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***Pestilence and Other Calamities in Civilizational Theory:  
Sorokin, McNeill, Diamond, and Beyond***

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*Everybody knows that pestilences have a way of recurring in the world; yet somehow we find it hard to believe in ones that crash down on our heads from a blue sky. —*  
Albert Camus

*Truth unfolds in time through a communal process. —* Carroll Quigley

*Those who make peaceful revolution impossible will make violent revolution inevitable. —* John F. Kennedy

### **Abstract**

This paper analyses the phenomenon of pestilence through paradigmatic and methodological lenses of several outstanding social scholars, including Pitirim A. Sorokin, William H. McNeill, and Jared M. Diamond. All three thinkers have advanced original, fundamental, and revolutionary paradigms regarding the profound role which infectious diseases played, are playing, and will continue to play in world history and culture. The phenomenon of pestilence is studied in the context of other major calamities. The relevant historic, as well as contemporary macro-level and long-term sociocultural research, is reviewed. The author advances a number of original concepts, as well as makes relevant projections into the future.

*Keywords:* calamity, “civilized diseases,” disease vector, endemic, epidemic, great sociocultural systems, great socioeconomic systems, infectious diseases, outbreak, pandemic, plague, pestilence, revolution, social change, zoonotic diseases

### **Pestilences Through the Ages**

One of the most powerful factors behind the turbulent trajectory of human evolution is the phenomenon of calamity. It played a colossal role in the evolution (and revolutions) of world history and culture. Countless lives have been ruthlessly affected and tragically lost during a perpetual struggle of humanity with calamities. Among the most devastating calamities are pestilence, wars, revolutions and invasions. These calamities are magnified by fires, famines, hurricanes, floods, earthquakes, tsunamis, volcanic eruptions, and environmental disasters.

As Pitirim A. Sorokin authoritatively demonstrates, calamities exert extremely powerful effects upon human minds, behavior, social organization, and cultural life. (Sorokin, 1968).

Among other existential threats, an enormous role is played by pestilences – a mysterious and much feared phenomenon. Often, they kill more people than even the deadliest of wars. During the American Civil War (1861-1865), for every soldier who perished from battle wounds, two died of infectious diseases such as dysentery, measles, small-pox, and malaria. The 1918 Influenza Pandemic alone slayed 50 million people worldwide – almost three times more than the 17 million, killed by violence during WWI.

The roots of infectious diseases go back a long way since they have been here for eons, even before humanity evolved.

William H. McNeill notes: “An amazing variety of animals suffer from one or another form of tuberculosis. Indeed, on chemical grounds it is commonly believed that the bacillus became parasitic when all life was still oceanic” (McNeill, 1976:332). Unsurprisingly, incurable pestilences have been a part of human history for millennia. They exerted a powerful impact on virtually every aspect of our lives, influenced outcomes of battles and wars, subdued proud rulers and ruined empires, formed our everyday habits and ways, and even dictated cultural trends and fashions.

Caused by draught, famine, cold, and other environmental changes, massive prehistoric migrations spread them in their wake. Epidemics accelerated further as societies became settled, more complex, and people started to congregate in ever more densely populated cities. The ancient Romans, Aztecs, and other empire builders created networks of paved roads for armies and messengers to move quickly around their realms. The ancient Egyptians, Chinese, and others introduced elaborate systems of navigational canals. Lakes, rivers, seas, and later, oceans, became humanity’s first superhighways.

Spurred by wars, technological advances, and proliferation of international trade, further massive movements followed, with armies, trade caravans, religious pilgrimages and crusades, as well as expeditions of “exploration and discovery” traveling far and wide.

One of the results of these advances has been the emergence of what William H. McNeill termed “civilized” diseases (McNeill, 1976:106), i.e. mostly incurable, and therefore mysterious epidemics, which periodically devastated lands and, especially, towns of ancient and medieval societies. Then, steamships and steam-driven locomotives announced with their powerful whistles and bells the arrival of an era of mass transportation.

Introduction of internal combustion, jet, and electric engines turbocharged the spread of infectious maladies even further. Now, with the advancement of cars and highways, commercial aviation and rapid land transit, any infectious disease is just one day away from anybody on the planet.

Through the ages, pestilences fell, as if from the sky, like bolts of lightning. Known as The Black Death (1346–1353), the bubonic plague epidemic was just the initial stage of The Second Plague Pandemic. With mortality rate of up to 70 percent, it exerted a tremendous toll on countless European towns and villages.

The great Italian writer and Renaissance humanist Giovanni Boccaccio (1313–1375) describes horrors caused by the bubonic killer in his beloved city of Florence in the year 1348:

There came a deadly pestilence. ...It ... showed its first signs in men and women alike by means of swellings either in the groin or under the armpits, some of which grew to the size of an ordinary apple and others to the size of an egg (more or less), and the people called them gavoccioli (buboes).

And from the two parts of the body already mentioned, in very little time, the said deadly gavoccioli began to spread indiscriminately over every part of the body; then, after this, the symptoms of the illness changed to black or livid spots appearing on the arms and thighs, and on every part of the body – sometimes there were large ones and other times a number of little ones scattered all around.

And just as the gavoccioli were originally, and still are, a very definite indication of impending death, in like manner these spots came to mean the same thing for whoever contracted them.” (Mark, 2020)

Following those initial signs, plague victims usually developed an acute fever and started vomiting blood. Most of them died two to seven days after the initial infection. (Stanska, 2020:5)

Another vicious killer was cholera, known also as the Blue Death. There were no less than seven cholera pandemics during the nineteenth and twentieth centuries. Between 1817 and the present there has been no fewer than seven cholera pandemics (Hays, 2005: V-VII). When untreated, the mortality rate of this ruthless malady was about fifty percent. William H. McNeill testifies:

The speed with which cholera killed was profoundly alarming, since perfectly healthy people could never feel safe from sudden death when the infection was anywhere near.

In addition, the symptoms were particularly horrible: radical dehydration meant that a victim shrank into a wizened caricature of his former self within a few hours, while ruptured capillaries discolored the skin, turning it black and blue. The effect was to make mortality uniquely visible: patterns of bodily decay were exacerbated and accelerated, as in a time-lapse motion picture, to remind all who saw it of death's ugly horror and utter inevitability. (McNeill, 1976:261)

A contemporary scholar adds:

Cholera is a horrible disease. At first, the symptoms produce no more than a surprised look as the bowels empty without any warning. Then surprise changes to agony as severe cramping pains begin. Copious quantities of liquid, resembling rice water, pour through the anus. As the pain intensifies, the only small relief is to draw oneself into a ball, chin held against the knees; the breath whistles softly between the teeth.

When death occurs at this stage, the body cannot be unrolled, and the victim has to be buried in the fetal position. Those who do not die from this first attack suffer a slow and painful decline. The cheeks become hollow, the body liquids surge more slowly but still remain beyond control, and the watery stools contain fragments of the intestinal lining. As the hours pass, the skin darkens, the eyes stare vacantly without comprehension, and then life ends. (Sherman, 2007:33)

For most of humanity's difficult story, the true causes of infectious diseases were not precisely known. The invisible is almost impossible to explain, and, therefore, it remains in a realm of the unknown or the unproven. Through the ages, God's punishment for sins has been invoked, miasma, i.e. foul smells or vapors, have been blamed, innocent cats and dogs exterminated, and inevitably, disenfranchised groups, such as the Gypsies, the Jews, the immigrants, and the poor were blamed, forcibly isolated, expelled, and prosecuted.

The process of discovering true causes of pestilences was gradual, onerous, as well as dangerous, and until very recently, the answers remained elusive. The first inklings came only in mid-nineteenth century, during the Third Cholera Pandemic (1839-1856). In 1854, a London physician named John Snow (1813–1858) proposed that cholera was disseminated by the way of being located next to an open sewer in Soho. Dr. Snow's discovery led to the development of water and waste sanitation systems, first in London, and then around the world, and he is considered one of the founders of the science of epidemiology.

It is now common knowledge that most infectious diseases are caused by certain microorganisms, such as pathogenic bacteria and viruses.

Introduction of optical microscopes during the eighteenth and nineteenth centuries into medical research led to establishment of microbiology and bacteriology as scientific disciplines. Even then, only the largest of the pathogenic microorganisms could be studied, such as, for example, bacteria.

As to viruses, they are on average 100 times smaller than bacteria, and their discovery, as well as inauguration of the field of virology, had to wait until the invention of the electron microscope in 1930s. By mid-20th century a significant number of epidemic diseases caused by these and other microbes have been tamed, and a few of them altogether eradicated.

The spread of infectious diseases is at times facilitated by disease vectors, i.e., agents that carry and transmit infectious pathogens (fleas, ticks, mosquitos, etc.). Zoonotic diseases are the ones that are transmissible from an animal, often an insect, to a human. An epidemic is a situation in which a disease affects a large number of people within a community, population, or region.

When a disease becomes a permanent feature in the given circumstances, it is known as endemic. An outbreak is a sudden surge of infection, for example, an increase in the number of endemic cases. If it is not quickly controlled, an outbreak may become an epidemic. Virgin soil epidemic defines a situation in which the affected population has not been previously exposed to the disease and, therefore, has no immunological defenses against it.

Especially devastating are pandemics – epidemics that may spread over multiple regions, countries, or continents.

### **Reflection of Pestilences in Literature and Visual Art**

Through the centuries, a dramatic struggle with the horrifying multi-headed monster pestilence continued unabated. Due to their uncanny ability to extract a dreadful toll on humanity, pestilences found an abundant expression in important religious and historic sources, as well as in significant works of literature and visual art.

We need go no further than John of Patmos's (circa 6 CE ~100 CE) final book of the *New Testament* entitled the *Book of Revelation*. It features four supernatural beings charging forth on white, red, black, and pale horses. (Holy Bible, 1989:175). Those riders are often seen as symbolizing Pestilence, War, Famine, and Death. According to the Christian apocalyptic teachings, the Four Horsemen are to set a divine apocalypse upon the world as harbingers of the Last Judgment. In fact, those awesome figures make their appearance even earlier, for example, in the Old Testament's *Book of Zechariah* (Holy Bible, 1989:585-591) and in the Book of Ezekiel (Holy Bible, 1989:515-552), the roots of which go as far back as the sixth century BCE.

Plagues have served as an ominous background in classic books by Giovanni Boccaccio (1313-1375), Geoffrey Chaucer (c. 1340s–1400), Daniel Defoe (1660–1731), Mary Wollstonecraft Shelley (1797–1851), and Edgar Allan Poe (1809–1849).

Tuberculosis made its menacing appearance in major works of Charles Dickens (1812-1870), Ivan Turgenev (1818-1883), Fyodor Dostoevsky (1821–1881), and Erich Maria Remarque (1898-1970). Albert Camus (1913-1960) situated his novel *The Plague* (1947) in the French Algerian city of Oran in the 1940s, even though it was, conceivably, based on tragic events of the Sixth Cholera Pandemic (1899-1923).

The same disease hovers in the background of the novel *Love in the Time of Cholera* (1985) by the Colombian writer Gabriel Garcia Marquez (1927–2014). Since his story unfolds approximately between 1880 and the early 1930s, it most probably reflects on either a Fifth Cholera Pandemic (1881-1896) or a Sixth Cholera Pandemic (1899-1923).

Various incurable afflictions reflected, at times right before succumbing to them, such prominent artists as Titian (c. 1488/90[1]–1576), Pieter Bruegel the Elder (c. 1525–1530–1569), Paulus Furst of Nuremberg (1608 - 1666), Pavel A. Fedotov (1815-1852), Arnold Böcklin (1827–1901), Egon Schiele (1890–1918), and Edvard Munch (1863–1944).

Set in Sweden during the Black Death Epidemic (1346-1353), Ingmar Bergman's (1918–2007) classic movie *The Seventh Seal* is a parable about a medieval knight and his imagined interaction with a personification of Death. Based on Michael M. Crichton's (1942–2008) novel (1969) is the eponymic film *The Andromeda Strain* (1971), as well as more recent movies *Outbreak* (1995) and *Contagion* (2011); these are just a few examples of Hollywood “science fiction” interpretations of epidemics and pandemics.

### **Pestilences as a Double-Edged Sword of Destruction and Change**

Pestilences, very often in fatal combination with other calamities, complicate or even outright disrupt social and cultural activities, trade, business, and other conditions and circumstances of normal life. Before radically decimating Europe in 1346-1353, the bubonic plague, in conjunction with Mongol invasions, ravaged medieval China on an apocalyptic scale. McNeill comments:

The combination of war and pestilence wreaked havoc on China's population. The best estimates show a decrease from 123 million about 1200 CE (before the Mongol invasions began) to a mere 65 million in 1393, a generation after the final expulsion of the Mongols from China.

Even Mongol ferocity cannot account for such a drastic decrease. Disease assuredly played a big part in cutting Chinese numbers in half. The bubonic plague, recurring after its initial ravages at relatively frequent intervals, just as in Europe, is by all odds the most likely candidate for such a role. (McNeill, 1976: 163)

In much more extreme cases, infectious diseases lead to a complete downfall of societies, empires, and civilizations. For example, the transfer of infectious diseases to the Americas and other regions of the worlds, for example, Oceania, during the so-called Age of Discovery (15-17<sup>th</sup> centuries), decimated most of the local populations, often irreversibly so. (McNeill, 1976:199-234; Hays, 2005:297-301)

As late as in the nineteenth century things were not much different, even in the most advanced industrial countries and even among the powerful, rich, and famous. Queen Victoria's husband Prince Albert (1819–1861) died at the age of 42 from what appears to have been typhoid. The Scottish novelist Sir Walter Scott (1771–1832), the English Romantic poet John Keats (1795–1821), and the English poet and revolutionary Lord Byron (1788–1824) all perished from the then untreatable tuberculosis.

It was even worse elsewhere. A shaken British diplomat testified about his experiences in the Brazilian city of Recife in the year 1856, during the *Third Cholera Pandemic* (1839-1856):

The town has had all the appearance of a city of the plague, business is at standstill, the streets deserted, tar barrels burning in them by day, and penitential processions by night, which carried the mind back to the middle ages, men and women with torches, covered with sheets and barefooted, groaning, weeping, praying, chanting, and scourging; the dead carts galloping to and fro with six or eight bodies, by day and night. (Hays, 2005: 231)

That is why outbreaks and even some epidemics of infectious diseases have been at times under-reported, covered up, as well as outright concealed by the authorities. In his (contemporary but published much later) novel entitled "Death in Venice," Thomas Mann (1875–1955) reflects on such a "secret" outbreak, presently known as the Cholera Epidemic in Naples (1910-1911).

Obsessed with obtaining reliable news about the status and progress of the disease, he went to the city's cafés and plowed through all the German newspapers, which had been missing from the hotel lobby during the past few days. (Hays, 2005:373)

Later research revealed that the true Italian toll in 1911 was about 16,000, and in Naples, a least 2,600. Due to complicated political and business circumstances (Naples was the main port of departure for the massive immigration flow at the time), this epidemic completely "disappeared" from almost all official, medical, and mass media records.

Multiple levels of government (municipal and royal in Italy) in three countries (Italy itself, Argentina, and the US) were to different degrees involved in the cover-up. (Hays, 2005:369-375)

Exactly 110 years later, those catastrophic blunders have been repeated in Italy and elsewhere in the world during the coronavirus Covid-19 pandemic. For example, the Italian city of Bergamo was affected by coronavirus on a massive scale and became the country's epicenter for the disease. For various bureaucratic reasons, the areas that should have been locked down were not, and that augmented the spread of the virus. (Castelfranco, 2020)

Another, more benign aspect of the phenomenon of pestilence is that it is a very powerful factor of social and cultural change. The Black Death (1346–1353) and the subsequent waves of The Second Plague Pandemic (1346-1844) completely altered the European social structure, as well as the belief systems of many of those who survived it. (Mark, 2020). McNeill elucidates:

“... the inadequacy of established ecclesiastical rituals and administrative measures to cope with the unexampled emergency of plague had pervasively unsettling effects. In the fourteenth century, many priests and monks died; often their successors were less well trained and faced more quizzical if not openly antagonistic flocks. God's justice seemed difficult to find in the way plague spared some, killed others; and the regular administration of God's grace through the sacraments (even when consecrated priests remained available) was an entirely inadequate psychological counterpoise to the statistical vagaries of lethal infection and sudden death. Anti-clericalism was of course not new in Christian Europe; after 1346, however, it became more open and widespread, and provided one of the elements contributing to Luther's later success.” (McNeill, 1976: 184-185)

In addition, it is a well-known fact that in the wake of the Black Death epidemic European societies witnessed remarkable economic, scientific, and technological advances, as well as a virtual explosion of inventiveness and entrepreneurship. J.N. Hays notes:

The new supply-demand situation of labor also encouraged greater efficiency of production. The pre-Black Death economy had little incentive to save on labor costs; surplus population made labor cheap. The Black Death – and the continuing demographic pressure of the ongoing pandemic – coincided with a remarkable period of technological innovation, which likely was *not* coincidental. (Hays 2005: 49)

It was during The Second Plague Pandemic (1346-1844) that the Italian perfume maker Giovanni Maria Farina (1685–1766) introduced in 1709 his famous Eau de Cologne. The perfume with sweet yet refreshing and stimulating aroma was concocted according to a highly guarded formula from the aromatic essences of oranges, lemons, grapefruits, bergamot, flowers, and lavender. Originally very expensive, it was believed to have the power to ward off the bubonic nemesis.

An even more tantalizing issue is the relation between the plague and the creative genius of Isaac Newton (1642 –1726/27). Between April 1665 and January 1666, the city of London suffered a major epidemic of bubonic plague, which killed about 100,000 people, almost a quarter of London's population, in just eighteen months. The Great Plague of London (1665-1666) was even described by Daniel Defoe (1660–1731) in a novel entitled *A Journal of the Plague Year* (1722). This was the last major outbreak of the Second Plague Pandemic (1346-1844), by then receding in Europe. With the University of Cambridge closed because of the epidemic, Newton returned to his home in rural Lincolnshire between June 1665 and April 1667. During that period, he developed calculus and realized that white light contained the colors of the spectrum. Newton also conceived of his famous theory of universal gravitation then. (Hays 2005: 129)

Thus, pestilences, as well as other calamities, while viciously attacking society on a “physical” or “biological” level, are also capable of exerting profound social and cultural changes. Moreover, their true significance in history, as well as in social and cultural life of multiple societies was at times hidden behind euphemistic formulations convenient for the elites. Gradually, a number of prominent historians and social scholars began a process of uncovering the true significance and the enormous role of epidemics and pandemics in human history.

### **Pitirim A. Sorokin: Apocalypse Explained**

Russia is no stranger to calamities and hardship. In fact, some of the greatest Russian literary works reflect or persistently dwell on various cataclysms. The Russian historian Nikolay M. Karamzin (1766-1826) lived during the Napoleonic Wars, and the scholar's unique library perished together with his apartment during the Fire of Moscow in 1812. Apparently, the historian's labors on his 12-volume *History of the Russian State* were in no small measure motivated by the forthcoming threat of the Napoleon's almost million-strong military juggernaut. (Smirnov, 2014:5-6)

In *War and Peace* Leo Tolstoy (1828-1910) presents nothing less than his own deterministic philosophy of history using the Napoleonic Wars as a dramatic background (Tolstoy, 1960:588-625). Yet another type of calamity, revolution, continues to be an endemic feature of Russian historical and cultural landscape.

In 1993, Daniel Yergin and Thane Gustafson published a book on Russia's fate after the collapse of the Soviet Union. They started it with the words: "The twentieth century closes as it began, with revolution in Russia ..." (Yergin et al., 1995:3)

Sorokin hails from the historic land of Komi people, located north of the 60th parallel. The climate conditions of this unforgiving but beautiful region approximate those of Alaska, northern Canada, and even Greenland. Having been born in a Russian-Komi family of an impoverished itinerant artist, the precocious youth overcame enormous obstacles to become Russia's "second Lomonosov."

In just a few years after arriving penniless at the age of 18 in Saint-Petersburg, the young genius became not only a prominent scholar and public figure (sociologist, lawyer, ethnologist, and journalist), but also literally a "second person" in the Provisional Government (March-July, 1917) of a gigantic state occupying one sixth of the globe. (Alalykin-Izvekov, 2017:21)

After the October Revolution of 1917 the already widely known scholar and popular political leader joined the anti-Bolshevik insurrection. On November 30, 1918, he was thrown into jail in the Russian far-northern town of Ustyug.

There, he almost drank the bitter cup of a political prisoner sentenced to death. If not execution, then certain death from typhus awaited him in the overcrowded and pestilence-infested jail (Sorokin, 1963:141-175). This vicious disease killed millions during World War I (McNeill, 1976:220) and was particularly fatal during the Russian Revolution (1917) and the Russian Civil War (1917-1923).

However, even in these harrowing conditions, the scholar soberly contemplated an omnipresent toll of calamities on humanity. In words worthy of the pen of Nicolas de Condorcet, he noted: "The revolution, this voracious monster, cannot live without human blood" (Alalykin-Izvekov, 2017: 40). With yet more ordeals to follow, the American sociologist Michel P. Richard keenly summarized the scholar's unique career by saying: "The amazing thing about Sorokin's life is that he managed to survive it" (Sorokin, 1991:V).

The American sociologist and Sorokin biographer Barry Johnston notes: "The scientific value of the work is that it is a factual, analytically driven theory of catastrophic social change. .... In it, Sorokin explores how hunger, epidemic and war affect the mind and lead to regression of social behavior and social organization" (Johnston, 1995:168-169).

Not surprisingly, Sorokin deeply investigated the phenomena of revolution, hunger, pestilence, and other calamities in such works as *Hunger as a Factor* (1922), *Sociology of the Revolution* (1925), *Modern Historical and Social Philosophies* (1950), *Social and Cultural Dynamics* (1937-41), *Society, Culture, Personality* (1947), and *Sociological Theories of Today* (1966). Especially significant in this regard was Sorokin's classic monograph *Man and Society in Calamity* (1942).

With his unique talent and panoramic scholarly vision, Sorokin investigated the phenomenon of pestilence as a complicated occurrence closely connected with other calamities. He was one of the first social scholars to recognize fully that calamities may also inspire profound thought, boost creativity, promote inventions and discoveries, and even evoke in a significant number of people their best qualities. Sorokin reminded us that some of the greatest achievements of human spirit have been created during times of change and crisis.

The scholar wrote in his monograph *Modern Historical and Social Philosophies* (1950):

Even in normal times, cogitation about man's destiny – on the whence and whither, the how and why, of a given society – is now and then carried on by at least a few thinkers or scholars. In times of serious crisis these problems suddenly assume exceptional importance, theoretical as well as practical; for thinkers as well as for plain folk. An enormous part of the population finds itself uprooted, ruined, mutilated, and annihilated by the crisis. People's routine of life is entirely upset; their habitual adjustments are broken; and large groups of human beings are turned into a flotsam of displaced and disadjusted persons. ...

This means that in times of crisis one should expect an upsurge of cogitation on and study of the how and why, the whence and whither, of man, society, and humanity. Most of the significant "philosophies of history," most of the "intelligible interpretations of historical events," and most of the important generalizations about sociocultural processes have indeed appeared either in the periods of serious crisis, catastrophe, and transitional disintegration, or immediately before and after such periods (Sorokin, *Modern Historical and Social Philosophies*, 1963:3-4).

Later, Thomas S. Kuhn would agree by saying "... crises are a necessary precondition for the emergence of novel theories" (Kuhn, 1970:77). Not surprisingly, as to the way out of pestilences, Sorokin, looked far ahead of his times. A true humanist, he wrote:

... side by side with the biological and medical questions, the problem of alleviation and elimination of epidemics has its no less important social and cultural aspects. A wise society, desirous of being free from pestilence, would eliminate not only its biological roots but also the social causes of epidemics; famine, ignorance, revolution, and war.

Such a goal requires a society supremely well integrated in scientific, religious, moral and social respects. Unfortunately, many societies have been, are and probably will be lacking in this integration and wisdom. Hence, they have been paying the penalty of the visitation of pestilence with its death toll and will probably so continue (Sorokin, 1968: 301).

Thus, by expertly studying the effects of war, revolution, famine and pestilence upon human minds, behavior, social organization and cultural life, Pitirim A. Sorokin confidently set forth the foundation for a rigorous scientific study of calamities.

### **William H. McNeill's tour de force in *Plagues and People*.**

William H. McNeill was a friend, collaborator and biographer of one of the founders of the field of the comparative study of civilizations, Arnold J. Toynbee—the man who, according to Time magazine (circa 1947), “found history Ptolemaic and left it Copernican.” This significant connection may explain the profound depth and astounding scope of McNeill’s writings. In his compact, competent and elegantly written volume *Plagues and Peoples* (1976), he described a dramatic struggle of humans with infectious diseases through the ages. The book is highly interdisciplinary, yet fundamental in character.

McNeill methodically followed the development of what he justifiably called civilized diseases through eons of time and among peoples of a breathtaking diversity of regions.

The book bursts with insightful observations, original thoughts and profound scholarly judgments. He suggests, for example, that the Indian castes originated, at least in part, due to the role of infectious diseases (McNeill, 1976:93-94). Epidemics had a major impact on the spread of Christianity, as well as on the fall of the Western Roman Empire (McNeill, 1976:121-123). A subsequent shift of civilization away from the Mediterranean toward the cooler climes of Northern Europe happened not in small part due to the death-carrying breadth of epidemics (McNeill, 1976: 127-128).

Following in the footsteps of Sorokin’s earlier observations, McNeill rightfully noted that epidemic diseases usually arrive amongst other calamities, such as invasions, uprisings, wars, as well as internal conflicts (McNeill, 1976:118-20).

One of the book's most fundamental revelations is a realization of the effects of cataclysmic epidemiological catastrophes which transpired in the Americas and elsewhere in the world in the sixteenth and seventeenth centuries CE. Multiple societies, empires and civilizations collapsed in a large measure due to a combined onslaught of Eurasian diseases such as plague, malaria, typhus, smallpox, yellow fever, and measles (McNeill, 1976:181-182).

According to scholarly estimates, the astounding total of 100 million perished due to the transfer of then incurable infectious diseases to the Americas by the invading European colonizers (McNeill, 1976:203). Before McNeill's groundbreaking book, these apocalyptic calamities were conveniently obscured by various euphemistic and "umbrella" terms like *The Columbian Exchange* (Hays, 2005:79), *The Seeds of Change* (Hays, 2005:79) and *The Virgin Soil Epidemics* (Hays, 2005:X).

So, he shares with us his initial insight:

... as part of my self-education for writing *The Rise of the West: A History of the Human Community*, I was reading about the Spanish conquest of Mexico. As everyone knows, Hernando Cortez, starting off with fewer than six hundred men, conquered the Aztec empire, whose subjects numbered millions. How could such a tiny handful prevail? How indeed? All the familiar explanations seemed inadequate. ... A casual remark in one of the accounts of Cortez's conquest ... suggested an answer to such questions, and my new hypothesis gathered plausibility and significance as I mulled it over and reflected on its implications afterwards.

For on the night when the Aztecs drove Cortez and his men out of Mexico City,<sup>1</sup> killing many of them, an epidemic of smallpox was raging in the city (McNeill, 1976:1-2).

Therefore, systematically building on the foundation laid by Pitirim A. Sorokin, McNeill continued a thorough, rigorously scientific study of profound and perennial effects of calamities and pestilences on humanity's arduous story.

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<sup>1</sup> The dominant city of the Aztec empire was known as the city-state of Tenochtitlan. Contemporary Mexico City is essentially located where Tenochtitlan formerly stood. (Author's note).

### ***Guns, Germs and Steel* by Jared M. Diamond**

Covering a span of 13,000 years, Jared M. Diamond's book *Guns, Germs, and Steel: The Fates of Human Societies* reveals the main forces behind the eventful story of humanity on all inhabited continents and even on distant islands. As it is clear from the title of the book, he identifies as such three major factors — advanced weapons, infectious diseases, and cutting-edge technologies.

Initially, he focuses on reasons why Eurasians found themselves in an auspicious position compared with societies in other regions of the world. For example, there were mostly Eurasian species of wild plants and animals that proved suitable for domestication, while other lands had few or even none. The settled agricultural life and food production based on those domesticates led to the development of dense and stratified human populations, writing and centralized political organizations.

This domestication of certain animal species (i.e., livestock, beasts of burden and pets) brought humans into close contact with them, creating favorable conditions for zoonotic infectious diseases (i.e., transmissible between animals and humans). In chapter eleven, entitled *Lethal Gift of Livestock: The Evolution of Germs*, he writes:

The major killers of humanity throughout our recent history — smallpox, flu, tuberculosis, malaria, plague, measles, and cholera — are infectious diseases that evolved from diseases of animals, even though most of the microbes responsible for our own epidemic illnesses are paradoxically now almost confined to humans. Because diseases have been the biggest killers of people, they have also been decisive shapers of history. Until World War II, more victims of war died of war-borne microbes than of battle wounds. All those military histories glorifying great generals oversimplify the ego-deflating truth: the winners of past wars were not always the armies with the best generals and weapons but were often merely those bearing the nastiest germs to transmit to their enemies. (Diamond, 1997:196-197)

While brilliantly elaborating on the Sorokin's and McNeill's insights, Diamond also points to much needed solutions to the exponentially mounting problems of a globalizing humanity, for example, the alleviation of deleterious effects of *infection diseases* by restoration of the historically evolved natural habitats.

### **Great Cultural Systems vs “Killer Apps”**

The British and American historian Niall C. Ferguson confronts the reader of his recent book *Civilization: The West and the Rest* with a seemingly perplexing question.

How did it happen that within a span of just five centuries, a dozen countries of a particular civilizational identity gained control of three fifths of mankind and of four fifths of the world's economy and wealth? As an answer, the thinker invokes six "Killer Apps"—Competition, Science, Property, Modern Medicine, Consumerism, and Work Ethic (Ferguson, 2011:13).

In fact, the idea appears to be not as groundbreaking as it seems. Back in 1947, in his *magnum opus* entitled *Society, Culture, and Personality* (1947), Pitirim A. Sorokin introduced a notion of the "Great Cultural Systems." He wrote about a direct correlation between the universal significance of such systems and their relative lifespans:

When we turn to such systems as a given language, a major religion, notable philosophical, ethical, juridical, aesthetic, scientific, technological, economic, and political systems, we find that most of them endure for decades or centuries and that the greatest of them function for a thousand or more years, fluctuating qualitatively and quantitatively, but maintaining an uninterrupted existence. ... The decisive factor is the greatness of the system itself. The more universal, the more essential to the survival and creativeness of humanity the meanings, values, and norms of the system are, the longer its span of life is likely to be. (Sorokin, 1947 :707-709)

This, of course, means, that while societies themselves may collapse and disappear, their *Great Cultural Systems* often continue to exist.

Sorokin's contemporary Arnold J. Toynbee (both scholars were born in 1889) proposed the concepts of "Challenge and Response" to explain how civilizations rise and fall. By "challenge" Toynbee means an unpredictable factor that presents a threat to an organized group of people. A challenge may arise as a result of many circumstances — for example, overpopulation, resources depletion, or a climate change. Response is an action taken by the group to deal with the new situation. According to Toynbee, an adequate response initiated by the group's creative elite would ensure its survival and prosperity (Toynbee, 1947:60-79).

In his book *The Hero with a Thousand Faces* (1949), the American mythologist Joseph J. Campbell suggests a notion of the "Ultimate Boons." The scholar describes the concept as follows:

A hero ventures forth from the world of common day into a region of supernatural wonder; fabulous forces are there encountered, and a decisive victory is won; the hero comes back from this mysterious adventure with the power to bestow boons on his fellow man. (Campbell 1949: 23)

The ultimate boon may be a limitless bounty, indestructible life, but also valuable experience, profound insight or revelation, innovation or discovery, and so forth.

Upon return from his mythical journey, the hero shares those hard-earned ultimate boons with his people.

This crucial action usually serves a purpose of saving a society (civilization) from troubles and ensures its further existence and prosperity.

In the 1960s, the American historian Carroll Quigley developed the concept of Instrument of Expansion. According to this thinker, those provide civilizations with a mechanism for dynamism and growth (Quigley, 1979:132-145). For example, for the Classical civilization, which occupied the shores of the Mediterranean Sea from 950 BCE to 550 CE, the Instrument of Expansion was the institution of slavery (Quigley, 1979:269-270). For the first stage of expansion of Western civilization (970-1270 CE), the Instrument of Expansion was the institution of feudalism (Quigley, 1979:358); for the second stage (1440-end of the seventeenth century), it was commercial capitalism, and so forth (Quigley, 1979:367-369).

Essentially, Jarred M. Diamond's concepts of *Guns, Germs, and Steel* (Diamond, 1997) are an elaboration on the same eternal topic. The scholar writes in his 2003 afterword to his famous book: "... the themes of GGS seem to me to be not only a driving force in the ancient world but also a ripe area for study in the modern world" (Diamond, 1997:440).

In a less-well-known quote, the American political scientist Samuel P. Huntington elevated his famous concept of the *Clash of Civilizations* to the level of universal values:

In the greater clash, the global "real clash," between Civilization and barbarism, the world's greatest civilizations, with their rich accomplishments in religion, art, literature, philosophy, science, technology, morality, and compassion, will ... hang together or hang separately (Huntington, 1997:321).

Altogether, what Pitirim A. Sorokin, Arnold J. Toynbee, Joseph J. Campbell, Carrol Quigley, Jarred M. Diamond, Samuel P. Huntington, Niall C. Ferguson, as well as many other scholars have proposed is something rather similar. All those concepts reflect on real or imaginary insights, systems, concepts, ideas, revelations, instruments, and vehicles that have a potential capacity to benefit humanity.

However, who exactly did they benefit so far? Apparently, as Ferguson convincingly demonstrates, not everybody. Some, if not most of those Instruments of Expansion and Killer Apps have been used in an expansionist, conquering, and/or subjugating mode.

Yet, is not humanity presently in a desperate need of the new *Great Sociocultural Systems* and the new *Great Socioeconomic Systems*, which would provide it with advanced tools, instruments, and vehicles of overcoming or, at least, alleviating such existential threats as pestilences and other calamities? In order to accomplish that, they ought to be based on the universal values, rights, and human needs of a rapidly globalizing humanity, not on an outdated set of values, rights, and needs of one or several elite groups. Reflecting universal aspirations of humankind, those powerful new systems would encompass insights, discoveries, innovations, and creative breakthroughs in medicine and public health, science and technology, literature and art, politics and management, education and philosophy, law and religion in a caliber range of Greek Philosophy, Roman Law, Renaissance Humanism, Enlightenment Ideas, European Rationalism, Romanticism, and Russian Classical Literature and Musical Art.

For instance, in the medical and public health fields, those great new systems are needed in a caliber range of such previous discoveries and innovations as vaccination (1796), anesthesia (1846), pasteurization (1863), water sanitation and waste disposal systems (mid-nineteenth century), penicillin (1928), and the like.

One of examples of such new systems appears to be a specific type of gene editing, known as *CRISPR Technology*. As the term implies, it can be a powerful tool for “editing” genomes, which can help to destroy targeted infectious pathogens. In fact, researchers sometimes turn the pathogenic microorganisms’ reproductive mechanisms against them. (Doudna, 2020; Vidyasagar, 2018)

Obviously, the problem of epidemics and pandemics can be solved only in conjunction with the resolution of multiple pressing issues such as overcrowding, social, ethnic, and racial injustice, lack of resources, development of safe water and sanitation systems, and equal access to medical care.

The alternatives to speedily devising and urgently implementing solutions based on universal values, rights, and human needs and new *Great Sociocultural and Socioeconomic Systems* may be quite grim. A number of contemporary thinkers even foresee a collapse of contemporary civilization from such calamities as nuclear war, diseases, resource depletion, economic decline, ecological crisis, or sociopolitical disintegration (Tainter, 1988:3).

### **Case Study: *The Coronavirus Pandemic***

Being an ultimate expression of the massive “civilized” infectious diseases, pandemics are occurrences of astounding scale, complexity, and significance.

The grim roster of these monsters includes at minimum a dozen planet-encompassing pandemics: two influenza pandemics (1889-1890; 1918-1919), three plague pandemics (541-747; 1346-1844; 1894-?), and seven cholera pandemics (1817-1824; 1827-1835; 1839-1856; 1863-1875; 1881-1896; 1899-1923; 1961-Present), as well the inexorably unfolding AIDS pandemic (1981-Present) (Hays, 2005).

Starting in 2019, the world saw yet another pandemic unleashing its terrific force on human communities, cities and societies around the planet.

Sadly, the onset of the coronavirus Covid-19 was met with a sense of condescending superiority by some governing elites in the US, as well as in a number of other Western countries. However, not for long. The pandemic tore through the social, economic and cultural fabric of Western society, as well as other societies, like a massive, vicious and prolonged biological warfare attack.

As of the end of June 2020, over ten million cases of COVID-19 had been reported in more than 188 countries, resulting in more than 500,000 deaths. The United States experienced the highest death toll so far, accounting for more than a quarter of the global total. (Hollingsworth, J. et al., 2020)

As we have already seen from the example of the cholera epidemic in Naples (1910-1911), as well as from the coronavirus pandemic-related human catastrophe in Bergamo (2020), there is nothing new about the government-level arrogance, ignorance and incompetency. Pitirim A. Sorokin prophetically wrote in 1959, right before the impending calamity of the Cuban Missile Crisis (1962):

“Thus, the question *Quis custodiet ipsos custodes* (Who shall guard the guardians?) acquires a truly fateful importance. ... the powerful ruling groups have been rather poor guardians of peace and moral order in the human universe. A large percentage of rulers have had either mediocre or low intelligence; many have also suffered from split personality, compulsive-obsessive complexes, aggressiveness, manias, paranoia, schizophrenia and other mental disorders. Morally, the ruling groups have been more criminal than the ruled populations.

No wonder, therefore, that this kind of leader has been unable to secure for mankind any lasting peace or “life, liberty, and pursuit of happiness” in the preceding millennia of human history. (Sorokin, 1959:105-106)

President John F. Kennedy was familiar with Sorokin’s ideas (Sorokin, 2008) and, apparently, learned from them. Perhaps because of that, the world was saved from a nuclear annihilation back in 1962. However, not all political leaders are equally considerate, educated, or have the sense of anticipation, as well as compassion and empathy for human suffering.

As a consequence of belated measures and mismanagement, the situation in the United States quickly turned phantasmagoric, surreal. Far from leading others in the fight against the new global threat, the country quickly became the world's epicenter of a ruthless and highly infectious disease. The social measures of containing pandemic, such as lockdowns, social distancing, and sanitation, could only go so far.

As to the much-awaited vaccine, according to the American epidemiologist Lawrence Brilliant, creating a worldwide Covid-19 vaccine program would require a prolonged and sustained international effort (Sample, 2020: 4). Clearly, this would have to wait for another country's leadership.

Meanwhile, the unemployment level rose higher in the first three months of the pandemic than it did in the two years of the Great Recession (2007-2009). By the end of June of 2020, about 40 million Americans were unemployed — the largest number since the unemployment insurance system was created in the 1930s. A rush to jump-start the nation's economy without proper safety measures in place caused new spikes of infections. By the end of June 2020, some state governors were reversing course and tightening restrictions yet again.

More bad news could be in store as a second wave of infections is looming in the fall.

Despite the official "we are all in the same boat" rhetoric, it was almost immediately apparent that the pandemic is not the "great equalizer" that transcends all social, cultural, demographic, and economic boundaries.

As George Orwell (1903-1950) sardonically quipped in his allegorical novella *Animal Farm* (1945), "some ... are more equal than others." The pandemic has almost grotesquely amplified existing social, racial, ethnic and economic disparities. Spurred by the pandemic, social tensions have ensued. With demonstrations against systemic racism and police brutality spreading far and wide, the Black Lives Matter movement has rapidly gained support around the world.

Could it be that the unfolding political processes during the summer of 2020 represent an initial, moderate stage of an impending revolution (Alalykin-Izvekov, Satkiewicz, 2014)? That would be a perilous path. As Pitirim A. Sorokin reminded us: "A society ... which has been incapable of carrying through adequate reforms but has thrown itself into the arms of revolution, has to pay the penalty for its sins by the death of a considerable proportion of its members" (Sorokin, 1967: 412). Obviously, a revolution during the pandemic could turn out exponentially more deadly.

So far, it appears that American society is moving forward by the way of reforms. Sweeping changes are being introduced on all levels of society.

A number of monuments, memorials, and portraits of controversial historical figures have been removed, and contentious books and films pulled off the shelves. The process of re-naming schools, streets and other public places and institutions is gaining momentum. Outdated designs of flags and other symbols are being changed. Private business companies are discussing relevant changes in policies. Police reform-related bills are being considered in the US Congress. Substantial changes in educational, legal, medical and other fields are obviously underway.

## **Conclusions**

One of the most powerful factors behind the turbulent and eventful trajectory of humanity's story is the phenomenon of calamity. It played, is playing, and will continue to play a significant role in the evolution (and revolutions) of the world's history and culture.

Calamities exert extremely powerful effects upon the human mind, behavior, social organization, and cultural life. They seldom arrive alone, often triggering one another and multiplying each other's effects. Besides inflicting an enormous toll on populations, calamities tend to exacerbate existing social, economic, and cultural problems. Yet while exposing the inner workings of the social system, calamities present a society in question with opportunity to regroup and address what needs to be remedied, thus at times opening the way for new, creative and constructive ideas, concepts, and developments.

Among other great calamities, a colossal role is being played by pestilences. As societies became settled and more complex, infectious diseases followed them at every turn. Through the centuries, a dramatic struggle with this horrifying multi-headed monster figured prominently in some of the most fundamental sources on history and religion, as well as in a number of prominent works of literature and art. Only recently and quite gradually has science and medicine achieved a degree of control over some of the most dangerous infectious diseases. A number of them have been conquered and even completely eliminated. In no small degree, this helped to prolong the lifespans of our contemporaries, in some cases to more than twice the duration of our ancestors' lives.

However, due to the mysteriousness of their origin and mechanisms of proliferation, as well as the self-centered attitudes of some of the ruling elites, the true role of infectious diseases in history remained obscure. Only recently, a number of prominent social scholars offered a number of groundbreaking ideas, concepts, theories and paradigms which greatly contributed to a better understanding of the phenomenon of pestilence. Pitirim A. Sorokin, William H. McNeill, Jared M. Diamond and others advanced original, fundamental, and revolutionary paradigms.

These have revealed the true patterns and dynamics of proliferation, the important laws and regularities, as well as the enormous impact of the infectious diseases, as well as other calamities on human societies.

Our analysis of multiple calamities, including the latest coronavirus Covid-19 pandemic, clearly demonstrates that efficiently confronting existential threats facing humanity takes a concerted, prolonged, and sustained international effort, involving enlightened leadership and adequate funds. It can only be done simultaneously with solving such pressing global problems as social, racial and ethnic injustice, hunger, poverty, lack of medicine, sanitation, fresh water and other resources, as well as equal access to medical care.

All these giant tasks would require devising and implementing a number of new Great Sociocultural Systems and Great Socioeconomic Systems. The alternatives may be quite grim, since our contemporary civilization may collapse under a combined pressure of such calamities as diseases, nuclear war, resource depletion, economic decline, ecological crisis, or sociopolitical disintegration.

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