

HS7.301 Science, Technology and Society

Quiz 2

What is Thomas Hughes' idea of Technological momentum? Discuss technological momentum in mineral extraction (say coal mining).

Word Limit: 500 words

Ans:

Thomas Hughes' idea of technological momentum states the relationship between society and technology over time, and Hughes' theory discusses how technology and society influence each other, but the relationship between them is reciprocal; therefore, we cannot determine how they both affect the changes that occur in the other one.

Through the models of social determinism and technological determinism, Hughes explained how society exerts its influence in the spread and development of any technology and how new technologies influence society, and the changes that technology brings in society head towards being irreversible with time. And as a society impacts the spread of technology, once a technology is widespread, it becomes nearly impossible to replace any existing technology as it has already penetrated society.

For any new technology, it is challenging to replace any pre-existing technology or start a new domain of itself in society. Once it is established well in society, it is more difficult to remove the technology from society, such as coal mining and extraction. Suppose we trace the trajectory of coal mining as technology and industrial applications. It dates back to the industrial age and industrialisation when coal was not an everyday part of everyone's life, the majority of the population was primary producers, and the industrial age was starting. And it added to this. Initially, there were not enough safety measures in the mines. Due to this, the workers often had health hazards and sometimes an unfortunate death because of an accident, which also added that society was reluctant to make calls to enter the society. So, here we can see how social determinism impacted the entry of coal into the life of society for decades.

However, It became standard technology with time because of the need for industrialisation, and with rapid industrialisation, coal mining became an essential technology for industries. We know that coal is a fossil fuel that takes millions of years to form, and burning coal has environmental hazards. But coal mining is a complex coal extraction and transportation technology and has become quite common nowadays. And it is not easy to replace coal with any other substitute, such as nuclear energy, because coal has already become part of everyday life. It is one of the primary sources of electricity production in various industries in various countries.

Moreover, there are millions of families dependent on coal mining technology. The amount of coal is also limited, adding to technological determinism. We can not eradicate the coal mining industry with any environment-friendly option. To maintain the momentum of the present technology, the technology can not be easily replaced with environmentally friendly options.