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Period 1

Research and Planning

Definition of Technology- noun

1. the branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society, and the environment, drawing upon such subjects as industrial arts, engineering, applied science, and pure science.
2. the application of this knowledge for practical ends.
3. the terminology of an art, science, etc.; technical nomenclature.
4. a scientific or industrial process, invention, method, or the like.
5. the sum of the ways in which social groups provide themselves with the material objects of their civilization.

Definition of Evolution- Noun

1. any process of formation or growth; development:

the evolution of a language; the evolution of the airplane.

2. A product of such development; something evolved: The exploration of space is the evolution of decades of research.

3. Biology. change in the gene pool of a population from generation to generation by such processes as mutation, natural selection, and genetic drift.

4. a process of gradual, peaceful, progressive change or development, as in social or economic structure or institutions.

5. a motion incomplete in itself, but combining with coordinated motions to produce a single action, as in a machine.

6. a pattern formed by or as if by a series of movements: the evolutions of a figure skater.

7.an evolving or giving off of gas, heat, etc.

Human Evolution-

Technologies and medicines that address these limitations are constantly being released, developed, and improved upon. More and more enhancement supplements or drugs are hitting the shelves of stores, and are being prescribed by doctors.

It is only recently that we’ve found ourselves actually able to extend our lifespans, our biological abilities, and our intellectual capabilities with technology. For millennia, humans lived within their biological boundaries, never overcoming them. Despite that, humans have always found an urge to become more than what we are, as history and anthropology shows.

Prof. Al-Rodhan believes that humans have an innate nature that compels us to enhance our physical and mental abilities. This drive will eventually bring us to the brink of what he calls ‘Inevitable Transhumanism’, where humans fundamentally enhance their abilities through the convergence and adoption of a number of emerging technologies, such as nanotechnology, artificial intelligence and genomics.

Prof. Al-Rodhan postulates that humans are genetically and neurochemically hardwired to ‘feel good’, and are driven by a number of factors he collectively calls ‘Neuro P5’. These consist of power, profit, pleasure, pride and permanency.

Any technology that enhances a factor in the Neuro P5 is likely to be adopted, since it appeals to the feelings that make us ‘feel good’. This will then push us further and further to a transhumanist outcome, where the human experience is artificially enhanced or changed. Prof. Al-Rodhan believes in the inevitability of this, and describes it not as a question of ‘how’ or ‘if’, but rather ‘when’ and ‘at what cost’.

**Technologies That Enhance The Human Experience**

Human-enhancing technologies tend to be grouped under the all-encompassing term ‘Human Enhancing Technologies’. These do not refer to technologies and tools that treat illness and disabilities, but rather enhance our physical and cognitive abilities past what is realistically biologically possible.

One example is Lockheed Martin’s Human Universal Load Carrier (HULC). This hydraulic-powered exoskeleton was developed at the University of California, and aims to enhance the endurance, strength and speed of soldiers on the battlefield.

It allows soldiers to carry weights of up to 90 kilograms (200 pounds) whilst running at a top-speed of 16 kilometers (10 miles) per hour for extended durations. Although the HULC is still in an early stage of its development, it seems almost certain that this endurance, strength and speed enhancing technology could eventually find itself onto the battlefield, not only transforming the capacities of soldiers wearing it, but also potentially giving the US military a real, tactical edge.

One doesn’t have to stay in the military field to see how HETs can allow us to exceed our biological limitations. Take, for example, the latest piece of wearable technology from Google- Glass. Although it is still far from being a mature product, Glass has demonstrated how it can rapidly enhance one’s **cognitive abilities** past what is considered normal.

* + Cognitive abilities-  brain-based skills we need to carry out any task from the simplest to the most complex. They have more to do with the mechanisms of how we learn, remember, problem-solve, and pay attention, rather than with any actual knowledge. For instance, answering the telephone involves perception (hearing the ring tone), decision taking (answering or not), motor skill (lifting the receiver), language skills (talking and understanding language), social skills (interpreting tone of voice and interacting properly with another human being).

It has been dubbed the ‘Transhumanist’s Swiss Army Knife’, and for good reason. Glass allows users to communicate in languages they’re not familiar with, to ‘offload’ their memory to Google Glass for later recall, and to view meaningful information about their surroundings in their peripheral vision.

And then there are technologies that, although they are nothing more than a distant speck in the horizon, present an encouraging avenue for significant human enhancement. Technologies such as human genetic engineering, may be used in the near future to enhance our capabilities beyond what is biologically tenable.

Animal testing has already shown that subtle tweaks to a genetic makeup can result in increased physical performance. Researchers at the École Polytechnique Fédérale de Lausanne in Switzerland [have been able](http://www.sciencedirect.com/science/article/pii/S0092867411012232) to exponentially increase the strength of mice by genetically suppressing an inhibitor called NCoR1, which resulted in greater muscle growth, improved muscle density, and larger amounts of mitochondria.

The human application of this is still somewhat speculative. Despite that, it remains a probability that one day we could adapt gene therapy and genetic engineering in order to make one live longer, become more intelligent, or able to perform significantly demanding physical tasks.

Physical Effects-

These studies on the physical risks of playing computer games suggest that children's extended computer use may be linked to an increased risk of obesity, seizures, and hand injuries.

**Risk of Obesity**

Sedentary pursuits, such as watching television and using the computer, are believed to be an important environmental factor contributing to the fact that 25% of children in the United States are overweight or obese. Although there is no research that systematically documents a relationship between obesity and computer use, evidence does exist that obesity in children is linked to excessive television watching, that is, five or more hours per day.

**Other Physical Effects**

Since the early years of computer game technology—beginning with video games in the 1970s, followed by the growing popularity of stand-alone game systems like Nintendo in the 1980s16 and the rise of the personal computer in the 1990s—playing games has been the predominant computer activity for children overall. Studies indicate, however, that playing computer games exposes children to a number of physical risks, including seizures, hand injuries, and changes in heart rate.

For example, some research suggests that playing computer games may trigger epileptic seizures in certain users. One research team reviewed 35 reported cases of video game–related seizures and found that abstinence from video games was the preferred treatment, compared to anticonvulsant medication. It appears that the “flicker frequencies,” or quickly flashing images, in some video games can trigger seizures in patients with photosensitive epilepsy.

Excessive computer game playing also has been associated with a form of tendinitis, called Nintendinitis, which is a sports injury characterized by severe pain in the extensor tendon of the right thumb as a result of the repeated pressing of buttons during game play.

**Staring at your phone all day might wreck your spine.**  
Recent research by New York spine surgeon Kenneth Hansraj found that our constant Instagram scrolling and incessant text messaging may be hurting our backs. The study found that when you tilt your head 60 degrees to stare at your phone, you’re putting 60 pounds of pressure on your neck. Previous research also shows that sitting in front of our computers all day can also negatively affect our stature.   
  
**Your phone could cause blemishes.**  
Germs pile up on our phones thanks to our external environment, which could trigger acne or eczema outbreaks, Everyday Health reported. Luckily, the problem is easily fixed. Experts suggest cleaning and sterilizing your phone, as well as going hands-free whenever possible.

**All that messaging may be giving you text claw.**  
It may not be an official medical diagnosis, but the symptoms are still very real. Any repetitive motor activity — like grasping your phone too much — could cause muscle tension or irritate current conditions like tendonitis. It could also cause forearm or wrist pain.  
  
**Too much screen use could could strain your eyes.**When you were a kid and someone called you out for falling asleep you’d say, “I’m just resting my eyes.” It may have been a cover up then, but it’s important now if you’re stuck staring at a computer all day. Too much eye contact with our screens is exhausting our sight, causing our vision to become blurry and drying out our eyes. Nearly 70 percent of American adults say they’ve experienced symptoms of digital eye strain at some point in their lives, USA Today reported.  
  
**Constant tech-indulgence may be giving you a headache.**  
If you stare at a screen for too long, you may experience tension headaches as another result of digital eye strain. Reading dark text on a bright screen can lead to muscle spasms at the temples. To alleviate the pain, adjust the contrast on your screen.

General and excessive use of technology is associated with a variety of health risks. Users run the risk of developing eThrombosis, carpal tunnel syndrome, mouse elbow, repetive use injuries, eye fatigue, migraines, obesity, sleep disturbances, drowsy driving, sleep deprivation, backaches, eating irregularities, and poor personal hygiene.

**Computer Vision Syndrome (CVS) (Eye fatigue)**

Research presented by the American Optometric Association indicates that “more than seventy percent of users that work on a computer monitor (which is over 140 million) experience computer vision syndrome (CVS) or eye fatigue. Prolonged computer use can result in eye strain and impact eyesight in kids as well as adults. Anyone that sits more than 2 hours on a daily basis on the computer is at risk of some degree of computer related eye fatigue."

**Obesity**

There is a link between media use and obesity in technology users. Generally, the more hours spent in front of a screen, the greater the risk of obesity.

Mental Effects-

Communication and interactions have become very technology-based, and usually occurs through technological methods such as emails, mobile phones and social networking websites instead of a physical interaction. This increased use of technological methods and social networking websites to communicate, maintain and create relationships, is replacing conventional physical interactions that promotes social cohesion integration. It is believed that there are consequences associated with the use of technology for communication. Relationships developed online individuals are relatively weak, and interactions that occur without physical characteristics will lack regulation, structure and norms. Hence, online social interaction has resulted in a generation that **lacks emotional attachment** towards their online relationships, and caused them to shift from traditional physical communication to communication via virtual networks.

The high use of technology is also causing them to become **socially isolated.** The development of weaker online relationships along with the replacement of physical interactions are associated with the use of social networking sites. It has been stated that the characteristics of a normal interaction such as emotional intensity and intimacy are being replaced by those of an online interaction, which includes self-presentation and similarity. As a result, individuals participate in interactions without face-to-face contact, create relationships that lack social cohesion and are becoming alienated from civic or everyday life. Furthermore, a report by the Australian Government stated that an association exists between increased time spent in a technology-based environment and an **increased risk of becoming disengaged from both families and physical communities.** In addition, the frequent use of technology appeared to be decreasing the social interaction of young people with their peers, which further suggests that technology use is associated with isolation. **Social isolation caused by using communication technology can also be discussed from another perspective.** A small proportion of the young population, through personal choice or barriers to access, may not utilise technology. However, the importance of technology devices to the society continues to increase and this may cause the small proportion of the generation to become increasingly isolated. We can therefore see that use of technology for communication is causing people to become **disengaged and socially isolated.**

The increased use of technology for communication is also associated with **cyber harassment or bullying.** Communication technologies such as email, mobile phones, chat rooms and social networking websites are often utilised for bullying, and this is more prevalent amongst the younger population of generation Y, namely adolescents and younger adults. It has been suggested cyber bullying can have a significant impact on a victim’s emotional well-being and may also affect their use of online resources. **This can therefore lead to the social isolation of an individual or affect one’s mental or psychological well-being.**

Technology is a negative influence on us because it separates individuals from reality. The iPod is one example; by putting in your earbuds and immersing yourself in music while in public, you are disconnecting yourself from the real world.

The ability for people to surround themselves with the familiar by using their iPod is appealing because it rarely provides the listener with something unexpected or unknown. However, it can be argued that this is a bad thing. By constantly being cut off from personal interactions and new experiences because of a technological device, a generation with substandard social abilities is being groomed. If we do not have to face reality by experiencing new things, making personal relationships, and problem solving, then we will never be able to function as adults.

Technology hinders personal communication, which negatively impacts our age-group. Although “our culture heralds the Internet as a technological wonder, there are suggestions that Internet use has a negative influence on individuals and their social skills,” writes Bob Affonso in his article, “Is the Internet Affecting the Social Skills of Our Children?” Data shows that those who use the Internet frequently spend over 100 minutes less time with friends and family than non-Internet users, according to Norman H. Nie and D. Sunshine Hillygus in their paper “The Impact of Internet Use on Sociability.”

The Internet actually detracts from the communication abilities of society, especially the young. When our communication skills are gradually lessened, we begin “spending less time talking to families, experiencing more daily stress, and feeling more lonely and depressed,” writes Affonso. In our formative teen years, lack of personal communication due to excessive Internet usage can have an overall negative effect on mental and physical health. Communication skills are critical for everyone, yet use of the Internet is undermining this development.

Technology negatively affects us by perpetuating the mindset of immediate satisfaction. The creation of various portable technological devices has slowly ingrained the idea of instant gratification. With gadgets like the PS3 or Nintendo DS, which allow users to play games anywhere, or cell phones that let us keep in touch virtually everywhere and at any time, we grow up learning that whenever we want pleasure or enjoyment, it will automatically be granted to us.

Some argue that the Internet has a positive effect on social interactions because it allows us to form friendships online. There are dangerous people on the Internet who are a threat to young people. The ability to access anything and everything someone posts without knowing if their intent is malicious is a downside to the open transfer of information available on the Internet. While Coget and Yutaka claim that “the Internet can foster openness, self-confidence, and a greater sense of ease and comfort in dealing with others … the Internet can even provide opportunities by freeing those who are too depressed to conduct a social life in the real world,” it is extremely unhealthy to make and sustain all of your social interactions online. We will not be positively impacted by communicating through a computer screen if we already do not have the self-confidence to socially interact in reality.

I believe the advancement of technology has negatively impacted our social interactions because it detaches us from what is happening around us, obstructs communication, and spreads the concept of instant gratification. Society must be able to utilize technology while not allowing it to impede social interactions, particularly for those who are easily influenced during our formative years. Our world must learn to embrace technology without allowing it to negatively impact the creation of functional adults in society.

**Citations-**

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