

HOMO SAPIENS

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Evolution

Homo sapiens is undoubtedly the most intelligent creature that ever existed, together with a favourable anatomy he has come to dominate the world. However Homo sapiens is a flawed species with many shortcomings which may eventually lead to his demise. Homo sapiens is essentially a cave man who lives by the tenet “survival of the fittest” which is a legacy of our time as hunter gatherers. In an increasingly crowded and complex world we have to suppress our warlike tendency if we want to live in peace. With nuclear and chemical weapons we have the potential to annihilate ourselves many times over. Until we evolve into a more benign, more empathic species (by Darwinian evolution?) we will continue to behave as we do - competitive, selfish, greedy, vindictive and homicidal, hell bent on destroying each other.

Homo sapiens has changed very little intellectually since we left Africa and migrated to all parts of the world 100,000 years ago. We have interbred with Neanderthals and inherited some genes which enable us to survive in a cold environment. Darwinian evolution has enhanced certain traits to suit the environment in which we live e.g. the Masai of Kenya are tall and thin to dissipate heat; the Eskimos are short and rotund to conserve heat; people living in high altitudes have larger hearts and lungs to survive in the thin air; animals living in deserts require little moisture and recycle their urine; the fennec fox has large ears with a lot of blood vessels to dissipate heat; ducks have webbed feet, camels and reindeer have broad hooves to support them on soft ground and mountain goats have padded feet for traction in mountainous areas; all adapted for their environment. Black skin can withstand UV light better than white skin and are less susceptible to skin cancer. Africans have evolved sickle shaped blood cells which can fight the malaria virus better than regular shaped blood cells. However in malaria free areas they suffer from sickle cell anemia.

Although we live in a modern high tech society we are still cave people in our DNA development i.e. our Darwinian evolution has not kept pace with our lifestyle and use of technology. For example we still practice hunter-gathering, compete in sports and use weapons which are much more powerful than clubs and spears. A Kalashnikov rifle is much more effective at killing than clubs and spears. We are the only species that kill each other for sport.

Table 1 shows our technological progression over the past 100,000 years. The Stanley Kubric movie “2001: A Space Odyssey” [4] portrays Man’s progression from ape to space traveller.

TECHNOLOGICAL ADVANCES				
Out of Africa 100,000 Years Ago	5000 BC-1000 AD	1000 – 1750AD Exploration	1750 – 1945 AD The Industrial Revolution	1945 AD to The Present. The Modern Era
Nomads, Hunter-Gatherers	Settlements, Farms, Villages, Towns, Cities	Migration Colonisation	Coal, Steam	Refrigeration Air-Conditioning

Cave Dwellers	Agriculture	Marco Polo Columbus Vasco da Gama	Steamships Railways	Electronics. Television
Club, Spear	Boat, Wind, Sail	Architecture	Industry, Factories, Mass Production	Nuclear Energy
Fire	Writing, Reading	Guns, Germs and Steel	IC Engine, Motor Cars	Computers, the Internet
Cave Art	Papyrus, Paper	Printing	Petroleum, natural gas	Cell Phones, iPods, iPads
Interbreeding with Neanderthals	Pottery, Ceramics		Flight, Aircrafts	Rockets, Space Travel
	Metallurgy, Swords		Electricity Generators Motors	Medicine, Drugs
	Temples Architecture		Cities, Skyscrapers Elevators	Electric Cars
	Chariots		Subways	Travel Tourism
	Bow and Arrow		Highways	Renewable Energy
	Guns		Telegraph, Radio, Telephone	Photocopiers 3D Printing
				Climate Change

Table 1. Technological Advances

The high intelligence of homo sapiens has enabled him to innovate, invent and develop tools and appliances that can extend his limited physical capability but it should be noted that only a very small minority of extra-ordinarily smart people (geniuses) have come up with these inventions and discoveries. We have Archimedes; Leonardo Da Vinci, Christiaan Huygens, Isaac Newton, James Watt, Albert Einstein, Maria Curie, Michael Faraday, Nicola Tesla, the Wright brothers, Karl Benz, Rudolf Diesel, Enrico Fermi, Werner Von Braun to name a few. Table 2 below shows what has been achieved.

Because modern man moves around he does not have time to adapt to his surroundings by Darwinian evolution anymore so he alters the environment to suit himself. People can live in the Arctic and in the Sahara Desert. However in introducing innovations, there have been many drastic unintended consequences for the environment and energy supply and demand. Feral species, chemicals, plastics, burning fossil fuels and clearing the land have wreaked havoc and caused untold damage to the environment and native species. Most feral species can thrive in their new surroundings unhindered by the predators in their native surroundings. The dodo bird may be the opposite; they built their nests and laid their eggs on the ground because they had no predators until humans found them. The burning of fossil fuels has resulted in greenhouse gases, acid rain, global warming, climate change, melting ice caps, rising sea level and extreme weather. The use of chemicals has affected many flora and fauna and may have caused the

extinction of some species. People have polluted the land, water and air with their garbage and emissions.

Enhanced Capability

Homo sapiens is the only species of animals to evolve beyond the use of rudimentary tools. A person is relatively weak physically but because of his superior intellect has been able to enhance his physical prowess by using technological aids. He has developed a large brain and can alter his living environment to survive in all climates and eat all kinds of food. He invented language, signaling, writing, parchment/papyrus/paper, printing, science, computing and mathematics for communication. He discovered fire, used water, wind and animals for power; invented the wheel, ceramics, metallurgy; discovered medicines, the sciences, enhanced the five senses with instruments - sight with spectacles, magnifying glass, telescopes, binoculars, microscopes, light, Braille; hearing with loud speakers, megaphones, hearing aids, cochlear implants; taste with cooking, sweet, salt, sour, bitter; smell can be fragrant or stink; feeling by touch, heat, cold and pain.

We can overcome some of our physical limitations with aids, prostheses and bionics. Thus shoes, wheels, skis may be considered to be extensions to our feet and legs; animal skins, clothes, armor, PPE as extensions of our skin; dentures for teeth; cooking, fermentation are pre-digestion aids for our stomach; snorkel, aqualung, diving suit enable us to stay underwater longer and space suits to survive in space thus extending our lungs; gloves, tools and weapons are extensions for our hands; the lever, pulley, gears, crane, engine, horses enable us to do much more work than we can do with our arms and legs alone; exercise, medicines, surgery, acupuncture, mental and spiritual well being improve our health and extend our life.

PHYSICAL AND MENTAL ENHANCEMENT AIDS		
Organ	Function	Aids
Head	Contains the brain and the senses	Helmet, hat, cap, turban, hijab
Brain	Processes information	Computer, calculator, instruments, language, writing, mathematics, science and technology, telepathy, ECG
Face	The senses – eyes, ears, nose, taste, feeling	Mask, disguise, makeup
Eyes	Sight	Spectacles, magnifying glass, contact lens, telescope, binoculars, microscope, periscope, goggles, light, Braille, infra-red light, UV light, X-ray, ultra sound, electron microscope
Ears	Hearing	Loud speaker, megaphone, hearing aid, stethoscope, cochlear implant
Nose	Smell	Fragrant, stink, rancid, putrid, sulphur, halitosis, gas analyzer

Mouth/Teeth	Eating/speech	Dentures, knife and fork, cooking, eating, voice, sound, speech, music
Mouth/Tongue	Taste	Cooking, sweet, salt, sour, bitter, hot, cold
Skin	Feeling	Clothes, PPE, armor, animal skins, heat, cold, pain, pressure
Arms	Lifting	The lever, pulley, gears, crane, engine, rope, grapple, ladder
Hands	Holding	Gloves, tools, weapons, instruments
Fingers	Manipulate	Manipulator grips, tools, caliper, pen, robot
Heart	Blood circulation	Pace maker, bypass, valve
Lungs	Breathing	Snorkel, aqualung, diving suit, space suit
Stomach	Digestion	Cooking, fermentation , alcohol
Legs	Walking, running	Wheels, bicycle, car, cart, plane, boat, horses, ladder, steps, crutch, pole vault, pogo stick
Feet	Standing, swimming	Shoes, boots, slippers, sandals, skis, skates, flippers
Toes	Climbing, dancing	Boots, tap shoes, ballet slipper
Body	Flying	Parachute, hang glider, aircraft

Table 2. Mechanical Aids/Enhanced Capability

Conclusion

People are still essentially primitive creatures in their evolution. The human genome has not kept pace with advances in technology. Therefore people who are basically cavemen armed with Kalnishnikov rifles instead of clubs and spears can be much more effective killers. The mass movement of people in the post Columbian era may have even degraded some DNA which had evolved to match local environmental conditions e.g. light skin colour is more susceptible to UV light damage and melanoma so offers no protection in the tropics. It takes several generations for a genetic mutation to become established by natural selection, we no longer reside in one place long enough to adapt to a new environment by Darwinian evolution.

References

1. The Origin of Species, Charles Darwin
2. The Nature of Things, David Suzuki Foundation
3. Genetics, DNA and the Double Helix
4. 2001: A Space Odyssey, Stanley Kubric
<https://www.youtube.com/watch?v=ypEaGQb6dJk>

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