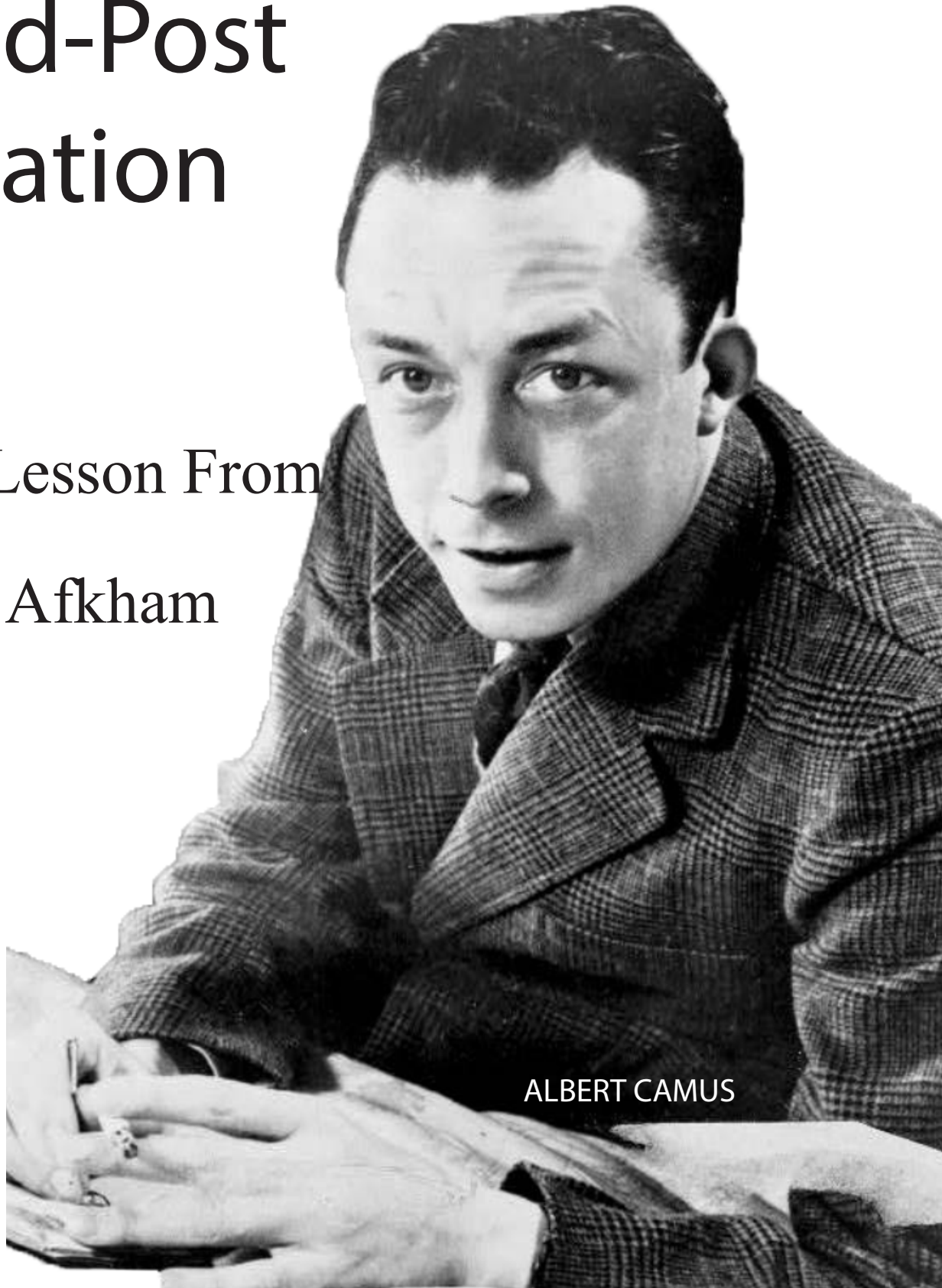


PROFILES

Pre-and-Post Vaccination Eras

A History Lesson From
Dr. Emand Afkham



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ALBERT CAMUS

“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. There have been as many plagues as wars in history; yet always plagues and wars take people equally by surprise”- Albert Camus: The Plague

At the time of publication in 1947, the book, “The Plague” by Albert Camus could have just considered as an allegory of society, relationships, and politics. At the time, it was difficult to imagine tangible experiences of fear, quarantine, and the inability to see loved ones. The COVID-19 pandemic, however, has made many of these feelings a stark reality. The COVID-19 pandemic has consumed global news outlets for over a year now, instilling an overwhelming amount of information, protocols, and preventive measures for society to navigate. What is the likelihood of returning to our normal routines of hugging and kissing? What could be the economic, social, and sustained health effects sustained from enduring a long pandemic? For many of us, it is the first time that we are facing a multi-year, global pandemic. Historically, however, humanity has faced even worse outbreaks.

Over history of vaccination from the time of Louis Pasteur – who in 1879 coined the word “attenuated” and showed that the non-sporulating cultures of viruses can be inoculated into animals and induce immunity¹- to making advances in the development of safer and more efficient RNA-based vaccines used today²-there has been an abundance of knowledge gained on vaccine development. These advances in biotechnology have been used to improve treatment design and the rapid development of new vaccines in such a short time, such as in the case of the COVID-19 pandemic. Moreover, we carry the effects of these events in our genes; ultimately affecting our susceptibility to future infection and the strength of our immune response. This is also true for the evolution of human social and biological adaptation to infectious disease outbreaks throughout the history of pandemics.

Emad Afkham is a Ph.D. student in the Department of History & Classics at the University of Alberta. Emad’s interest is in the economic and social history of subaltern social “classes”. For his doctoral thesis, he is researching the interconnectedness between

social unrest and power relationship in Persia and Austria in the early modern Age (mid-sixteenth to mid-seventeenth centuries). He mentioned he got interested in this topic when working on his MA thesis on peasant revolts during the French war of religion in the late sixteenth century. Emad also has a background in architecture and earned his BA and first MA degrees in architecture. Throughout this interview, we navigate through time and discuss the most influential pandemics in the history of human beings. Emad believes there is much to be learned from this history.

A quick search on the internet will provide a long list of different pandemics which can be divided into two groups: the time before modern medicine and knowledge about infectious diseases and the time after; In other words, the pre-and post-vaccination eras. “We hear about the plague in the various types of historical documents, namely: holy books, scriptures, annals, chronicles, archival documents, etc. In the Bible, there are few suggestions about the plague and outbreak of a pandemic among people” Emad mentioned.

“As one of the most important pandemics in the pre-vaccination era, the Black Death, the pandemic that swept over Europe and Asia from 1347 to 1351, had long-term consequences on human life in many ways. As the name implies, societies at the time had little information about the real source of the disease. The name “black death” originates from a symptom of the disease, known as “acral necrosis,” in which the skin of affected individuals would blacken due to subdermal hemorrhages. Interestingly, recurring outbreaks of the Black Plague lasted for more than two centuries.” According to Emad, “the Black Death originated in either Central or East Asia, spread to Crimea and arrived in Europe about 13 years later. We know that some parts of Europe were not infected by the plague, such as the vast area of the kingdom of Poland that was like an island among the plague invaded territories”. He added: “it claimed approximately

75 to 200 million lives, an estimated 30-50% of the European population. An astonishing number, considering the world population was around 450 million at the time. Not surprisingly, this depopulation event caused social, demographic, and economic changes throughout Europe. Although the world map was different than today, they were experiencing a worldwide phenomenon like the COVID-19 pandemic.”

Emad considered the sharp depopulation of many regions as the very immediate effect of the pandemic: “In agrarian societies (almost all economies before the “Industrial Revolution”), depopulation resulted in a labor shortage which offered freedoms to peasants and laborers and placed pressures on employers, leading to an increase in wages and benefits. As a result, despite the recession that happened due to this pandemic, peasant prosperity was increased in some places. From a political perspective, the black death broke down the normal divisions between the upper and lower classes and led to the emergence of a new middle class. As landlords competed for peasants with wages and freedoms, some argue it represented the roots of capitalism.”

All these permanent effects accompanying the lack of any medical knowledge raises curiosity about the societal reactions to these changes. “Most people regarded those catastrophic events as the wrath of God, which on one hand weakened the predominant organized religion, the Roman Catholic Church, as religious officials could not keep their promise of curing the disease. On the other hand, they were looking for the sinners. Consequently, many of the minorities including lepers, Jewish, and people with mental disorders were mistreated. Other supernatural causes – like the devil’s work, the alignment of the planets, and bad air were also considered.”

Interestingly, many of the challenges related to mental health during COVID-19 were also paralleled by societies during the Black Death. Emad mentioned that depictions of depression can be traced in the artwork from the 1300s, wherein the portrayal of death was common in both paint and sculptures. *Danse Macabre* (Dance of Death) was the actual personalization of death leading the row of dancing figures to the grave.

Another prominent pandemic with multiple waves like COVID-19, that occurred in the setting of modern medicine in 1918, right in the middle of World War I,

was the Spanish flu. “We are not sure about the origin of the virus as soldiers were traveling between nations and more importantly the significant censorship were in place as governments did not want to distract the soldiers from war. The Spanish Flu is named after Spain unfairly because the press in neutral Spain announced its progress battling the pandemic, unlike news outlets in other nations. So, the late announcement of the pandemic was also the problem for this pandemic.” According to Emad, it is difficult to delineate the societal impacts of the Spanish flu from World War I, however, we cannot disregard the effect of the Spanish flu on the improvement of the public health system. It incorporated sociology into medicine, which had previously only centered around biology and experimentation. Very soon after, the US started a national disease reporting system and the establishment of the health ministers in many countries - a direct effect of the 1918 pandemic.

“In comparing the pandemic-related restrictions of that time to what we are experiencing today, measures such as quarantine or closing of public spaces were suggested but not soon enough. Other measures included closing schools and places of public amusement, enforcing “no-spitting” ordinances, encouraging people to use handkerchiefs or disposable tissues, and requiring people to wear masks in public.” Emad mentioned.

Considering the huge impact the Spanish Flu had on people’s lives, many historians refer to it as a “forgotten pandemic”³. “First of all, we should know that all pandemics, to some degree, challenged the socio-cultural norms of societies. These challenges could reach very fundamental social, cultural, and economic levels, as we have seen in the Black Death, or alter some aspects of these norms. Therefore, all big shocks to the process of our everyday life brought fundamental changes and alterations. We can always talk about the new adoption and adaptation between the pre- to post-pandemic worlds.” Emad added.

“What’s true of all the evils in the world is true of plague as well. It helps men to rise above themselves.” – Albert Camus: *The Plague*

Advances in science and modern medicine, as well as increased demand for open access to journals and data, have greatly improved our ability to respond to and manage emerging pandemics. Indeed, viral sequences of SARS-CoV2 were available within the first few weeks of the COVID-19 pandemic; accelerating the development of effective viral testing, but also the global race for vaccines in unprecedented ways. Although the cumulative knowledge in biotechnology throughout centuries enabled us to develop the vaccine in a timely manner, however, as a society, we are still seeking to solve fundamental issues for which science does not have a straight answer: the globalization of science and health, and the equitable access to information and health resources.

References

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