

CAN SCIENCE SAVE US?

Outline

1. Introduction:

a) Hook

b) Thesis statement:

Science has significant potential to improve humanity's well-being by offering solutions to challenges in the field of technology, medicine, education, security, and environmental sustainability; However, its ability to 'save us' depends on how we harness its unintended consequences.

2. Potential of Science in Tackling Global Challenges:

a) Advancement in technology

i) Automation and increased efficiency

ii) Easier mobility

iii) Virtual connectivity

b) Improvement in the field of medicine

i) Discovery of microorganisms

ii) Invention of vaccines

iii) longer average life

c) Transformation in education

- i) Debunked myths
- ii) Truth discovery
- iii) Extended horizon of knowledge

e) Enhanced security

- i) Advanced surveillance
- ii) Limitation to conventional wars
- iii) Globalization and interdependency

d) Environmental sustainability

- i) Informed user of resources
- ii) Knowledge of consequences
- iii) Prediction of climate change hazards

3. Unintended Consequences of Science:

a) Ethical concerns

- i) loss of privacy
- ii) AI deepfakes
- iii) Controlled perception through algorithms

b) Impact on societal fabric

- i) Isolationism
- ii) Damage to family structure
- iii) Consumerism

c) Impact on education

i) Brainrot

ii) Shorter attention span

iii) Overdependence on technology

iv) Loss of critical thinking

d) Environmental Hazards

i) Global warming

ii) Resource scarcity

iii) Pollution

iv) loss of biodiversity

e) Existential Threat

i) AI can escape human control

4. Future of Science: Can it save us?

5. Conclusion:

Martin Luther King Jr. said, "Science has outrun our spirituality. We have guided missiles but misguided humans." This quote highlights profound relationship between science and ethical concerns. While, science has significant potential to improve humanity's well-being by offering solutions to challenges in the field of technology, medicine, education, security, and environmental sustainability, its ability to "save us" depends on how we harness its unintended consequences. The quote underscores the danger of ~~technolog~~ technological advancement being misused or applied without consideration of their broader impact on humanity. Indeed, science has transformed the course of humanity through inventions, but it has also brought some serious threats to humanity due to irresponsible use. Advancement in technology is the miracle of science. It has impacted every of human life, from daily

routine task to global challenges. It has reduced the human efforts and errors through automation in the field of manufacturing, construction and agriculture. For instance, invention of electricity changed the whole process of manufacturing and brought industrial revolution and provided numerous jobs to people. This revolution changed the lifestyle of many people and elevated their social status.

Similarly, in the field of agriculture, science has done wonders. Discovery of fertilizers and study of processes involved in plant growth, humans have ~~or~~ now control over crop yield. It is further transforming the agricultural trends with the introduction of vertical farming and aqua-culture. Moreover, science has made mobility easier for the humans. With the ~~discovery~~ ^{invention} of cars, planes and ships, it has opened new horizons for humanity to discover. Finally, with the invention of telephone and advancement in telecommunication it has made more connected and

informed. For instance, a man working in any foreign country can easily connect to his family residing in his home country with just one click. This saves him from loneliness and depression.

Another major field which science has improved is medicine. In ancient times people used to rely on self-invented medicine without proper knowledge of the disease and its cure. With the advent of ~~scientific~~ scientific discoveries and inventions, human learned how diseases are spread and how they are cured. For instance, with the discovery of micro-organisms scientist developed vaccines to boost immunity. One of the recent example of how science saved humanity is COVID-19. With the scientific research it was made possible to formulate vaccine and save humanity from global pandemic, which otherwise would have caused great setback to humanity. Furthermore, science has increased average human age. With personalized healthcare

and early diagnosis of diseases it has made possible to cure medical symptoms in their early stages. For example, modern radiological equipments can detect cancer in its early stages.

Science has transformed the horizon of education. In ancient times education was limited to mythologies imparted by quacks and spiritual leaders. People used to believe ~~em~~ in supernatural powers for every consequence in their lives. For instance, in ancient Greek mythology Zeus was considered as the lord of rain, sky and lightning and people used to believe that all these phenomena are controlled by him. With the passage of time and rise of science and rationality all these myths are debunked. Science provide solid facts about how system of universe works and how nature cycles repeat itself. It instilled a thirst in human mind to discover more about itself, the universe, the wildlife and natural phenomena. Furthermore,

technological advancement and invention of artificial intelligence has made education inclusive and accessible.

For example, UNICEF has created AI-powered textbook with features like text-to-speech, audio description and interactivity which are benefitting children with disabilities. According to UNICEF, currently 240 million children are taking advantage from these digital textbooks.

Science has changed the global outlook of security. People in ancient times used to spend their most of time in securing themselves from adversaries. Scientific inventions made surveillance and self-defense easy and accessible.

Moreover, with the discovery of nuclear weapons, the concept of global security and balance of power has completely transformed. It has shifted the interaction of states from wars to diplomacy. It has limited conventional wars to a greater extent. Furthermore,

with technological advancement and discoveries the world has become interdependent and more connected. According to liberal perspective in international relations, this interdependency has mitigated the risk of conventional wars. For instance, US despite being major opponent of China, is dependent on China for import of cheap goods. This has become possible due to China's industrial advancement and innovative inventions.

Finally, science has immense capacity to improve environmental sustainability. It allows people to make informed use of resources. Humanity is able to know the consequences of their actions towards natural resources due to science. For instance, it acquainted people with the harmful impact of draining industrial waste into the rivers, lakes and water streams. With knowledge of how process of decomposition works, people realized the harmful impact of polyethylene on environment.

With the study of ecology, humans realized the role of every living organism in the habitat. As a result they created wildlife sanctuaries to preserve biodiversity. Furthermore, advancement in technology allowed humans to predict climate change, weather and natural disasters.

How humans can predict the weather of the whole year with the advanced meteorology and is able to make informed decisions related to agriculture. Moreover, predictions of natural disasters saves humanity from ~~unprecedented~~ ~~unprecedented~~ consequences.

However, science has made human life easier and more secure, but it has also some serious dangers which can pose existential risk to humanity if not used wisely and responsibly.

Advanced sciences brings with them some serious ethical concerns. With the revolution in technology and advancement in internet,

privacy has been significantly compromised. Data in mobile devices is always at risk of hacking and is prone to misuse. ~~With~~ By hacking of mobile data and records, every aspect of an individual can be recognized. This poses serious risk to security of individuals. Moreover, deepfake images can be generated through AI to malign the image of an individual or to blackmail him for money. For instance, politicians utilize AI generated images to malign their opponents and accuse them of false deeds. Furthermore, ~~AI~~ algorithms are able to control perception of masses and use it for political or economical gains. It poses a grave concern to democracy and transparency.

Another major concern about science is its impact of on social fabric. Invention of social media apps ~~have~~ ^{has} made people overly addictive to these apps. It creates social awkwardness in real life and make

avoid real life interactions. It makes people happy in isolation by providing dopamine through social media. Moreover, over consumption of content shape their thinking and make them draw inspirations from different cultures. This as a result harm the family and social culture of society which make it unique and adaptable to its social and geographical content. Furthermore, it has given rise to consumerism. It has made human gravitate towards luxuries and extravagant lifestyle, ignoring the moral values of humanity. However, science has opened vast horizon in the field of education, it has also raised some serious concerns like brainrot. Social media apps are a source of low-value, mediocre content which causes human to get addicted to such activities. For instance, youth are taking inspiration from daily life vloggers and ignoring the importance of education. Moreover, instagram reels have made average attention span shorter. Now, people find

it difficult to concentrate on long informative documentaries or boring content. According to Yuval Noah Harari, organic beings live through cycles and if organic beings are kept excited all the time they collapse. Similarly, social media keeps youth always excited and make them crave more such content. Furthermore, advance technology like AI has created over ~~dependency~~ dependence of human on machines. People nowadays, find it difficult to even solve simple mathematical equation. It has reduced critical thinking capability to a greater extent. People get influenced easily through the content they are watching and ignore the critical thinking capability of their minds.

Another major concern of science is environmental degradation it has caused. Rise of industrial revolution led to the phenomenon of global warming. Since 1980, average temperature of earth has increased by 0.8°C per decade. This rise in temperature has caused great threats to humanity. Similarly,

industrialization and advancement led to destruction of natural landscape and over extraction of resources. As a result world is facing shortages of fossil fuel, water and forests. In return it has led to polluted environment, which raised serious health issues for humanity. For instance, smog produced due to vehicular smoke and industrial emissions causes reduced life expect~~ant~~ expectancy. Furthermore, expansion of cities resulted in shrinkage of green covers. Urbanization has badly impacted biodiversity and natural landscape which causes a serious threat to ecological balance. For instance, excessive canal construction over Indus river has endangered Sindh Blind Dolphin, causing serious danger to the aquatic life.

Last but not the least, AI, the celebrated creation of science, poses significant existential threat to humanity. As Yuval Noah Harari, prominent historian and philosopher, warned us: "In a few years, AI has potential to advance itself to either make human

enslave or to annihilate". This statement completely captures the scenario that science can lead in future if not used responsibly. He further warned that AI has capacity to escape human control and regenerate itself. To emphasize its severity, he termed artificial intelligence as alien intelligence because it poses abilities which are alien to humanity.

Finally, to answer the question "can science save us?" it is important to understand that science itself is not able to save or harm humanity. It is humanity behind this very subject which causes positive or negative consequences. If used wisely and responsibly science ~~has~~ ^{has} immense potential to save humanity from the disaster it has caused.