



Letter to Editor

Eugenics, a sustainable alternative in the fight against COVID-19

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Dear Editor,

The term 'Eugenics' literally means 'good creation' and was first coined by Sir Francis Galton in 1883 in his book 'Inquiries into Human Faculty and Its Development'. Prior to this concept, Charles Darwin had put forward his theory of 'Natural Selection' and 'Survival of the fittest'. The evolution of human beings on this planet over billions of years is a result of the consistent understanding and exploitation of science. Unlike the oppressive use of the understanding of eugenics during the World War II, a fair and productive analysis of these theories in the present time suggests that the betterment of the human civilization may be possible by positive science and non-discriminatory application.

Recently, Charles J. Epstein reinstated the concept of eugenics for the modern world in his commendable article titled 'Is modern genetics the new eugenics?'¹ The paper discussed the burden of criticism and accusation that this concept bears which can be leveled by its reincarnation with a deeper understanding of its positive intrinsic form. Interestingly, in the 19th century; Martin S. Pernick in his paper had proposed that the concepts of infection control, eugenics, and public health in this era could both converge and compete.² For years, scientists have consistently argued that even though the infectious diseases themselves cannot be inherited, however; the damage to the 'germplasm' caused by these infectious diseases could be passed on to the future generations.² On the other hand, the modern exploitation of the knowledge of genetic processes for unethical reasons rather than for the betterment of our species may additionally pose a massive threat for our generations to come.

In the current scenario of the devastation caused by the COVID 19 pandemic, the adverse effect of the 'germ' on the 'gene' should be thought-provoking. Reconsidering Epstein's view on 'modern genetics' or the 'new eugenics' in the time of

the present health crisis, it seems there is an utmost need to review the fundamental principles of positive eugenics for the benefit of our future generation whose progenitors are battling against this dangerous contagion.

The family of coronaviruses have co-existed for long with other life forms including humans and have not appeared magically on this planet. However, the pathogenic potential of these viruses for humans was realized in 2002 after an outbreak of SARS (Severe Acute Respiratory Syndrome) in Guangdong, China.³ A decade later, another pathogenic coronavirus, known as Middle East Respiratory Syndrome-Coronavirus (MERS-CoV) became an endemic disease in the Middle Eastern countries⁴ and the recent pandemic caused by SARS-CoV-2 which is the seventh coronavirus known to infect humans has originated in Wuhan, China and spread globally at a lightning speed causing an unprecedented loss of lives.⁵

In this context, considering the fundamental principle of eugenics that is "artificial selection", it appears a typical example of the change in the gene sequence of a simple virus which was not pathogenic earlier. Changes in the genotype can be either due to natural cause or artificially using modern advanced genetic recombination techniques. Regarding the controversial origin of SARS-CoV-2, scientists have proposed the possibilities of "natural selection" in humans following zoonotic transfer as well as "selection during passage" which is apparent from the ambiguity revolving around the laboratory origin of these viruses which are researched in laboratory settings.⁶ Therefore, it is much needed to advance our understanding of 'natural and artificial selection' for positive and ethical applications in the present world.

In the late 19th century, two leading scientists from United States and Japan developed simple and reliable bioassay tests to identify mutagens and carcinogens in daily human life using pathogenic bacteria (*Salmonella typhimurium*, *Escherichia coli*,

and *Bacillus subtilis*).^{7,8} this is an excellent example of the rightful use of science for the welfare of one species without exploiting the pathogenic properties of another species. In other words, the concept of 'Positive eugenics' should be understood with ethical responsibility for the purpose of improvement of the human race and the scope for application of modern eugenics should be determined. It seems necessary to establish an 'International Society for Positive Science' involving members from all disciplines who can work responsibly for the identification and elimination of harmful genetic sequences of pathogens affecting our species in an ethical manner. The effect of this pandemic on the human genome should be studied in detail along with the universal provision of genetic counseling. Genetic studies on the recovered patients as well as the health and development of the babies born during this pandemic will provide an insight on the deeper impact on the human life by this contagion.

The COVID 19 pandemic has provided an opportunity to understand and utilize 'positive eugenics' as a sustainable alternative in the fight against COVID-19. The unpredictable effect of this public health crisis on the human genome should be considered seriously to protect our next generation and to prevent recurrence of such disasters in the future.

Keywords: COVID-19; Coronavirus disease 2019, SARS-CoV-2; severe acute.

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