75 million, from 1347 to 1351. In some Italian cities and rural France, however, death rates approached 60 percent. Europeans tried to make sense of the death and destruction brought by the plague. Many thought that they were witnessing the end of the world. Others began to question the authority of the Catholic Church and the social class system around them. Peasant revolts increased. In many places, angry mobs attacked Jewish communities. They wanted someone to blame for their misfortune.

## Death and labor: Plague reshapes European economies

Still, the horrors of Black Death were followed by some positive changes. It turns out that the sudden death of millions of people restructured social relationships. The transformations caused by the Black Death might have brought an end to feudalism, the main social system of Europe, and help to start the Renaissance. Fewer people meant fewer peasants to work the fields of feudal lords. This gave more power to the workers who didn't die. Soon, peasant workers who were mistreated before began demanding higher wages. Pay in England, for example, rose as much as 40 percent between 1340 and 1360. The result was a higher standard of living and longer life expectancies for Europeans who survived the plague. The rise in wages created a middle class in Europe. And with fewer workers in the fields, people were forced to get creative.

Rather than rely on masses of peasant labor, landowners started to raise more livestock. This required less labor than growing wheat. It also inspired technological growth. New plows and labor-saving devices forever changed European agriculture and encouraged other innovations. The rise of a middle class, especially in Northwest Europe, helped to revive the economy and reestablish trade networks. With higher wages, more workers could afford goods that had previously been considered luxuries. Slowly, European businesses recovered, but the cultural and social changes were there to stay.



*The Fall of the Damned*, by Dieric Bouts, 1450. Much of European art turned toward images of death after the plague. Scenes like this and representations of death became much more common. Public domain.

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## Image credits

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**A map showing the spread of the plague in Europe.** You can see that the plague started in the ports of the Mediterranean and spread inland. Roger Zenner, CC BY-SA 3.0. [https://commons.wikimedia.org/wiki/File:Bubonic\\_plague\\_map.PNG#/media/File:Bubonic\\_plague\\_map.PNG](https://commons.wikimedia.org/wiki/File:Bubonic_plague_map.PNG#/media/File:Bubonic_plague_map.PNG)

**The Fall of the Damned,** by Dieric Bouts, 1450. Much of European art turned toward images of death after the plague. Scenes like this and representations of death became much more common. Public domain. [https://commons.wikimedia.org/wiki/File:The\\_Fall\\_of\\_the\\_Damned.jpeg#/media/File:The\\_Fall\\_of\\_the\\_Damned.jpeg](https://commons.wikimedia.org/wiki/File:The_Fall_of_the_Damned.jpeg#/media/File:The_Fall_of_the_Damned.jpeg)



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