

The Black Death, an Unforeseen Exchange:
Europe's Encounter with Pandemic Sparked an Age of Exploration

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“Europe’s Renaissance, or ‘rebirth,’ was forged in the crucible of its terrible yet transcendent ordeal with the Black Death ”
-John Aberth, historian¹

The Black Death pandemic is historically known for decimating the European population. However, this pandemic brought positive consequences to European society. European kingdoms inadvertently encountered the plague while exploring and expanding new ways to exchange goods with Asia in 1347 C.E., ultimately causing one of the most disastrous pandemics in Europe that lasted until 1351. The plague devastated Europe by killing approximately a third of the population. Furthermore, Europe’s encounter with plague had economic, social, and religious effects that vastly changed European society and contributed to Europe’s emergence into the Renaissance, an age of exploration.

History of Plague in Europe

Prior to the medieval European pandemic, plague was not new to Europe, but its effects were confined due to limited exchange. Plague, a bacterial disease afflicting humans,² has three clinical forms depending on the body system that is first attacked: the lymphatic, circulatory or respiratory systems.³ All three clinical forms caused the Plague of Justinian in the Byzantine Empire from 541-542 C.E.⁴ This “First Plague Pandemic”⁵ spread rapidly across the Byzantine

¹Aberth, John. *The Black Death: The Great Mortality of 1348-1350: A Brief History with Documents*. Boston, MA: Bedford/St. Martin's, 2005. Print.

²Haensch, Stephanie. "Distinct Clones of *Yersinia Pestis* Caused the Black Death." *PLoS Pathog PLoS Pathogens* 6.10 (2010): n. pag. Web.

³"History of Plague." *Centers for Disease Control and Prevention*. Centers for Disease Control and Prevention, 18 Nov. 2014. Web. 08 July 2015.

⁴Procopius, and Richard Atwater. *Secret History*. Ann Arbor: U of Michigan, 1961. Web.

⁵Frith, John. "History of Plague: The Three Great Pandemics." *Journal of Military and Veterans' Health* 20.2 (2012): n. pag. *Journal of Military and Veterans' Health*. Australasian Military Medicine Association, Apr. 2012. Web. 13 July 2015.

Empire.⁶ However, the pandemic was limited to Mediterranean trade routes and never spread further into Europe.⁷

The Plague of Justinian had devastating effects, killing an estimated 25 million during the initial outbreak and subsequent recurrences for the next two centuries.⁸ This reduced exchange and caused economic disruptions, food shortages, and reduced tax revenues.⁹ Seven centuries later, plague reappeared in Europe during the “Second Plague Pandemic”¹⁰ in the fourteenth century.

Europe Before Its Deadly Encounter

Prior to the pandemic, Europe was under a feudalistic social system, closely related to the prevalent economic system of manorialism.¹¹ Peasants worked for noble landlords in exchange for protection and use of land. A majority of these peasants were serfs, bound to isolated manorial estates and obliged to their landlords.¹² Consequently, there was a disparity between social classes: the rich were exceedingly rich and the poor were exceedingly poor.¹³

⁶Halsall, Paul. "Medieval Sourcebook: Procopius: The Plague, 542." *Internet History Sourcebooks Project*. Fordham University, 1998. Web. 25 Jan. 2016.

⁷Than, Ker. "Two of History's Deadliest Plagues Were Linked, With Implications for Another Outbreak." *National Geographic*. National Geographic Society, 31 Jan. 2014. Web. 24 Jan. 2016.

⁸Choi, Charles Q. "Plague Helped Bring Down Roman Empire, Graveyard Suggests." *LiveScience*. TechMedia Network, 10 May 2013. Web. 29 Feb. 2016.

⁹North, Joshua. "The Death Toll of Justinian's Plague and Its Effects on the Byzantine Empire." *The Death Toll of Justinian's Plague and Its Effects on the Byzantine Empire*. Armstrong State University, 2014. Web. 24 Jan. 2016.

¹⁰Frith, John. "History of Plague: The Three Great Pandemics." *Journal of Military and Veterans' Health* 20.2 (2012): n. pag. *Journal of Military and Veterans' Health*. Australasian Military Medicine Association, Apr. 2012. Web. 13 July 2015.

¹¹Jupp, Kenneth. "European Feudalism from Its Emergence through Its Decline." *American Journal of Economics and Sociology* 59.5 (2000): 27-45. Print.

¹²Hanawalt, Barbara. *The Ties That Bound: Peasant Families in Medieval England*. New York: Oxford UP, 1986. Print.

¹³Dunn, John M. *Life During the Black Death*. San Diego: Lucent, 2000. Print.

Religion, primarily Catholicism, holding great importance in European society, was ubiquitous in Europe during this period. The Bible was available only in Latin and people depended on the clergy to understand it.¹⁴ Anything beyond human control, good or bad, was considered to be of divine consequence.¹⁵ People would turn to the Church for help, guidance, and healing. The Church controlled medical practice as clergy members were the only permitted medical practitioners.¹⁶ Because of this, treatments were limited to the Church's teachings. Additionally, the Church limited scientific learning. While scientific advances occurred during this time, especially in the fields of natural sciences at previously established universities, the Church shunned advances that challenged theology.¹⁷ Organized public health efforts were also prohibited, being seen as attempts to avoid God's will.¹⁸

Explorations and Conditions Increasing Susceptibility to Plague

In the centuries leading up to the fourteenth, Europe became prime for a pandemic: exchange of goods increased, population skyrocketed and urbanized, living conditions became unsanitary, and health care became inadequate. The Crusades were a series of religious wars beginning in 1095.¹⁹ Europeans rarely traveled to the near east before the Crusades. However,

¹⁴Pennington. "The Black Death and its Religious Impact." Catholic University of America, Washington D.C. *The Black Death and its Religious Impact*. Web. 13 July 2015.

¹⁵Murdoch, Vaclav, and G S. Couse. *Essays on the Reconstruction of Medieval History*. Montreal: McGill-Queen's University Press, 1974. Print.

¹⁶Wudka, Jose. "The Middle Ages." *The Middle Ages*. University of California, Riverside, 24 Sept. 1998. Web. 24 Jan. 2016.

¹⁷Thijssen, Hans. "Condemnation of 1277." *Stanford Encyclopedia of Philosophy*. Stanford University, 30 Jan.2003. Web. 24 Jan. 2016.

¹⁸Cipolla, Carlo M. *Public Health and the Medical Profession in the Renaissance*. Cambridge: Cambridge UP, 1976. Print.

¹⁹Abels, Richard. "Timeline for the Crusades and Christian Holy War." *Age of Chivalry and Faith*. United States Naval Academy, n.d. Web. 1 Apr. 2016.

during the Crusades commodities like silk and spices that were rare in Europe were rediscovered, sparking an increased desire for trade and interest in new trade routes to Asia.²⁰ Exchange became more common between individuals, kingdoms, and continents.²¹ As a result, European kingdoms began to explore new trade routes and commerce expanded substantially in the thirteenth century, increasing urbanization and dense living conditions.²²

Along with the increase in urbanization, the general population increased as well. In earlier centuries, Europe experienced the effects of a slight global warming, known as the “Medieval Warming Period”²³ following the natural pattern of global warming and cooling. This created wetter summers and shorter winters, climatic conditions ideal for agricultural production. With an abundance of food, people had more children and lived longer, causing substantial population increases.²⁴ However, as time passed, the population outpaced the development of resources in Europe.

Many Europeans lived in unsanitary and squalid conditions. People in cities lived in close contact and interacted with disease vectors like rodents and waste.²⁵ A vector unknown at the time, rodents were commonplace in even the wealthiest of homes. After the fall of the western Roman Empire, infrastructure crumbled, resulting in people sharing water sources and waste

²⁰Bradley, Cameron. "Interview with Dr. Cameron Bradley, Assistant Professor of Medieval Studies at Macalester College." Personal interview. 5 Apr. 2016.

²¹Hamerow, Helena. "Trade, Exchange and Urbanization." *The Oxford Handbook of Anglo-Saxon Archaeology*. Ed. Sally Crawford. N.p.: Oxford UP, 2011. 503-14. Print.

²²Pappas, Lee. "World History from the Renaissance to Imperialism" *Fifteenth Century Europe: Social and Economic Changes*. Sam Houston State University, n.d. Web. 29 Feb. 2016.

²³"Was There a Little Ice Age and a Medieval Warm Period?" The Scientific Basis. Intergovernmental Panel on Climate Change, n.d. Web. 10 July 2015.

²⁴Reyerson, Kathryn. "Interview with Dr. Kathryn Reyerson, Professor of Medieval Studies at the University of Minnesota." Personal interview. 1 Apr. 2016.

²⁵Dobson, Mary J. "Plague." *Disease: The Extraordinary Stories behind History's Deadliest Killers*. London, Great Britain: Quercus, 2007. 8-19. Print.

running through streets due to the lack of running water and sewers.²⁶ Even isolated countryside manors experienced these squalid conditions.

Disastrous Encounters Preceding the Pandemic

Calamitous crises helped plague reach and spread through an already susceptible Europe. The Great Famine of 1315, caused by the population increases and a sudden cooling of the medieval climate,²⁷ led to the deaths of approximately 10% of the population.²⁸ Much of Europe was left malnourished and weakened, causing higher mortality rates from the plague than in the past.²⁹

In the 1330s, Asian kingdoms encountered plague while exploring new trade routes that ran through central Asia where the bacteria was indigenous. Plague caused a pandemic in Asia, killing millions.³⁰ The plague's threat to Europe increased as it traveled along trading routes, many of which were created previously when Europe explored new trading routes.³¹

In 1346, plague-ridden Tatar Mongols besieged Kaffa, a trading center on the Crimean peninsula populated primarily by European traders.³² An Italian in Kaffa, Gabriele de' Mussi,

²⁶Dunn, John M. *Life During the Black Death*. San Diego: Lucent, 2000. Print.

²⁷Mann, Michael E. "Little Ice Age." Thesis. University of Virginia, n.d. *Encyclopedia of Global Environmental Change* (2002): 504-09. *Penn State Department of Meteorology*. Web. 10 July 2015.

²⁸Jordan, William C. *The Great Famine: Northern Europe in the Early Fourteenth Century*. Princeton, NJ: Princeton UP, 1996. Web.

²⁹DeWitte, Sharon N. "Selectivity of Black Death Mortality with Respect to Preexisting Health." Thesis. University of California, Berkeley, 2008. *Selectivity of Black Death Mortality with Respect to Preexisting Health*. The National Academy of Sciences of the USA, 2008. Web. 24 Jan. 2016.

³⁰Dobson, Mary J. "Plague." *Disease: The Extraordinary Stories behind History's Deadliest Killers*. London, Great Britain: Quercus, 2007. 8-19. Print.

³¹Hirst, L. F. "Conquest Of Plague." *The British Medical Journal* 2.4851 (1953): 1432-433. *JSTOR*. Web.

³²Wheelis, Mark. "Biological Warfare at the 1346 Siege of Kaffa." *Emerging Infectious Diseases* 8.9 (2002): 971-75. *Biological Warfare at the 1346 Siege of Kaffa*. Centers for Disease Control and Prevention, 16 July 2010. Web. 13 July 2015.

noted that the Tatar leader “ordered infected corpses to be placed in catapults and lobbed into the city in hope that the intolerable stench would kill everyone inside...”³³ These actions, combined with infected rats in the city, caused many in Kaffa to encounter plague unintentionally before fleeing back to Europe.

At the same time, the wartime conditions of the Hundred Years’ War of 1337-1453 between England and France primed the spread of disease.³⁴ Plague spread easily among troops interacting in close quarters. On the front lines, medical treatments were devoted to treating battle wounds rather than treating disease. Soldiers would sometimes encounter the disease in battle and spread it upon returning home.³⁵

Europe Encounters the Black Death

In 1347, the plague spread via land exchange routes to eastern Europe and via sea trading routes to Mediterranean kingdoms, then swept north, ravaging every town it encountered. Traders fleeing plague-ridden Kaffa unintentionally brought the disease to Constantinople,³⁶ a large coastal trading city located between Asia and Europe, after which it spread rapidly to Europe.³⁷ In late 1347, following the infection of Constantinople, Sicily and Greece encountered plague through exchange with infected traders.³⁸ From these primary starting points, the plague

³³De' Mussi, Gabriele. "Gabriele De' Mussi of Piacenza Describes the Plague in 1347:." n.d.: n. pag. New York University. Web. 13 July 2015.

³⁴"The Black Death: Horseman of the Apocalypse in the Fourteenth Century." The Black Death. Marquette University, n.d. Web. 11 July 2015.

³⁵Patrone, Michelle. "The Hundred Years’ War and the Plague." *World History*. CDA World History, n.d. Web. 24 Jan. 2016.

³⁶Gregoras, Nicephorus. "Historia Byzantina." 1348. *The Black Death: The Great Mortality of 1348-1350: A Brief History with Documents*. Boston: Bedford/St. Martin's, 2005. Print.

³⁷Senker, Cath. *The Black Death 1347-1350: The Plague Spreads across Europe*. Chicago, IL: Raintree, 2006. Print.

³⁸Wheelis, Mark. "Initial Spread of Plague in the 14th Century." *Emerging Infectious Diseases*. 9th ed. Vol. 8. Atlanta: Centers for Disease Control and Prevention, 2002. N. pag. *Biological Warfare at the 1346 Siege of Kaffa*. Web. 11 July 2015.

spread north and west, reaching as far as Scandinavia by 1351 (See Appendix A). By 1353, all of the Eurasian landmass and much of North Africa had encountered the plague and approximately a third of Europe had perished.³⁹ (See Appendix B)

The Black Death pandemic devastated Europe and impacted many aspects of European society. With upwards of 20 million dead, life was at a standstill and there were not enough living to bury the dead.⁴⁰ Trade declined and social order collapsed so that many people feared leaving home.⁴¹ Those who left fled to the countryside, causing a brief de-urbanization.⁴² Countryside conditions, unfortunately, were no better than cities; entire villages had been wiped out by the plague.⁴³

Consequences of the Devastating Exchange

In the decades following the pandemic, Europe experienced significant economic, social, scientific, and religious changes. The first economic change was the shift in the value of land and goods. Many workers died, creating difficulties for landowners to produce goods. Obtaining goods through trade also proved to be difficult because exchange decreased in fear of encountering the disease. Both caused an inflation in prices for goods.⁴⁴ Conversely, land values deflated. In the century leading up to the pandemic, the cost for land rose consistently. Later,

³⁹Benedictow, Ole J. *The Black Death, 1346-1353: The Complete History*. Woodbridge, Suffolk, UK: Boydell Press, 2004. Print.

⁴⁰Dene, William. "The Situation in Rochester." [Rochester] 1349: n. pag. *University of Arizona*. Web. 8 July 2015.

⁴¹Di Tura, Agnolo. *The Plague in Siena: An Italian Chronicle*. Trans. William M. Bowsky. *Cronica Maggiore*. New York: Holt, Rinehart and Winston, 1971. N. pag. Print.

⁴²Boccaccio, Giovanni, John Payne, and Charles S. Singleton. *Decameron*. Berkeley: University of California Press, 1982. Web.

⁴³Damen, Mark. "The Black Death." *USU 1320: History and Civilization*. Utah State University, Logan, Utah. *USU 1320: History and Civilization*. Web.

⁴⁴"The Plague." *Decameron Web*. Brown University, 18 Feb. 2010. Web. 13 July 2015.

after many landowners died, land was abundant and prices dropped drastically.⁴⁵ These lower prices allowed more people to purchase land that was previously unaffordable.

The consequences of the pandemic inspired peasants' exploration of revolutionary ideas and the creation of poor laws.⁴⁶ Peasants had died in great numbers, as illustrated by Giovanni Boccaccio in his *Decameron*:

The plight of the lower and most of the middle classes was even more pitiful to behold. Most of them remained in their houses, either through poverty or in hopes of safety, and fell sick by the thousands. Since they received no care and attention, almost all of them died.⁴⁷

The labor supply plummeted. Peasants realized they could demand higher wages. In England, King Edward III sought to quell these demands by issuing the Statute of Laborers, a draconian decree requiring every able-bodied unemployed person under sixty to work for anyone who wanted to hire him.⁴⁸ Violators of the Statute of Laborers were fined. However, this did not stop the peasants' demands, as described by Henry Knighton:

The workers, nevertheless, were so elated and contrary that they did not heed the mandate of the king [prohibiting higher wages] but if anyone wanted to hire them, he had to give them as the desired; either lose their crops and fruit or grant the selfish and lofty wishes of the workers.⁴⁹

Peasant uprisings continued during the fourteenth century throughout Europe as exemplified by the Jacquerie in France in 1358, the Ciompi Revolt in 1378 in Italy, and Wat Tyler's Rebellion in

⁴⁵Herlihy, David, and Samuel K. Cohn. *The Black Death and the Transformation of the West*. Cambridge, Mass: Harvard University Press, 1997. Print.

⁴⁶Quigley, William P. "Five Hundred Years of English Poor Laws, 1349-1834: Regulating the Working and Nonworking Poor." *University of Akron Law Review*. University of Akron, n.d. Web. 29 Feb. 2016.

⁴⁷Boccaccio, Giovanni, John Payne, and Charles S. Singleton. *Decameron*. Berkeley: University of California Press, 1982. Web.

⁴⁸Edward III. "The Statute of Laborers, 1351." The Avalon Project (n.d.): n. pag. The Avalon Project : The Statute of Laborers; 1351. Yale Law School. Web. 27 Feb. 2016.

⁴⁹Downs, Norton, and Michael Zwieter. *Basic Documents in Medieval History*. Princeton, N.J: Van Nostrand, 1959. Print.

England in 1381.⁵⁰ The peasant rebellions started as small whispers of discontent, gaining scope quickly, leading to increased wages and expanded rights.⁵¹

Increased wages empowered peasants, causing serfdom to disappear in many places, triggering the decline of manorialism.⁵² The demand for labor was so high it threatened manorial holdings. Serfs, no longer tied to one landlord, could easily leave for another who would hire them. The lords had to make accommodations in order to keep peasants on their land. However, many serfs explored new labor options and ultimately became vagrant migratory workers.⁵³ Lacking an assured labor supply, many previously self-sufficient manors collapsed, increasing the need for merchants and causing reurbanization as cities could provide for their inhabitants without requiring serfdom.⁵⁴

Medical practice and health protocols improved after the pandemic. While medical practice was still outlawed for those not affiliated with the Church, more people turned to independent practitioners, allowing exploration into treatments extending beyond Church doctrine.⁵⁵ Governments followed suit with many European governments creating efficient public health protocols.⁵⁶ As an early example, the Council of People in Pistoia, Italy created a series of health ordinances at the height of the outbreak in an attempt to quell the

⁵⁰Cowie, Leonard W. *The Black Death and Peasants' Revolt*. London: Wayland, 1986. Print.

⁵¹Haskell, Douglas A., Andrew T. Hill, and Jane S. Lopus. "The Economic Impact of the Black Death of 1347-1352." FOCUS: World History. New York: Council for Economic Education, n.d. 240-48. Web.

⁵²Pappas, Lee. "World History from the Renaissance to Imperialism" Fifteenth Century Europe: Social and Economic Changes. Sam Houston State University, n.d. Web. 29 Feb. 2016.

⁵³Quigley, William P. "Five Hundred Years of English Poor Laws, 1349-1834: Regulating the Working and Nonworking Poor." University of Akron Law Review. University of Akron, n.d. Web. 29 Feb. 2016.

⁵⁴Damen, Mark. "The Black Death." USU 1320: History and Civilization. Utah State University, Logan, Utah. USU 1320: History and Civilization. Web.

⁵⁵Conrad, Lawrence I. *The Western Medical Tradition: 800 B.C.-1800 A.D.* Cambridge, Eng.: Cambridge UP, 1995. Print.

⁵⁶Cipolla, Carlo M. *Public Health and the Medical Profession in the Renaissance*. Cambridge: Cambridge UP, 1976. Print.

pandemic.⁵⁷ Additionally, early forms of quarantine were developed;⁵⁸ infected ships were required to wait in the harbor and those who were sick were not allowed to enter cities.⁵⁹

The effects of the pandemic immediately impacted people's religious beliefs, allowing for religious exploration. First, the Church lost many clergy members during the pandemic, as Henry Knighton described: "In Montpellier only seven friars were left from 149... At Marseilles only one Franciscan remained of 150..."⁶⁰ This loss of clergy, whom the public sought for medical and spiritual help, caused people to search for support from different sources, including independent medical practitioners and early Christian reformers.⁶¹ Additionally, people questioned why they were not saved from God's punishment, even though they gave generously to the Church.⁶² These two consequences of the pandemic contributed to a growing mistrust of the weakened Catholic Church that allowed for later religious reformations. Some people took religious matters into their own hands by practicing public self-flagellation, believing that atoning for their sins would repel the plague.⁶³ Flagellation was a part of a larger movement called the lay piety movement, a precursor to larger reformations, reflecting religious individualism.⁶⁴ A decade after the pandemic, early reformer John Wycliffe openly challenged

⁵⁷Buonacorsi, Simone. ORDINANCES FOR SANITATION IN A TIME OF MORTALITY. 1348. The list of ordinances of the city of Pistoia relative to the 1348 outbreak of plague. Pistoia, Italy.

⁵⁸Shackelford, Jole. "Interview with Dr. Jole Shackelford, Assistant Professor of the History of Medicine at the University of Minnesota." Personal interview. 5 Apr. 2016.

⁵⁹Sehdev, Paul S. "The Origin of Quarantine." *Clinical Infectious Diseases* 35.9 (2002): 1071-072. *JSTOR*. Web. 1 Apr. 2016.

⁶⁰Downs, Norton, and Michael Zwettler. *Basic Documents in Medieval History*. Princeton, N.J: Van Nostrand, 1959. Print.

⁶¹Dunn, John M. *Life During the Black Death*. San Diego: Lucent, 2000. Print.

⁶²Bovey, Alixe. "Church in the Middle Ages: From Dedication to Dissent." *The Middle Ages*. The British Library, 2007. Web. 25 Jan. 2016.

⁶³Beard, Elizabeth. "Public Penance, Public Salvation: An Exploration of the Black Death's Influence on the Flagellant Movement." *Journal of Undergraduate Research*, University of California, Santa Cruz (2013): n. pag. 2013. Web.

⁶⁴Knox, E. L. "Crisis in the Late Medieval Church." *The Late Medieval Church*. Boise State University, n.d. Web. 12 Apr. 2016.

the Church's authority by translating the Bible into English, as he wished for his countrymen to no longer be dependent on the Church for interpretation.⁶⁵

Alongside shaken religious faith, European culture was devastated. With the prevalence of unexpected death, the masses realized death's inevitability. Art in the years following the pandemic exemplified this mindset by showing its grim influence. Artists coped with the devastation by creating works featuring a new dark genre: the Dance of Death, or *Danse Macabre*.⁶⁶ This genre, an allegory on the universality of death, represented the notion that regardless of one's social status during life, everyone will dance the same dance of death in the end. Aside from this new genre, there was also a notable spike in morbid art, like the *Triumph of Death* by Pieter Bruegel (See Appendix C).⁶⁷ Additionally, the pandemic also influenced scholars and poets like Giovanni Boccaccio and Petrarch, an early humanist often hailed as the initiator of the Renaissance.⁶⁸

Critical Explorations in its Aftermath

The consequences of the Black Death pandemic allowed for explorations to occur that contributed to Europe's emergence into the Renaissance,⁶⁹ a turning point in Western thought defined by the revivals of Greek and Roman art and philosophy and by the exploration of ideas.⁷⁰ The pandemic greatly contributed to the transformation of Europe's economic and social

⁶⁵Dunn, John M. *Life During the Black Death*. San Diego: Lucent, 2000. Print.

⁶⁶Pollefeys, Patrick. "The Dance of Death." *La Mort Dans L'art*. N.p., 1996. Web. 13 July 2015.

⁶⁷Guido, Lisa. *Medieval and Renaissance Art*. Chicago: Art Institute of Chicago, 2002. Print.

⁶⁸Petrarca, Francesco. "Ad Seipsum." Letter to Himself. 1349. *Contemporary Perspectives*. Brown University, 12 Mar. 2010. Web. 13 July 2015.

⁶⁹Cantor, Norman F. *In the Wake of the Plague: The Black Death and the World It Made*. New York: Free Press, 2001. Print.

⁷⁰Huizinga, Johan. *Men and Ideas: History, the Middle Ages, the Renaissance : Essays*. New York: Meridian Books, 1959. Print.

systems. The increase of peasant wages and the subsequent decrease in wealth inequality quickened the decline of the manorial system and feudalism.⁷¹ With the demise of the manorial system, Europe began to develop mercantilism, an economic system where exports increase a nation's wealth.⁷² This wealth would be spent to compete against other nations by exploring new colonies and funding wars. Mercantilism was also the precursor to the current socio-economic system of capitalism.⁷³

The economic and social changes wrought by the plague generated wealth used to promote artistic advancements during the Renaissance. The excess of wealth created by the massive death toll put extra money in the hands of those who were already patrons of the arts.⁷⁴ Conspicuous consumption among the newly wealthy led to increased exploration and patronage of the arts.⁷⁵ For example, after nearly half the population in Florence perished, the families that grew wealthier included the Medicis, an already wealthy banking family that would become patrons of great Renaissance artists including da Vinci and Michelangelo.⁷⁶

Following the rise of the lay piety movement and early reformations after the pandemic, larger explorations in religious practices occurred. Religious mindsets had changed permanently from using religion to explaining the world's misfortunes to a spiritual role directed at

⁷¹Barnard, Bryn. "Smithereens: How the Black Death Smashed Feudal Europe." *Outbreak: Plagues That Changed History*. New York: Crown, 2005. 1-9. Print.

⁷²Broadberry, S. N., B. M. S. Campbell, Alexander Klein, Mark Overton, and Bas Van Leeuwen. *British Economic Growth, 1270-1870*. N.p.: n.p., n.d. Print.

⁷³Fulcher, James. *Capitalism: A Very Short Introduction*. Oxford: Oxford UP, 2004. Print.

⁷⁴Meiss, Millard. *Painting in Florence and Siena after the Black Death: The Arts, Religion and Society in the Mid-fourteenth Century*. New York: Harper & Row, 1964. Print.

⁷⁵Reyerson, Kathryn. "Interview with Dr. Kathryn Reyerson, Professor of Medieval Studies at the University of Minnesota." Personal interview. 1 Apr. 2016.

⁷⁶Whipps, Heather. "How the Wealthy Medici Changed the World." LiveScience. TechMedia Network, 04 May 2008. Web. 1 Apr. 2016.

self-salvation.⁷⁷ These religious implications and the resulting willingness of people to question standard Catholic doctrine were contributing factors in the emergence of Martin Luther's protestant reformation in the early 16th century,⁷⁸ along with other religious movements.⁷⁹

Conclusion

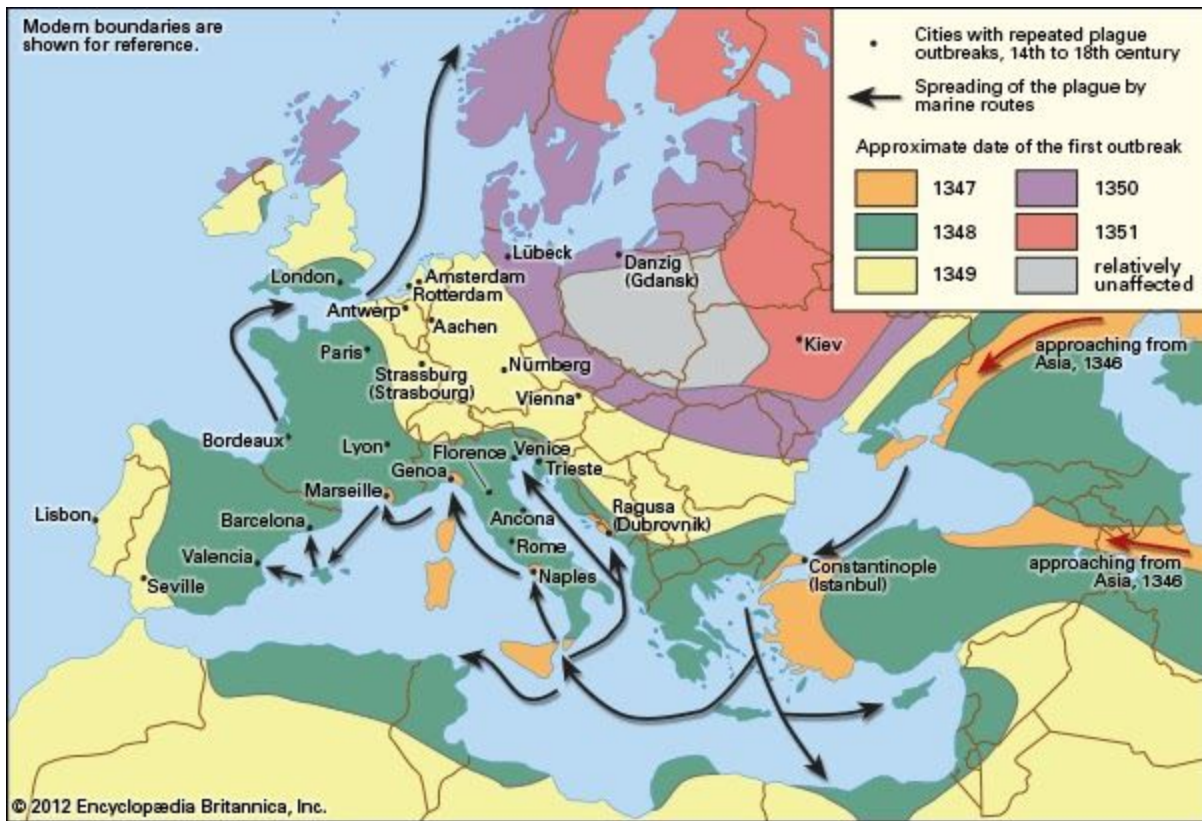
Fourteenth-century Europe, highly susceptible to disease, encountered the Black Death while exploring new methods to exchange goods with Asia. The resulting pandemic shook the foundations of European society, allowing new societal systems to develop and explorations into modern economic, religious, and scientific ideas to occur. Alongside these explorations, the pandemic changed Europe's culture and society in the fourteenth century. Cultural and religious explorations, a shattered feudal system, the eradication of serfdom and a new sophisticated economic system, all outcomes of the plague pandemic, contributed to Europe's arrival into the Renaissance.

⁷⁷Bovey, Alixe. "Church in the Middle Ages: From Dedication to Dissent." *The Middle Ages*. The British Library, 2007. Web. 25 Jan. 2016.

⁷⁸Bishop, Paul A. "Martin Luther and the Protestant Reformation." *A History of Christian Doctrine (1978)*: n. pag. Hillsborough Community College. Web. 13 July 2015.

⁷⁹Thompson, Karl F. *Middle Ages, Renaissance, and Reformation*. New York: Harcourt, Brace & World, 1964. Print.

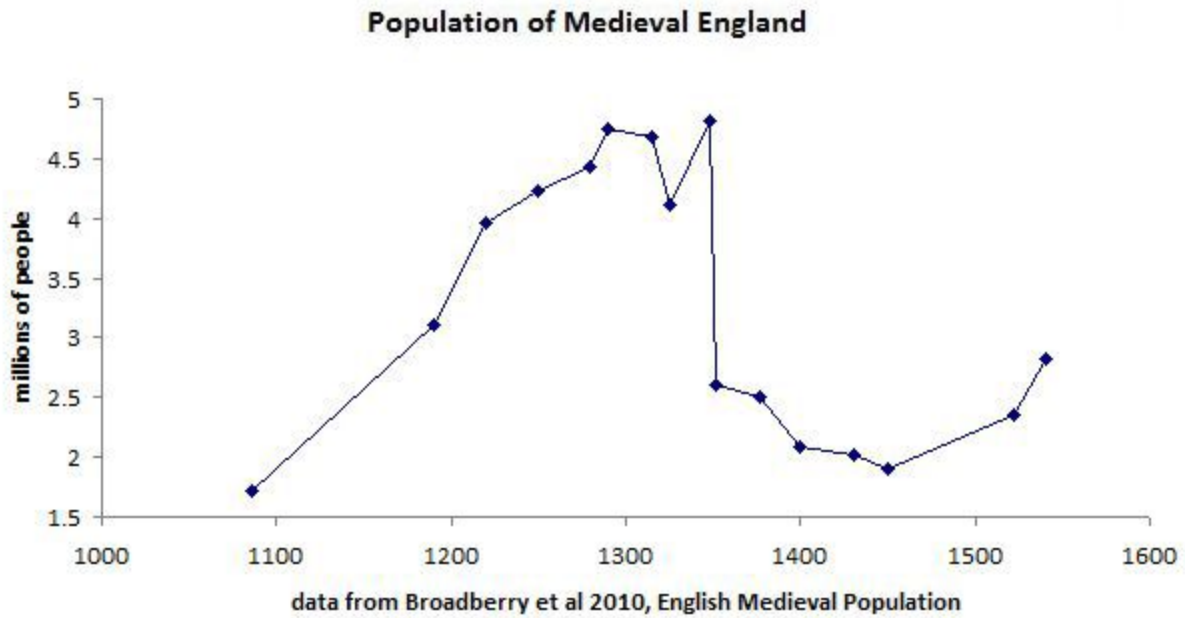
Appendix A



Spread of the Black Death." *Encyclopedia Britannica*. N.p., n.d. Web.

This map shows the spread of the Black Death in Europe and the years it struck each respective place.

Appendix B



"Population of Medieval England." *Medieval Population*. N.p., n.d. Web.
This graph shows the estimated population of medieval England based on Professor Stephen Broadberry's findings in his study, *Medieval Population*.

Appendix C



Bruegel, Pieter. *The Triumph of Death*. 1462. Museo Del Prado, Madrid, Spain. *Archaeology and Arts*. Web. 12 July 2015.

This painting depicts the macabre theme of death that became prevalent after the Black Death.

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Al-Wardi, Abu Haft 'Umar Ibn. *Essay on the Report of the Pestilence*. 1348. *The Black Death: The Great Mortality of 1348-1350: A Brief History with Documents*. Boston: Bedford/St. Martin's, 2005. Print.

This essay excerpt describes how the plague reached Palestine, a country in the near east, through exchange, and how it continued further west along trade routes. I used this source to understand how the plague reached Europe from Asia.

Boccaccio, Giovanni, John Payne, and Charles S. Singleton. *Decameron*. Berkeley: University of California Press, 1982. Web.

This book written by Giovanni Boccaccio contains many stories about the time period he lived in, 1313-1375 C.E., and many of them contain realistic but fictional stories following different people during the Black Death. I used his descriptions of the effects of Black Death as evidence of the cultural and societal impacts of the pandemic and his book also helped me better understand how people during the Middle Ages saw the epidemic.

Brueghel, Pieter. *The Triumph of Death*. 1462. Museo Del Prado, Madrid, Spain. *Archaeology and Arts*. Web. 12 July 2015.

This oil-painting depicts death and destruction. It shows many different people dead or dying in many different ways on a barren and dead landscape with dead trees and grass and destroyed buildings. I used this art and others in the Danse Macabre genre as example of how the Black Death contributed to the grisly theme of death that became common after the 14th century.

Buonacorsi, Simone. *ORDINANCES FOR SANITATION IN A TIME OF MORTALITY*. 1348. *The list of ordinances of the city of Pistoia relative to the 1348 outbreak of plague*. Pistoia, Italy.

This list of sanitation ordinances created by a council in Pistoia, Italy was one of the earliest examples of sanitary measures taken to prevent another plague epidemic. This source helped me understand the state of public health after the pandemic.

Clynn, John. *Annalium Hiberniae Chronicon*. 1348. *The Black Death: The Great Mortality of 1348-1350: A Brief History with Documents*. Boston: Bedford/St. Martin's, 2005. Print.

This chronicle describes the plague in Ireland and how it affected daily life and social order. I used this chronicle in comparison with other chronicles from around Europe to see which aspects and consequences of the plague were most prevalent.

D'Agromont, Jacme. *Regimen of Protection Against Epidemics. 1349. The Black Death: The Great Mortality of 1348-1350: A Brief History with Documents. Boston: Bedford/St. Martin's, 2005. Print.*

This regimen written by a professor of medicine in Spain describes how to best treat the disease and how to best protect oneself against it. I used this source to better understand how physicians at the time responded to the pandemic and what early measures were set in place in an attempt to prevent further infection.

da Piazza, Michael. "The Fate of Dutiful Friars." [Messina (Sicily)] 1361: n. pag. *University of Arizona. Web. 8 July 2015.*

This article written by an Italian friar describes how many friars who visited the sick so they could confess their sins fell ill and ultimately died. This source explains the deaths of many religious personnel and helped me to understand the impacts the Black Death had on the church.

De' Mussi, Gabriele. "Gabriele De' Mussi of Piacenza Describes the Plague in 1347:." n.d.: n. pag. *New York University. Web. 13 July 2015.*

This description of the Siege of Kaffa is a primary source that describes the Tartar Mongols spread of plague in Kaffa by flinging infected bodies of the recently deceased over the walls of the trading town. I used this source to understand better how the plague spread to Europe and as evidence that plague came from the Mongols in the east.

Dene, William. "The Situation in Rochester." [Rochester] 1349: n. pag. *University of Arizona. Web. 8 July 2015.*

This brief report written by a religious leader in England describes the effects the plague had, especially regarding the Church and the populace, like how there was not enough room in religious graveyards and not enough clergy members to deliver final rites for the dead. I used this source to understand the effects of the plague had right away on the populace.

Di Tura, Agnolo. *The Plague in Siena: An Italian Chronicle. Trans. William M. Bowsky. Cronica Maggiore. New York: Holt, Rinehart and Winston, 1971. N. pag. Print.*

This chronicle describes Di Tura's personal encounters with the plague: he lost his five children to it. He also describes the effects on Siena, his home town. I used the chronicle to understand the immediate effects of the Black Death.

Downs, Norton, and Michael Zwettler. *Basic Documents in Medieval History*. Princeton, N.J: Van Nostrand, 1959. Print.

This collection of medieval documents gave me access to extracts from the Chronicle of Henry Knighton, who was an Augustinian canon at the abbey of Saint Mary of the Meadows, Leicester, England, and an ecclesiastical historian who wrote a chronicle from 1337-1396. I used these documents to gain a better understanding of medieval times and plague times.

Edward III. "The Statute of Laborers, 1351." *The Avalon Project* (n.d.): n. pag. *The Avalon Project : The Statute of Laborers; 1351*. Yale Law School. Web. 27 Feb. 2016.

The Statute of Laborers is the official decree created by King Edward III when he tried to prevent an increase in peasant wages. This source helped me understand what difficulties peasants encountered when demanding higher wages.

Gertsman, Elina. *The Dance of Death in the Middle Ages: Image, Text, Performance*. Turnhout: Brepols, 2010. Print.

This book is a collection of primary images, texts and performances created after the Black Death pandemic that features the Dance of Death genre. I used these sources as a reference when I described the Dance of Death genre.

Gray, Douglas. *From the Norman Conquest to the Black Death: An Anthology of Writings from England*. Oxford: Oxford University Press, 2011. Print.

This collection of English writings from the 11th century to the 15th century describe English society and culture from their time. I used this source to learn more about English society, culture, and mindsets before, during, and after the Black Death pandemic in the 14th century.

Gregoras, Nicephorus. "Historia Byzantina." 1348. *The Black Death: The Great Mortality of 1348-1350: A Brief History with Documents*. Boston: Bedford/St. Martin's, 2005. Print.

This book written by a scholar in Constantinople describes the arrival of the plague into the western world through trading ships. I used this source to better understand the early days of the pandemic and how exchange played a huge role in the plague's massive scope.

Guido, Lisa. *Medieval and Renaissance Art*. Chicago: Art Institute of Chicago, 2002. Print.

This book is a collection of art from the periods before and after the pandemic. I used these art pieces and their analyzations to understand the emotion and theme in art before and after the pandemic, and compare art from the Middle Ages and the Renaissance.

HEINRICH OF HERFORD. *Book of Memorable Matters*. 1349. *The Black Death, The Great Mortality of 1348-1350: A Brief History with Documents*. Boston: Bedford/St. Martins, 2005. N. pag. Print.

This excerpt of a book written by a German friar describes the dramatic increase in the popularity of the flagellant movement. I used this source to better understand the details of the flagellant movement and how the Catholic Church viewed the movement.

Halsall, Paul. "Medieval Sourcebook: Procopius: The Plague, 542." *Internet History Sourcebooks Project*. Fordham University, 1998. Web. 25 Jan. 2016.

This website gave me access to all of Procopius' writings as a scholar under Byzantine emperor Justinian. I used his writings to understand the state of the Byzantine empire before and a the plague of Justinian.

Knighton, Henry, and G. H. Martin. "Knighton's Chronicle, 1337-1396." *Speculum* 73.1 (1998): 212. Cambridge University Press. Web.

This chronicle describes the how the plague spread throughout, and the impacts it had on the economy: landlords needed workers, and the workers realized they could demand high wage. I used this source to understand the plague and effects the massive death had on the European population and systems.

Mitchell, Robert. *The Chronicle of Novgorod*. 3rd ed. Vol. 25. London: Offices of the Society, 1914. Print. Camden.

This chronicle describes the Black Death in Russia in the 1350s, and how it effected Russian society. I used this source to understand the plague's effect on societies that were not part of Western Europe and saw that the effects of the plague and the massive death it brought were devastating but largely significant

Notke, Bernt. *Lübecker Totentanz*. 1463. *Lübeck's Dance of Death*. Web. 12 July 2015.

This painting depicts medieval nobles and commoners alike dancing with grey and sunken corpses that are almost skeleton-like. I used this art and others in the Danse Macabre genre as example of how the Black Death contributed to the grisly theme of death that became common after the 14th century.

Petrarca, Francesco. "Ad Seipsum." Letter to Himself. 1349. *Contemporary Perspectives*. Brown University, 12 Mar. 2010. Web. 13 July 2015.

This letter was written by an Italian scholar and poet, Petrarch, primarily focuses on himself, hence the name, and his close circle of friends. This letter helped me understand the plague's effects on the individual and the individual's family.

Platiensis, Michael. "Plague in Messina in 1347." 1358. Trans. C. H. Clarke. *History of Western Civilization*. N.p.: Boise State U, 1926. N. pag. Web.

This journal entry describes the Black Death's spread into Messina (Sicily). I used this primary source to learn about how the plague affected urban areas like Messina and how the people there reacted to the plague with fear.

Procopius, and Richard Atwater. *Secret History*. Ann Arbor: U of Michigan, 1961. Web.

This book written by a scholar alive during the Plague of Justinian describes the effects of the plague on the populace and also confirms that all three strains of plague were present. I used this source as evidence that all the symptoms of the three types of plague were present during the Plague of Justinian.

Stefani, Marchione Di Coppo. "Concerning A Mortality In The City Of Florence In Which Many People Died." Trans. Niccolo Rodolico. *Cronaca Fiorentina*. Florence: n.p., 1378. N. pag. Web.

This chronicle is an account of the Black Death in Florence, originally written in Italian. I used this source to learn about how witnesses perceived the pandemic and the disease.

Thompson, Karl F. *Middle Ages, Renaissance, and Reformation*. New York: Harcourt, Brace & World, 1964. Print.

This collection of primary stories written by authors of the middle ages and Renaissance allowed me to learn how art and literature, and most importantly, society, had changed over the course of one thousand years, stretching from the recent years after Rome's fall to the late Renaissance.

Venette, Jean Fillon, and Guillaume Nangis. *The Chronicle of Jean De Venette, 1340-1368*. New York: Columbia UP, 1953. Print.

This chronicle describes the political and religious situation of the 14th century, and an intimate understandings and descriptions of the Black Death's devastation. I used this source to gain a better understanding on how people from the 14th century viewed the plague and how the widespread death influence European politics and religion.

Villani, Matteo. "God's Hand Was Unstrung." *Villani's Chronicle* (1363): n. pag. *University of Arizona*. Web.

This chronicle was started by Giovanni Villani, the first great chronicler of Florence, but he succumbed to the plague early in the pandemic, so his brother, Matteo, completed his works. I only used the chapters written by Matteo, as he described the plague as it ravished Florence. I primarily used his chronicle to gain a better understanding of how the plague affected specific places throughout Europe.

Wolgemut, Michael. *The Dance of Death*. 1493. *Georgetown University*. *Georgetown University*. Web. 12 July 2015.

This artwork depicts several skeletons holding hands and dancing together while another plays music. This art is a reminder of the human condition and its mortality. I used this art and others in the Danse Macabre genre as example of how the Black Death contributed to the theme of death that became common after the 14th century.

SECONDARY SOURCES:

Abels, Richard. "Timeline for the Crusades and Christian Holy War." *Age of Chivalry and Faith*. United States Naval Academy, n.d. Web. 1 Apr. 2016.

This timeline describes the dates, locations, and effects of each crusade. I used this source to develop a stronger background knowledge about the Crusades and to better understand how Europeans were reintroduced with Asian goods.

Aberth, John. *From the Brink of Apocalypse Confronting Famine, War, Plague, and Death in the Later Middle Ages*. New York: Routledge, 2000. Print.

This book describes all the hardship Europeans endured during the late Middle Ages, including the Black Death, and how these hardships lead to a continent rebirthed. I used this source to understand the context of the plague in European life at the time.

Aberth, John. *The Black Death: The Great Mortality of 1348-1350: A Brief History with Documents*. Boston, MA: Bedford/St. Martin's, 2005. Print.

This book is a collection of historical documents written during and after the Black Death pandemic. I used these primary documents as evidence to support my thesis and to understand how people saw the pandemic at the time.

Alchin, Linda. "Medieval Art." *Medieval Life and Times*. Siteseen Ltd, 2014. Web. 24 Jan. 2016.

This website dedicated to medieval art specifically describes big changes in medieval art, including the Black Death. I used this website both to learn more about the period and how artists saw the world, but also to learn about the Dance of Death.

Barnard, Bryn. "Smithereens: How the Black Death Smashed Feudal Europe." *Outbreak: Plagues That Changed History*. New York: Crown, 2005. 1-9. Print.

This book chapter describes the Black Death's effects on Europe's social system of feudalism and economy. This book also contained helpful maps and graphs regarding the plague. I used this book as a reference when describing the economic and social changes.

Beard, Elizabeth. "Public Penance, Public Salvation: An Exploration of the Black Death's Influence on the Flagellant Movement." *Journal of Undergraduate Research, University of California, Santa Cruz* (2013): n. pag. 2013. Web.

This journal article describes how the Black Death caused an increase in the popularity of the flagellant movement and also how other aspects of the broader lay piety movement became more popular after the pandemic's devastating effects. I used this source to better understand how the plague and the flagellant movement were related.

Benedictow, Ole J. *The Black Death, 1346-1353: The Complete History*. Woodbridge, Suffolk, UK: Boydell Press, 2004. Print.

This book is probably one of the most useful resources I found. Not only does the author go to the ends of the Earth to prove his claims, he also cites all his sources he used in the footnotes on the page, which I found extremely helpful in my search for primary resources. The author also created separate chapters of the Black Death's impact on each individual country in Europe. The final thing that made this source valuable to me is that the author introduces new points with a subtitle, and then summarizes his claim in a paragraph, and then proves his claim in the rest of the section. That method of organization made it really easy for me to find specific parts of the book.

Bishop, Paul A. "Martin Luther and the Protestant Reformation." *A History of Christian Doctrine* (1978): n. pag. Hillsborough Community College. Web. 13 July 2015.

This journal article describes Martin Luther's protestant reformation in 16th century Europe and the circumstances that allowed it to occur. I used this source to learn more about religion during the renaissance, and what inspired Martin Luther's revolution.

Bjork, Katharine. "Interview with Dr. Katharine Bjork, Professor of History at Hamline University." Telephone interview. 31 Mar. 2016.

Dr. Katharine Bjork specializes in the history of disease and global studies. We discussed primarily about how the disease spread and why Europe was so vulnerable.

"The Black Death: Horseman of the Apocalypse in the Fourteenth Century." *The Black Death*. Marquette University, n.d. Web. 11 July 2015.

This website relates the three devastating events during the 14th century: the Great Famine, the Black Death, and the Hundred Years' War, to the biblical Horsemen of the Apocalypse: Famine, Pestilence, War, and last but not least, Death. I used this source to better understand the circumstances of the Black Death and other events that occurred in the 14th century.

"The Black Death and Early Public Health Measures." *Science Museum: Exploring the History of Medicine*. London Science Museum, n.d. Web. 08 July 2015.

This website article from the London Science Museum explored the almost non-existent public health measures in the Middle Ages and how the effect the Black Death caused some of them to change or be created. I used this source to learn more about public health in the Middle Ages.

Bovey, Alixe. "Church in the Middle Ages: From Dedication to Dissent." *The Middle Ages*. The British Library, 2007. Web. 25 Jan. 2016.

This article describes the state of the church throughout the Middle Ages, and the church played a huge role in everyday life for Europeans and in European society. I used this source as reference when I wrote about the church's influence over Europe during the Middle Ages and plague period.

Bovey, Alixe. "Death and the Afterlife: How Dying Affected the Living." *The Middle Ages*. The British Library, 2006. Web. 25 Jan. 2016.

This article explains Europeans' views on death during the Middle Ages and how the Black Death and other events changed these views. I used this source to understand the mindset of Europeans during and after the Black Death pandemic.

Bovey, Alixe. "Medicine, Diagnosis and Treatment in the Middle Ages." *The Middle Ages*. The British Library, 2008. Web. 24 Jan. 2016.

This article describes the medical practices during the Middle Ages and the developments made. I used this article as a reference when I described the medical practices before and after the Black Death.

Bradley, Cameron. "Interview with Dr. Cameron Bradley, Assistant Professor of Medieval Studies at Macalester College." Personal interview. 5 Apr. 2016.

Dr. Cameron Bradley specializes in medieval European culture and society. We discussed primarily about the role trade played in the pandemic and the cultural effects on European society.

Broadberry, S. N., B. M. S. Campbell, Alexander Klein, Mark Overton, and Bas Van Leeuwen. *British Economic Growth, 1270-1870*. N.p.: n.p., n.d. Print.

This book explains British economic growth starting from the commercial revolution, explaining also about the development of mercantilism after the destruction of the feudal system. I used this source to learn about the dynamic changes economy underwent from before the pandemic to after.

Burckhardt, Jacob. *The Civilization of the Renaissance in Italy*. New York: Harper, 1958. Print.

This book explains why the Renaissance period can be considered a cultural revolution and describes the art, government and daily life during the Renaissance. I used this source to better understand the differences between Renaissance and medieval civilization. The author also describes how the Black Death, among the other crises of the 14th century set the stage for the Renaissance.

Campbell, Bruce M.S. *Before the Black Death: Studies in the 'Crisis' of the Early 14th Century*. N.p.: Manchester United, 1991. Print.

This book describes the natural disasters and famine in the west in the early 14th century. I used this source to gain a better understanding about Europe before the Black Death.

Cantor, Norman F. *In the Wake of the Plague: The Black Death and the World It Made*. New York: Free Press, 2001. Print.

This book provides evidence that the Black Death pandemic of 1347-1351 was a contributing factor to Europe's emergence into a new era, the renaissance. This book also contained an extensive bibliography that I used referenced for further research.

Choi, Charles Q. "Plague Helped Bring Down Roman Empire, Graveyard Suggests." *LiveScience*. TechMedia Network, 10 May 2013. Web. 29 Feb. 2016.

This article describes a study that analyzed the DNA of a Byzantine graveyard and found that the plague bacteria was the culprit to many sudden deaths during the Byzantine empire. I used this source to prove that the Plague of Justinian was caused by the same bacteria as the Black Death.

Cipolla, Carlo M. *Public Health and the Medical Profession in the Renaissance*. Cambridge: Cambridge UP, 1976. Print.

This book describes public health and medicine during the Renaissance and the origins of organized public health boards. I used this source as a reference when I wrote my paragraphs describing public health and the medical profession after the pandemic and how the pandemic influenced both.

Clapp, W. "Cultural Effects of The Black Plague." *Black Death*. University of Florida, n.d. Web. 08 July 2015.

This website describes how the Black Death pandemic influenced Europe's culture, religion, and economy. I used this source to gain a better understanding of the mindsets of people after the pandemic.

Conrad, Lawrence I. *The Western Medical Tradition: 800 B.C.-1800 A.D.* Cambridge, Eng.: Cambridge UP, 1995. Print.

This book describes the history of the practice of medicine in Europe. I used this book as a reference when I described medicine in Europe and how the Black Death and the church affected medical practices leading up to the Renaissance.

Damen, Mark. "Man and Disease: The Black Death." *USU 1320: History and Civilization*. Utah State University, 2013. Web. 08 July 2015.

This website describes the events leading up to the Black Death, the pandemic itself, and both the negative and positive effects of the plague. This was one of my initial resources, and I used it when I drafted my paper.

Damen, Mark. "The Black Death." *USU 1320: History and Civilization*. Utah State University, Logan, Utah. *USU 1320: History and Civilization*. Web.

This lecture given by professor Mark Damen describes the whole of the pandemic for over 40 minutes. He talks deeply about both the immediate and longer term impacts of the plague. I used this lecture to understand better every aspect of the pandemic and European life before and after.

DeWitte, Sharon N. "Selectivity of Black Death Mortality with Respect to Preexisting Health." Thesis. University of California, Berkeley, 2008. *Selectivity of Black Death Mortality with Respect to Preexisting Health*. The National Academy of Sciences of the USA, 2008. Web. 24 Jan. 2016.

This thesis is a very in depth study claiming that the Black Death was more selective in its mortality to those with pre existing health issues. This thesis also connects that the negative health effects like malnourishment and weakened immune systems that people encountered during the Great Famine in 1315 qualifies as a pre existing health issue. This thesis concludes that the those affected negatively by the famine were more likely to die due to the Black Death. I used this source as a reference to explain part of the reason why the Black Death was more lethal in this pandemic than in past, even though there were advancements since the previous pandemic.

Dobson, Mary J. "Plague." *Disease: The Extraordinary Stories behind History's Deadliest Killers*. London, Great Britain: Quercus, 2007. 8-19. Print.

This book contains information on a plethora of viral and bacterial diseases, including plague. It also contains a lot of visuals, like maps and paintings, and quotes for people in the 14th century. I used this source as the base of my research as it contained information on all the aspects of plague. It also has a section about the Plague of Justinian, and the subsequent outbreaks of plague in the centuries following the Black Death pandemic.

Dohar, William J. *The Black Death and Pastoral Leadership: The Diocese of Hereford in the Fourteenth Century*. Philadelphia: U of Pennsylvania, 1995. Print.

This study of the Diocese of Hereford in England describes how those religious personnel operated before, during, and after the pandemic, and how the Black Death affected that particular diocese. I used this source to better understand how church operations worked.

Dunn, John M. *Life During the Black Death*. San Diego: Lucent, 2000. Print.

This book describes life before, during, and after the pandemic, while going into deep detail about the causes and effects of the pandemic. I used this source as a reference when I wrote my paragraphs and I used the bibliography in this book to deepen my research.

Fulcher, James. *Capitalism: A Very Short Introduction*. Oxford: Oxford UP, 2004. Print.

This book describes the rise of capitalism, its introduction to European society, and how events in the Middle Ages, like the Black Death pandemic, allowed this social system to gain prominence. I used this source when I described the long term economic effects of the pandemic.

Frith, John. "History of Plague: The Three Great Pandemics." *Journal of Military and Veterans' Health* 20.2 (2012): n. pag. *Journal of Military and Veterans' Health*. Australasian Military Medicine Association, Apr. 2012. Web. 13 July 2015.

This journal article describes the three major plague pandemics, including the Black Death pandemic of 1347-1351. This article also describes the pandemic itself, and the social impacts the plague caused. I used this source to learn more about the Plague of Justinian and the 1347 pandemic.

Giller, Geoffrey. "Black Death Plague Strain Differs from That Which Killed Millions 800 Years Earlier." *Black Death Plague Strain Differs from That Which Killed Millions 800 Years Earlier*. Scientific American, 28 Jan. 2014. Web. 24 Jan. 2016.

This article describes the differences and similarities between the bacterium that caused the Plague of Justinian and the Black Death pandemic in Europe while also confirming that both pandemics were caused by the same bacterium. I used this source when I compared the Justinian pandemic and the European pandemic in 1347.

Grant, Edward. *The Foundations of Modern Science in the Middle Ages: Their Religious, Institutional, and Intellectual Contexts*. Cambridge: Cambridge UP, 1996. Print.

This book describes how the foundations for the scientific revolution were laid during the Middle Ages. I used this book when I described the state of the scientific community.

Haensch, Stephanie, Raffaella Bianucci, Michel Signoli, Minoarisoa Rajerison, Michael Schultz, Sacha Kacki, Marco Vermunt, Darlene A. Weston, Derek Hurst, Mark Achtman, Elisabeth Carniel, and Barbara Bramanti. "Distinct Clones of *Yersinia Pestis* Caused the Black Death." *PLoS Pathog PLoS Pathogens* 6.10 (2010): n. pag. Web

This scientific study confirms the fact that the Black Death was indeed caused by the bubonic plague bacterium. I used this source as evidence when I claim the Black Death was caused by plague bacterium.

Hagström, Martin. "The Dance of Death." *The Medieval Dance of Death*. N.p., n.d. Web.

This website is a gallery of the many artworks from the Dance of Death genre, a genre that the Black Death was a huge contributing factor to its beginning. I used the art as primary sources and their interpretations to understand the meaning of this new art genre.

Hamerow, Helena. "Trade, Exchange and Urbanization." *The Oxford Handbook of Anglo-Saxon Archaeology*. Ed. Sally Crawford. N.p.: Oxford UP, 2011. 503-14. Print.

This section of a book describes and provides archaeological evidence for the urbanization of England, which mirrors the urbanization of the West. I used this source to understand how urbanization increase in popularity following the commercial revolution.

Hanawalt, Barbara. *The Ties That Bound: Peasant Families in Medieval England*. New York: Oxford UP, 1986. Print.

This book describes how peasant families lived their daily lives and also discusses the impacts the Black Death brought forth. I used this source to better understand the conditions peasants lived in that allowed them to be highly susceptible to the bacteria and to understand the impact the Black Death had on peasants specifically.

Hannam, James. *God's Philosophers: How the Medieval World Laid the Foundations of Modern Science*. London: Icon, 2009. Print.

This book describes the changes in Medieval society that would eventually allow for the scientific revolution and today's modern science. I used this source as a reference when I described the sciences and research during the Middle Ages, before and after the Black Death.

Hannam, James. "Medieval Science, the Church and Universities." *Bede's Library*. Bede's Library, 2003. Web. 24 Jan. 2016.

This website article describes the effects the church held over science and universities: while not totally suffocating, the church allowed lots of scientific advances in the natural sciences, advancements in sciences that went against theology were stifled.

Herlihy, David, and Samuel K. Cohn. *The Black Death and the Transformation of the West*. Cambridge, Mass: Harvard University Press, 1997. Print.

This compilation of lectures by the author address the changes the Black Death brought economically and to the social order. These lectures also argue that the Black Death was a main cause of Europe's emergence into the Renaissance. I used this source to understand how the impacts of the plague lead to the Renaissance.

Hirst, L. F. "Conquest Of Plague." *The British Medical Journal* 2.4851 (1953): 1432-433. JSTOR. Web. 16 July 2015.

This journal entry describes the spread of the Black Death, from east Asia to Europe, as far west as England. I used this source to cross-reference with my other sources that described the spread of the plague, to make sure I had the correct information regarding the plague's spread.

"History of Plague." *Centers for Disease Control and Prevention*. Centers for Disease Control and Prevention, 18 Nov. 2014. Web. 08 July 2015.

This website written by the Centers for Disease Control and Prevention branch of the United States government describes briefly each pandemic caused by plague and what the consequences were. I used this website in my initial search for information about plague.

"History of Quarantine." *Quarantine and Isolation*. Centers for Disease Control and Prevention, 31 July 2014. Web. 1 Apr. 2016.

This web page describes the history of the quarantine, and how the first recorded uses of quarantine methods in response to a pandemic or epidemic were during and after the Black Death pandemic. This web site explains how coastal towns would not allow infected ship to enter the city for a 30-day period. I used this source to understand how the Black Death inspired exploration into new health protocols.

Huizinga, Johan. *Men and Ideas: History, the Middle Ages, the Renaissance : Essays*. New York: Meridian Books, 1959. Print.

This books is a compilation of essays describing the histories of the Middle Ages and the renaissance. I used this source to understand the ideas and thoughts of the Renaissance.

"Hundred Years War Chronology." *Hundred Years War Chronology*. United States Naval Academy, 2007. Web. 13 July 2015.

This website features a timeline of the Hundred Years' War of 1337 to 1453. I used this timeline to see where the Black Death pandemic fits in the Hundred Years' War.

Hus, John. "Piety 1270-1500." *Christianity 843-1648*. University of Toronto, n.d. Web. 1 Apr. 2016.

This website describes various piety ideals, but also discusses heavily the rise in popularity of the lay piety movement during the crises of the 14th century, including the Black Death. I used this sources to better understand the development of religious piety movements and how the lay piety movement gained popularity following the Black Death.

Jordan, William C. *The Great Famine: Northern Europe in the Early Fourteenth Century*. Princeton, NJ: Princeton UP, 1996. Web.

This book describes the Great Famine and its causes and effects. I used this book as a reference when writing about the events leading up to the pandemic.

Jupp, Kenneth. "European Feudalism from Its Emergence through Its Decline." *American Journal of Economics and Sociology* 59.5 (2000): 27-45. Print.

This article describes the social system of feudalism in Europe, the events that caused its decline, like the Black Death, and how early forms of capitalism became more common as feudalism declined. I used this article as a reference when I described the state of feudalism before the pandemic and the decline of feudalism.

Knox, E. L. "Crisis in the Late Medieval Church." *The Late Medieval Church*. Boise State University, n.d. Web. 12 Apr. 2016.

This website describes the crisis in the Church in the late medieval period. This crisis was brought forth due to the dramatic changes in the 14th century, among them, the Black Death.

Kreis, Steven. "In the Wake of the Black Death." *Lectures on Ancient and Medieval European History*. University of Missouri, Columbia, 2000. Web. 24 Jan. 2016.

This lecture describes the effects of the Black Death pandemic in 1347. I used this lecture to understand what the effects of the plague were.

Landreth, Harry, and David C. Colander. "History of Economic Thought." *The Journal of Economic Abstracts* 6.4 (1968): 842. JSTOR. Web.

This published journal describes the evolution of economic thought. I used this source to build a background knowledge about how economic thought has changed over the centuries.

Little, Lester K. *Plague and the End of Antiquity: The Pandemic of 541-750*. New York: Cambridge UP, 2007. Print.

This book discusses the Plague of Justinian and the impacts it had. I used this source to better understand the changes, especially economic, following the Plague of Justinian in the Byzantine Empire.

McNeill, William Hardy. *Plagues and People*. Oxford: B. Blackwell, 1977. Print.

This book discusses many plagues in history and the effects they had on the people during the time. I used this source as initial research.

Macdonald, Fiona. *The Plague and Medicine in the Middle Ages*. Milwaukee, WI: World Almanac Library, 2006. Print.

This book describes how medicine was before and after the Black Death pandemic. I used this source to learn more about medicine in the Middle Ages and how the Black Death affected it.

Mann, Michael E. "Little Ice Age." Thesis. University of Virginia, n.d. *Encyclopedia of Global Environmental Change* (2002): 504-09. Penn State Department of Meteorology. Web. 10 July 2015.

This thesis explains the slight temperature changes on Earth throughout the centuries, and explains the reason Europe had so many crop failures leading up to the Black Death. I used this source as evidence of the causes of the Great Famine.

Maugh, Thomas H. "An Empire's Epidemic." *An Empire's Epidemic*. Los Angeles Times, 6 May 2002. Web. 24 Jan. 2016.

This newspaper article describes the plague's spread during the Plague of Justinian. I used this source to cross reference when I described the spread of the plague during Justinian's plague.

Meiss, Millard. *Painting in Florence and Siena after the Black Death: The Arts, Religion and Society in the Mid-fourteenth Century*. New York: Harper & Row, 1964. Print.

This book describes the Black Death's effect on art, focusing on Italy; there were two major artistic impact presented by the Black Death: the cultural theme of death became common in art and the economic changes following the pandemic allowed a new economy for art to develop.

Mormando, Franco, and Thomas Worcester. *Piety and Plague: From Byzantium to the Baroque*. Kirksville, Mo: Truman State University Press, 2007. Print.

This book contains nine essays explore the religious and cultural responses to the plague. I used this source as a reference when drafting my paragraphs about religion and culture after the plague and to gain a better understanding of what death signified religiously.

Murdoch, Vaclav, and G S. Couse. *Essays on the Reconstruction of Medieval History*. Montreal: McGill-Queen's University Press, 1974. Print.

This collection of essays by various historians helped me gain background knowledge about the medieval era before the Black Death pandemic affected the cultures, economies, religions, and societies of Europe.

Nelson, Lynn Harry. "The Great Famine (1315-1317) and the Black Death (1346-1351)." *Lectures in Medieval History*. University of Kansas, 2001. Web. 10 July 2015.

This lecture briefly mentions many of the catastrophes that occurred in the 14th century, but primarily focuses on the Great Famine and the Black Death. I used this source to learn more about the Great Famine.

Nohl, Johannes. *The Black Death*. Trans. G. H. Clarke. London: Unwin, 1961. Print.

This book was an extremely helpful resource. It contained a lot of art from the time, and the titles of the pieces, which I wrote down so I could find them and add them to my website. It also contained a lot of references and quotes of contemporary authors from the time period, which I also used on my website.

North, Joshua. "The Death Toll of Justinian's Plague and Its Effects on the Byzantine Empire." *The Death Toll of Justinian's Plague and Its Effects on the Byzantine Empire*. Armstrong State University, 2014. Web. 24 Jan. 2016.

This website describes the effects of the Plague of Justinian death-, socially-, and economically-wise, and then compares the effects of the Plague of Justinian to the effects the Black Death pandemic. I used this source when I described the effects and containment of the plague of Justinian and how they compare to the Black Death.

Pappas, Lee. "World History from the Renaissance to Imperialism" *Fifteenth Century Europe: Social and Economic Changes*. Sam Houston State University, n.d. Web. 29 Feb. 2016.

This website describes the society and economy in Europe before the plague and how the plague affected those concepts in the 15th century. This source also explains very well the commercial and urban boom in the century before the plague. I used this source as a reference when writing about the commercial revolution and as a cross reference for my descriptions of the peasant uprisings.

Patrone, Michelle. "The Hundred Years' War and the Plague." *World History*. CDA World History, n.d. Web. 24 Jan. 2016.

This website describes the conditions of the war and how they allowed disease to spread, claiming that the war contributed to England's infection with the Black Death. I used this website to learn about the wartime conditions and referenced it when I described the Hundred Years' War.

Pennington. "The Black Death and its Religious Impact." Catholic University of America, Washington D.C. *The Black Death and its Religious Impact*. Web. 13 July 2015.

This website reports the various impacts the Black Death had on Christianity and how it was practiced in Europe. This source also describes how the plague, to an extent, contributed to Martin Luther's protestant reformation. I used this source to understand the intricate details about how death and religion were hand in hand and how plague changed their relationship.

Phyland, Peter. "The Church in Medieval Life." (n.d.): n. pag. Web. 24 Jan. 2016.

This website describes the Church and their beliefs during the medieval times. I used this source as a reference when I described the Church prior to the pandemic.

"The Plague." *Decameron Web*. Brown University, 18 Feb. 2010. Web. 13 July 2015.

This website contains descriptions of the plague, and many different authors' perspectives. I used this source to obtain quotes from witnesses of the plague, and to read about the causes and effects of the Black Death. I primarily used the primary documents they had, but I read their causes and effects so I could cross reference with other reports.

Platt, Colin. *King Death: The Black Death and Its Aftermath in Late-medieval England*. Toronto: U of Toronto, 1996. Print.

This book describes what it was like to live during the time and also contains an analysis of a historical survey conducted by the author of economic record during the time, which was very helpful in illustrating the economic impacts. I used this source to learn more about how people living during the time were affected.

Pollefeys, Patrick. "The Dance of Death." *La Mort Dans L'art*. N.p., 1996. Web. 13 July 2015.

This website is basically an online art gallery of the work created in the Middle Ages and renaissance periods. I used these works as primary sources and as examples of the Dance of Death genre that became common after the Black Death. I describe the genre based on the analyses provided by the author.

Quigley, William P. "Five Hundred Years of English Poor Laws, 1349-1834: Regulating the Working and Nonworking Poor." *University of Akron Law Review*. University of Akron, n.d. Web. 29 Feb. 2016.

This website describes the poor laws that were created as a response to the economic changes presented by the Black Death. I used this source to understand how governments responded to increasing peasant wage and also the longer term impact created by these poor laws.

Quiviger, François. *The Sensory World of Italian Renaissance Art*. London: Reaktion, 2010. Print.

This book contains images, descriptions, and analyzations of Renaissance art. Part of this book is dedicated to the Dance of Death, and describes briefly the Black Death's effects on the genre and in art. I used this source to understand art of the Renaissance and how the Black Death was related,

Reyerson, Kathryn. "Interview with Dr. Kathryn Reyerson, Professor of Medieval Studies at the University of Minnesota." Personal interview. 1 Apr. 2016.

Dr. Kathryn Reyerson specializes in social and economic history in medieval Europe. We discussed in depth about the economic systems before and after the plague and the art economy in the Renaissance.

Rogers, P. M. "The Waning of the Middle Ages." *Aspects of Western Civilization*. N.p.: Prentice Hall, 2000. 353-65. *Plague Readings*. University of Arizona. Web. 08 July 2015.

This website is a compilation of chronicles from the time of the Black Death. I used the chronicles on the website as primary sources for quotes and to help understand how witnesses saw the Black Death.

Sehdev, Paul S. "The Origin of Quarantine." *Clinical Infectious Diseases* 35.9 (2002): 1071-072. *JSTOR*. Web. 1 Apr. 2016.

This journal entry describes how the Black Death caused medieval governments to develop the public health protocol of quarantine. I used this source when I talked about the effects the plague had on public health and medicine.

Seiler, Tracy. "The Regression the Black Death Brought to Art." Thesis. LaGrange College, 2003. *Art and Design*. LaGrange College. Web.

This article describes how art prior to the pandemic was advancing artistically, but when the Black Death struck, art regressed when artists expressed the prevalent death. I used this source to understand how European artists were affected by the plague.

Senker, Cath. *The Black Death 1347-1350: The Plague Spreads across Europe*. Chicago, IL: Raintree, 2006. Print.

This book describes the how and where the plague spread during the initial pandemic. I used this source to cross reference with other sources to ensure my information was correct.

Shackelford, Jole. "Interview with Dr. Jole Shackelford, Assistant Professor of the History of Medicine at the University of Minnesota." Personal interview. 5 Apr. 2016.

Dr. Jole Shackelford specializes in early European science and medicine. We primarily discussed the scientific and medical aspects of the plague's' aftermath.

Steinhoff, Judith B. *Sienese Painting after the Black Death: Artistic Pluralism, Politics, and the New Art Market*. Cambridge: Cambridge UP, 2007. Print.

This book describes the background and context for changes in the art market after the Black Death that were extremely useful when I described the political and economical changes that occurred after the pandemic.

Squillace, Robert. "The Black Death: An Overview." New York University, n.d. Web. 13 July 2015.

This website was extremely helpful: it had ten primary sources linked to the website, it had a very meticulous timeline, and it describes both the plague's' origins and effects in great detail. I mostly used this source to gain access to the primary sources, but I also cross-referenced my gathered information with the information on the site to guarantee I had correct information, which I did.

Than, Ker. "Two of History's Deadliest Plagues Were Linked, With Implications for Another Outbreak." *National Geographic*. National Geographic Society, 31 Jan. 2014. Web. 24 Jan. 2016.

This article describes the relationship between the effects of the Plague of Justinian and the Black Death. I referenced this source often when drawing comparisons between the two pandemics.

Thijssen, Hans. "Condemnation of 1277." *Stanford Encyclopedia of Philosophy*. Stanford University, 30 Jan. 2003. Web. 24 Jan. 2016.

This online encyclopedia article contains information about the Condemnation of 1277 where many theses were banned by the church, many of which challenged theology. I used this source when describing the church's influence over science in the Middle Ages.

"Types of Plague." *National Institute of Allergy and Infectious Disease*. National Institute of Allergy and Infectious Disease, 3 Feb. 2015. Web. 24 Jan. 2016.

This website describes the symptoms and information about the three types of plague. I used this source when I wrote contextual information about the plague.

Vanneste, Sarah Frances. "The Black Death And The Future of Medicine." Thesis. Wayne State University, 2010. Web.

This thesis investigates the nature of the Black Death's effects on medicine, and investigates the one of the reasons why the Black Death tore apart Medieval Europe: the non-existent medical system.

"Was There a Little Ice Age and a Medieval Warm Period?" *The Scientific Basis*. Intergovernmental Panel on Climate Change, n.d. Web. 10 July 2015.

This article explains the patterns of Earth's natural climate changes throughout history and explores whether there was a warm period potentially causing famine throughout Europe leading up to the Black Death. I used this source to cross-reference with other sources that describe small changes in the climate in medieval Europe.

Wheelis, Mark. "Biological Warfare at the 1346 Siege of Kaffa." *Emerging Infectious Diseases* 8.9 (2002): 971-75. *Biological Warfare at the 1346 Siege of Kaffa*. Centers for Disease Control and Prevention, 16 July 2010. Web. 13 July 2015.

This journal entry describes how the Tartar Mongols used an early form of biological warfare at the Siege of Kaffa in 1346. I used this source to understand how plague was spread to Kaffa and subsequently the rest of Europe.

Wheelis, Mark. "Initial Spread of Plague in the 14th Century." *Emerging Infectious Diseases*. 9th ed. Vol. 8. Atlanta: Centers for Disease Control and Prevention, 2002. N. pag. *Biological Warfare at the 1346 Siege of Kaffa*. Web. 11 July 2015.

This map published by the Centers of Disease Control and Prevention shows the initial spread of the Black Death throughout Europe. I used this source to visually see the spread, which helped when I described it.

Whipps, Heather. "How the Wealthy Medici Changed the World." *LiveScience*. TechMedia Network, 04 May 2008. Web. 1 Apr. 2016.

This article discusses the history of wealth in the Medici family, citing the Black Death as a contributing factor towards their increase in wealth, and how they spent their money becoming patrons of great artists. I used this source to understand how the excess of wealth following the plague was spent on the arts.

Willard, Sandra. "DIFFERENCE BETWEEN MEDIEVAL AND RENAISSANCE PAINTING." *The Illusion of the Renaissance*. Yale-New Haven Teachers Institute, n.d. Web. 24 Jan. 2016

This website compares medieval and Renaissance painting and explains the meaning behind the art pieces. I used this source to understand how art was influenced by the disasters of the 14th century, including plague.

Williman, Daniel. *The Black Death: The Impact of the Fourteenth-Century Plague : Papers of the Eleventh Annual Conference of the Center for Medieval & Early Renaissance Studies*. Binghamton, N.Y: Center for Medieval & Early Renaissance Studies, 1982. Print.

This selection of conference papers explores various historian's perspective on what the economic and societal impacts of the Black Death were on Europe. I used these papers to gain a better understanding of the impacts of the plague.

Wood, James W, Rebecca J. Ferrell, and Sharon N. Dewitte-Avina. "The Temporal Dynamics of the Fourteenth-Century Black Death: New Evidence from English Ecclesiastical Records." *Human Biology*. 75.4 (2003): 427-448. Print.

This article analyzes church records from the 14th century, and compares the new data to previous recorded plague epidemics in attempt to prove the the Black Death may have spread faster than historians previously realized. I used this source to gain better understanding of how churches kept record and how the Black Death itself spread.

Woods, Kim, Carol M. Richardson, and Angeliki Lymberopoulou. *Viewing Renaissance Art*. New Haven: Yale UP, 2007. Print.

This book contains tons of art pictures and genres from the Renaissance. I used this source to understand how artists viewed the world during different time periods.

Woodville, Louisa. "The Black Death." *Late Gothic Art in Italy*. Khan Academy, 2015. Web. 08 July 2015.

This website contains brief descriptions of the events leading up the the Black Death, the spread of the disease, and the after effects of the pandemic. I primarily used this website to cross reference with other sources.

Wudka, Jose. "The Middle Ages." *The Middle Ages*. University of California, Riverside, 24 Sept. 1998. Web. 24 Jan. 2016.

This article describes the grip the church held over science and medicine in the century leading up the the Black Death. I used this source to learn more about the church and used it as a reference when writing about science and religion.

Ziegler, Philip. *The Black Death*. New York: John Day Co, 1969. Print.

This book was very helpful in my preliminary research; it contains six essays describing the Black Death from epidemiological perspective, as well as describing the death toll, and the medical responses. I used this book as a basis for beginning my research and to learn more about my topic.