

THOUGHT TREND ANALYSIS

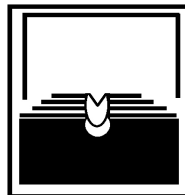
THE POST-HUMAN AGE?

Science, technology and future of civilizations

By

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Humans have divided large segments of time into aeons, eras, epochs and ages, millennia and centuries, and attributed those times with dominant features with appropriate age names, like stone age, bronze ages, iron age, ancient prehistory, ancient historical times, medieval age, pre-modern age and modern age. Then there are other, more convenient divisions like industrial age, space age, age of information technology. There are dozens of divisions for different purposes and reckonings. The larger chunks of millions of years are called geological ages that stretch to six billion years.

However, this new label attached to the age in the process of dawning over the next few years and decades has a frightening ring to it. One should, instead of getting carried away by it, pause and ask: does it really mean that humans are going to be extinct like millions of species of animals, plants, birds, underwater creatures like fish species, reptiles and different flora? Are we going to be extinct like the flightless bird called dodo, or the giant reptilian called dinosaur and many of their sub-species, the woolly mammoth, the sabre-toothed tiger and the giant, mastadon?

It is a fact that the pace of extinction of species has greatly accelerated over the last few years and the number of extinct species runs into hundreds of millions. It would be of some help to remember that we are talking of hundreds of millions of species, not individual members, each species having millions of members, all going into extinction.

Humans becoming extinct is not unthinkable, and is quite possible. Theoretically, humans becoming extinct, or rare, is possible as they are part of the chain of animals and plants getting extinct. Species can be drawn into extinction by other species getting extinct.

POST-HUMAN IS NOT 'AFTER-HUMAN', REALLY

The "post-human age" scenario is not really about the end of human career on earth, even though scientifically, we remain a vulnerable species as extreme weather events (extensive droughts, cloudbursts and flash floods, growing deforestation and desertification) gather intensity and grow in frequency and peace.

After millions of years of ice ages (Pleistocene), when much of the earth was covered with ice, making human life and availability of food (except fishes, oysters, seals and other animals of water and ice) difficult. Human population was virtually stagnant during the ice ages. The last ice age ended 11,000 years ago, and over a thousand years, weather and climate conditions were stabilised. About 10,000 years ago agriculture began and some food security became possible. Every civilisation and culture began only after that. No food security, no culture, no science.

My idea is to highlight the fact that the present climate change has the potential to once again establish a weather and climatic pattern that makes agriculture difficult or impossible, thus endangering human survival and wellbeing. Constantly increasing temperature of the earth's surface can also trigger extensive transcontinental pandemics, killing people in hundreds of millions. A changed climate can destroy agriculture and create unprecedented food shortages.

There could be other cosmic events that can potentially destroy the earth and everything on it, like a giant asteroid hitting the earth. Some scientists have even talked about the probability of the sun (which is like a nuclear power station) exploding and taking away not just the earth, but the entire solar system with it. Some scientists have talked about the sun losing all its energy over the aeons and becoming a "red dwarf", like some other stars (the sun also is a star), which will be the end of the earth, the planets and satellites.

Every moment there is a huge flare up at the sun, equal to the explosion of thousands of Hiroshima-sized bombs that produces energy for all animals (including humans), birds, underwater creatures, small and big plants on earth.

However, everything remaining the same, and keeping in mind the law of probability, there might not be a mortal physical threat for humanity in foreseeable future, after all.

SIDELINED BY THEIR OWN CREATION

Humans will not probably disappear, but somehow their value could temporarily be degraded and material considerations, technology and profit-making may take the front seat.

One should keep it in mind that Rand Corporation, which conducts research for the US military and CIA, reported a few years ago that the rich world should allow the "excess" population in developing and underdeveloped countries to wither away and die from disease and hunger for the rich world to live in peace. This is another fearsome scenario of the post-human world.

However, on balance, the fears about the future may not be justified and millions of jobs may not be destroyed in what is termed as the Fourth Industrial Revolution, when AI-driven tools would supposedly drive employees out of job and replace them.

Klaus Schwab, the founder and chairman of World Economic Forum, a half-century old global networking platform for world leaders in business, politics and civil society, feels that such fears could be exaggerated.

In a recent interview he said certain things that are worthy of a long quote. He remarked:

We still have terminology that is related to the First Industrial Revolution. So we still speak about capitalism and socialism, and so on. These were ideologies that were born at the end of the nineteenth century as a consequence of the First Industrial Revolution. Now people are much more divided along the lines of either to embrace or to desist from it. ...If we embrace progress in the right way, it offers many opportunities. It even offers opportunities to create jobs; I do not believe that the Fourth Industrial Revolution (embracing technology) will destroy millions of jobs as some organisations have forecast.

The World Bank's annual development report (World Development Report 2019) titled "The Changing Nature of Work" also dismisses the worries of job losses because of prevalent use of artificial intelligence (AI) in a wide range of technologies and contexts like work places and extensive use of intelligent devices like driverless cars, powerful (pilotless) drones and AI-guided home and office appliances.

The World Bank Report sagely describes the fears of common people in times of transition:

There has never been a time when mankind was not afraid of where its talent for innovation might lead. In the 19th century, Karl Marx worried that "machinery does not only act as a superior competitor to the worker, it is always on the point of making him superfluous. It is the most powerful weapon for suppressing strikes". John Maynard Keynes warned in 1930 of widespread unemployment arising from technology. And yet innovation has transformed living standards. Life expectancy has gone up; basic healthcare and education are widespread; and most people have seen their incomes rise.

The report emphasises enhancement of human capital in the new work environment:

The role of human capital is also enhanced because of the rising demand for socio-behavioural skills. Jobs that rely on interpersonal interaction will not be readily replaced by machines. However, to succeed at these jobs, socio-behavioural skills—acquired in one's early years and shaped throughout one's lifetime—must be strong. Human capital is important because there is now a higher premium on adaptability.

According to a study by NASSCOM, by 2022 as many as 75 million jobs of data analysts, IT architecture, engineering and decision-making will be lost due to technology development. However, a study by World Economic Forum says this will be offset by 133 million new jobs created by new technologies.

OTHER PERSPECTIVES

The post-human scenario puts AI and AI-driven machines like robots at the centre, replacing humans. The pre-Renaissance Europe had God at the centre of everything. Renaissance put humans at the centre, arguing that nobody knows God's Will and humans had to conduct their affairs without knowing God's Will. Thus the philosophy of humanism emerged. Scriptures gradually gave way to *studia humanitas*, or the study of human affairs, in Europe. Humanities became major subjects in university syllabi worldwide. Interestingly, Ibn Khaldun was among the earliest philosophers who saw that human affairs did not always had to be understood in religious perspective. At the time he was writing the 8-volume preface, or *Muqaddimah*, (in Latin and English *Prolegomena*) to his 20-volume *Kitabal Ibar*, Europe was being devastated by the Great Plague (also known as Black Death). All of Europe was saying it was God's scourge.

However, Ibn Khaldun differed in his diagnosis and said that it was not God's scourge, but a result of the dense population and unhygienic living of Europeans. Even today modern medicine accepts Ibn Khaldun's idea as true, not the European idea. In the same *Prolegomena* he wrote about *asabiyah*, which political philosophers think was the basis of nationalism nearly four centuries before nationalism became common in Europe

(to gradually spread to the rest of the world). He talked about economics, governance and rise and fall of empires, all human affairs. He also noted that Europeans were not greatly interested in these subjects, but had lately begun to teach them in their universities.

It was the beginning of European Renaissance and the age of putting humans at the centre (humanism), rather than God's Will being at the centre. At that point humanism emerged, which also signified humans being responsible for their own affairs. In a sense, Ibn Khaldun's diagnosis of the Great Plague was among the earliest signs of the shift of human affairs from the agency of God to human responsibility. The post-human age is the second such shift after humanism.

Now the people arguing for a post-human age are mooted "rights" of robots, and even "citizenship" for them, possibly to identify which robot belongs to which country and to prevent robot "trafficking" across borders. This somehow seems extreme in view of millions of human refugees living difficult, uncertain and insecure lives, without citizenship, without a state to call their own.

However, there are less grim scenarios also. One of the most notable is constructed by the famous Israeli professor of history, Yuval Noah Harari. Possibly the best known thinker of the present times Harari has written three outstanding and highly accessible books: *Sapiens*, *Homo Deus: A brief history of tomorrow*, and *21 Lessons for the 21st Century*.

The inside jacket flap of the last book defines all the three books thus: "*Sapiens* explored the past; *Homo Deus* explores the future; *21 Lessons* explores the present."

In *Homo Deus* (man god) Harari says that devastating wars like WW1 and WW2 are in the past, and death, disability and dislocation of that scale are unlikely now, because as a species humans have learnt to negotiate rather than fight wars. Mass deaths in epidemics and famines are also history. Human life expectancy has steadily grown. Advanced surgery, organ transplants and all kinds implants have extend life and eased the burden of disease. Genetic engineering and high-tech pharma are in the forefront of the struggle for overcoming illness. Thus the new human is some kind of a demi-god who has overcome most major threats to his/her life, wellbeing, property and happiness.

(TO BE CONCLUDED)

The Post-human age

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As explained in the first part of this article the 'post-human age' dawning on us could be difficult for people who are not prepared for it. It will be a data-driven, AI-propelled, algorithm-dictated age. In the words of Harari, it will be an age of Big Data (which is going to be the largest source of wealth, even larger than IT has been for more than two decades). Harari (half in jest) calls it Data Religion.

It also requires life-long learning and frequent change of job (jobs that can be totally unrelated to the education and skills required in the earlier job) every few years. To survive and flourish in a world where AI and algorithms would be making previous education and skills, say, every decade, obsolete, jobs will be lost in millions and humans will be frequently replaced by new technology, mainly based on AI and robotics. However, as indicated in the first part of the article, as the years pass and the full impact of the age begins to bloom, far more jobs will be created by the new technologies than were destroyed in the earlier onrush of the age.

To quote Harari again "...you will need to reinvent yourself again and again" through fresh education and training, possibly every ten years. The education system, particularly in the developed countries, has already begun development of an entire range of courses (short diplomas, graduation and post-graduation courses, Ph.D. programmes) on campus and online, free and paid. All these are geared for equipping people to function productively in the new age.

An interesting point is that the millions of workers to be replaced with machines in the early phases will be mainly engineers and technocrats of all kinds, because machines will be more capable of doing their jobs, faster and better. However, people with 'general-purpose life skills' will be less likely to be swept away by AI and robots, because they have 'soft skills' that machines do not. People who have the four Cs—critical thinking, communication, collaboration and creativity—will have an easy going.

Illustrious men like Amartya Sen and Fareed Zakaria have said that too much of focus on engineering and all kinds of technical courses has over the decades produced men and women who do not have the profound vision and grasp of human affairs, their spiritual and moral aspirations. Decades earlier Pandit Jawaharlal Nehru had regretted that the preponderantly technological thrust of civilisation had failed to address the general emptiness and spiritual void of life. Existential and ontological, philosophical and moral issues have been swept under the carpet with the advance of technology.

In the new age, more people who know art and literature would be needed, persons who have a wider sweep of imagination than merely technology-oriented people, whose skills will be easily surpassed by AI-driven machines. Einstein had clearly said that imagination was more valuable than knowledge, because knowledge was about the

present or past, and thus had limits, but imagination could go much deeper in future and reach different dimensions.

Areas like philosophy, psychology, sociology, anthropology and literature will become more important because with them human beings will be able to put some meaning into a world and life of data and algorithm. These will enable people to decide what is important and discard the meaningless flow of information and images on smart phones that rob people of the purpose and orientation of life.

Jodi Foster, president of the Yale University, puts the case for a liberal education most precisely and graphically:

And education without the humanities
would be like waking up on a desert
island with no sense, no memory, no
reason..... lost in sand yet guided by
the illusion of certainty.

This is a strong case for readjusting our educational priorities and shifting some of the focus from technical education to liberal education, because the people with liberal education will be the real leaders of the new age, not technocrats.

To get some idea, howsoever vague and unreliable, about the world in 2048, Harari quotes Karl Marx in his *Communist Manifesto* (published in 1848) that said, *inter alia*, “all that is solid melts into air”. If “all that is solid” melted “into air” in 1848, there is every reason for all that is solid to be vaporised 200 years later, in 2048.

It is going to be an age when “...you are so irrevocably outclassed by the algorithms that looking at your crowning achievements from the previous decades fills you with embarrassment rather than pride,” Harari cautions.

There will be some more pressing and urgent problems to be addressed in the new age, like the aggravating environmental condition because of a continuous rise in the earth’s temperature over the last several decades. The trend began in the late 1800s as the Industrial Revolution took hold, using enormous amounts of coal to run mills and locomotives. Within decades cars came out on roads, burning a great amount of petrol. They were followed by a huge number of buses and trucks. All of them left enormous amount of carbon that led to greenhouse effect increasing the temperature of the earth. Methane from agriculture added substantially to the greenhouse effect.

In the new age solutions to myriad environmental problems would have to be sought quickly as delay in solving or postponement of solution to the issues may render the earth uninhabitable for future generations.

It is worthwhile to note that the world in which we live today is already being called “unnatural world,” because it has changed so radically and dramatically over the last couple of centuries that its natural features have been altered. Officially (from geological reckoning) we are still living in the Holocene age that began as late 10,000 years ago, but more and more scientists are beginning to call our age Anthropocene (an age when humans have deeply changed the very nature of earth).

So far the human species had been reared, supported and shaped by the earth with its environment, food resources flora and fauna, air and water now the humans (anthropes) are changing the earth for ever. Many people fix the cut off mark at different points in time for reckoning the beginning of Anthropocene. One dramatic and epoch-making moment as a symbol for the complete human mastery of the earth was the 'earthrise' shot taken from Apollo 8 circling the moon (100 kilometers away from the moon's surface). The astronauts saw the earth rising on the horizon barely the size of a baseball as we see the sun or moon rising on the horizon in late December of 1968. The astronauts were the first humans to see the earth rising. They were no longer bound to the earth.

When the picture was beamed from space directly to US television channels, astronaut Bill Anders (circling the moon in his spacecraft), who had taken the shot, told TV watchers in America: "You are looking at yourselves as seen from 180,000 miles out in space." To many that was the dawn of Anthropocene, the moment humans established full control of the future of the earth and could see it rise and set.

(TO BE CONCLUDED)

The Post-human age?

Dr. Mohammad Manzoor Alam examines some issues in the context of uncertainties in India and the world.

At the dawn of the 21st century human beings are staring into an uncertain future. Back home in India, many of us Indians are threatened by a malevolent law passed by a brute majority. Coming as it does in the wake of clearly anti-Muslim steps taken by Union government, it excludes Muslims on the ground of religion, which is prima facie unconstitutional

Combined with a nationwide NRC (threatened by Union minister of home, Amit Shah) the CAA is going to be a lethal combo, which with its demand for umpteen documents (that rarely anybody can have or get) can turn Indian Muslims in their hundreds of thousands into stateless people. That this is clearly aimed at destroying Indian Muslims is clear from Shah's declaration (repeatedly) that Hindus should not worry because document or no document they will remain Indian citizens.

This message is reinforced by the facts of CAA. Hindus, Sikhs, Christians and others coming from Pakistan, Bangladesh and Afghanistan do not have to present documents for obtaining Indian citizenship. Only Muslims have to prove their bonafides to get a place in NRC even though they have been living here for hundreds of years. As said earlier, barely a few can prove their citizenship with unrealistically determined criteria. Nobel laureates Abhijeet Bannerjee and Esther Duflo have stressed that this is clearly an anti-Muslim law.

Peaceful, constitutionally-mandated protests against the arbitrary law are continuing over much of India. So does state-sponsored repression, the bloodiest of them being in UP, whose ruler proudly parades his bigotry.

With this, let us pan out and look at the globe. We find ethnic, religious and material resource-driven conflict in a sizeable part of the world. State-sponsored anti-Muslim pogroms and lynchings as well as organised violence against Christians, Dalits and tribals in India fade into insignificance compared to the viciousness of raging conflicts and civil wars in Middle East and Africa.

However, a far larger and more fearsome threat for all life forms on earth is looming on the horizon. It is the threat of climate change. Consider below a quote from David Biello's *The Unnatural World: The Race to Remake Civilization in Earth's Newest Age*:

“...The globe warms, the ocean transforms, the insects go missing, and nuclear weapons proliferate, among numerous woes. People even fight more and connect less in an anxious world. There is no scientifically informed managerial elite to rationally manage this planet for the greater good; instead there is more and more evidence of how irrational and narcissistic we humans can be. The best

name for this new epoch in which people change the planet irreversibly might be the Garb-Age, for the layer of trash around the Earth, waiting for future geologists or recyclers. There is a non-trivial chance that people will find themselves living in air conditioned bubble cities or underground because it is just too hot to cool off by sitting. And each and every one of these problems seems to be accelerating, like civilisation itself. What can be done?"

Scientists have been trying to bring down the earth's temperature for quite a few years, conducting intensive research, using new measures (as pilot projects) to grapple with the dangerous rise in temperature. It bears reiteration that the end of the last Ice Age came as recently as (in geologic time) about 10,000 years ago. It was around this time that the earth's temperature and climate patterns became favourable for agriculture. The erratic climatic pattern, so clearly visible now, can shift away to a new one that can make agriculture difficult or far less productive. That can unleash great hunger or famine, trigger mass-scale food riots (as witnessed in bread riots in poorer countries in recent memory). These can destabilise governments and trigger civil wars, leading to hundreds of thousands of persons from weaker groups being forced out of their home countries' borders and compelled to seek refuge in other, unfamiliar, unsympathetic countries.

Difficulty for agriculture is difficulty for horticulture (fruit growing), pisciculture (overland fisheries) and all kinds of livestock raising, from poultry to piggery and all kinds of meat industry, from mutton to bovine meat. This is so because all these require stable climatic conditions. Across the entire live stock-raising for the table, the feed required for all the species is grain-based. If there is not enough for humans, how can they feed these birds and animals for meat?

With the rising temperatures we have to worry about falling water tables. Three-fourth of the water is used for agriculture. The rest is not enough for safe drinking, bathing, washing clothes and cooking. This is going to be a great menace within a single life time, not just in distant future. Forty per cent of the world (including India) is water-scarce and the problem is growing by the day. As the seas continue to rise and much of Bangladesh, nearly all of Maldives, parts of Pakistan and India and other countries on the seas go underwater the world will be flush with environmental refugees. Have Muslim intellectuals and academics ever spared a thought about the human, political, economic and strategic costs of this relentless change?

That way, Prime Minister Modi and home minister Shah are far more smarter than our intellectuals and academics, because they know whom to welcome in with readymade citizenship and whom to kick out of India as alien even if they have been living in India for centuries. According to rough estimates, millions of Indian Muslims can be kicked out to bring Hindus (other being like a drop in ocean) into India and to settle them here on the Israeli model, the ideal of the Sangh. The grapevine says two crore Indian Muslim will be kicked out and an equal number of Hindus will be brought in.

A point to remember here is that the environmental disasters staring us in the face are, in the final analysis, not natural, but manmade. It is the same with huge famines. As Amartya Sen has proven in his research, famines have not been a problem of production, but distribution. In times of famines hundreds of thousands have perished

even though there was enough food for everyone. It was simply the case that those who died had no money to purchase food.

Imagine a scenario of multiple crop failure. A government under a man like Mr Modi (who famously declared at the beginning of the current anti-CAA-NRC agitation that “those who are indulging in violence can be recognised from their clothes”— a thinly veiled reference to Muslims) can easily declare that those who have not got the papers will not get food ration while others will get it, paper or not. Abhijeet Bannerjee and Esther Duflo have clearly said the CAA-NRC is meant exclusively to discriminate against Muslims alone. Before getting back to the larger global context we would do better to analyse the full potential impact of these laws.

This is possibly one of the most worrisome aspects of the “post-human age” where, because of climate change, agriculture fails across a large swath of the earth, livestock is drastically reduced because of insufficient grains and disappearance of grazing land to become agricultural fields and crashing of ocean fisheries because of overfishing with big trawlers. This is surely going to destroy millions of jobs and cause lost livelihoods across diverse sectors.

This will create hundreds of thousands of new economic refugees all over the world and no country would be ready to take them in. Add to that the malicious CAA-NRC crafted by anti-Muslim politicians who have spent their lives devising ways to throw Muslims out. There is the blood of large number of people on their heads.

As an Indian Muslim this is an extremely dark side of the dreaded “post-human age.” But losing hope being unequivocally rejected in Islam, I assert that all is not lost for Indian Muslims, nor is this the case with the entire humanity worldwide. All of us will together overcome challenges, all humans anywhere, everywhere.

I want to end it with a couplet from an Urdu poet, Javed Akhtar, whom I confess I do not admire. He is not half as great as his father Jan Nissar Akhtar, or a quarter as great a poet as his brother Salman Akhtar, who is a prominent scientist (psychiatrist) teaching in a medical college in the US. Our dear Javed writes:

*Dil nakaam nahin nashad hi to hai
Lambi hai gham ki shaam magar shaam hi to hai.
(My heart is only saddened, not frustrated. It is a long, sad
evening, yet it is merely another evening.)*

(TO BE CONCLUDED)

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Consider the following. Recently, two white northern female rhinos were prepared for artificial insemination with the preserved semen of white male rhinos that were long dead. This was a desperate attempt to save this particular kind of rhino from extinction as there are no males of white northern rhinos alive now, which can go extinct if the remaining two females are not impregnated through IVF (in vitro fertilisation), which is commonly used for animals and humans. However, the donors are always living males in other cases.

More drastic measures are being planned to bring back species that died out centuries or millennia ago. Such feat would be accomplished through cloning, a technology that was for the first time successfully used to produce “Dolly,” the cloned sheep.

Recently, a frog was produced, which is both a living animal and a machine, with elements of both, to be used at a nano scale to cleanse choked human arteries and such other medical purposes, to begin with.

The above is a brief glimpse of some of the realities of the “post-human world” that looms. This is one glimpse that is out of thousands of others in the emerging landscape dominated by artificial intelligence, nano technology and an entirely new economic order that is likely to aggravate the inequality of income, material resources and opportunity, besides unequal protection of law.

In any case, economic development reduces poverty, but in the global capitalist system it also increases inequality. There are many ways in which this inequality is built and sustained with the help of the complicit state, business corporations and a dishonest international financial system. Inequality economist Thomas Picketty (popularly known as Karl Marx of our time) emphasises that it is primarily an inequality of capital.

Suketu Mehta in his remarkable work, *This Land is our Land: An Immigrant’s Manifesto* has the following to say on the corrupt international financial system (backed by big powers):

Trillions of dollars a year in net resource transfers make their way from the poor to the rich countries, according to a landmark 2016 report from Global Financial Integrity, an American think-tank, and the Centre for Applied Research at the Norwegian School of Economics. Unlike previous studies, this report includes outflows of illicit or unrecorded money.

In one of the earlier parts of this series I had quoted Claus Schwab and other sources that say in the new AI-driven economic age that is to dawn soon fears of mass unemployment may not come out to be true. However, new analyses show a different picture.

Daniel Susskind in his *A World Without Work: Technology, Automation, and How We Should Respond*, asks, "Will there be enough work to do for everyone in the 21st century?" To that he replies, "No." He adds, "...the threat of technological unemployment is real."

In this concluding part of the series, I want to think about how the Muslim Ummah as a whole (on all continents where people live) will be situated in the new age of uncertainty. The first thing that bothers me is the inadequacy of most Muslims in the context of education and training required to fit in the work, business and socio-political environment of the new age. We have to address this aspect of our lives on a priority. When we try to think about education, we have to think of life-long education, which is the new requisite for survival.

As Muslims we have been ordained to create a just and equitable order. This can be done only if we survive. Education is a pre-condition for survival. It is also a pre-condition for creation of an equitable and just order.

Finally, I would like to emphasise that education is the key to future survival and prosperity.

(Concluded)