The Ethical Cost of Technology

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The question of right and wrong is never black and white, but as the general public associates question of ethics in the same category. Type "right and wrong" in Google and it automatically generates "right and wrong ethics." It was not too long ago someone asked me "what is the difference between ethics and morals in making decisions." According to the Oxford Dictionaries ethics are "moral principles that govern a person's or group's behavior" and morals are "a person's standards of behavior or beliefs concerning what is and is not acceptable for them to do" After examining this topic I came to the conclusion that the morals change ethics. Ethics are the derivative of morals. When technology is introduced to the question of ethics, it adds a new dimension to analyze.

The view as what morals have become is that its society's accepted answer of ethical question. In Tom L. Beauchamp and James f. Childress, Principles of Biomedical Ethics (Fifth Edition) it states, "In its most familiar sense, morality refers to norms about right and wrong human conduct that are so widely shared that they form a stable (although incomplete) social consensus. Morality, as a social institution, encompasses many standards of conduct, including moral principles, rules, rights, and virtues." Imagine a political figure who is publicly asked a question from an audience against embryonic stem cell research about their position on stem cell research. The political figure knows that a loved one that has been a direct benefactor of this research. The political figure is in a personal moral dilemma of pleasing the crowd or conveying a story of success that would so against the crowd's morals. Then there is the ethical question to whichever answer they choose to give because as a society people are split on supporting or not supporting such new research. As technology and science advances the grey zone of what sacrifices essentially become required are promoting issues of ethical predicaments.

As I was writing this essay, I was questioning the cost of each Google search I made to seek information on this topic. Currently anytime, the public uses Google they agree to give up information that Google can use for any commercial purpose. I cannot remember the exact number of Google searches I made today, but I bet it is over fifty. If every time Google gathers my search, location, language, links clicked, duration spent on link, and who exactly knows what else is collected; that makes me one valuable customer. The interesting part of this is that I am completely fine with this, because I agree to use this service free in exchange for my information. I find it fascinating that my information is in its own way a form of currency. Not only is my concrete information valuable, but my opinions provide another set of information. Even if my opinions change a month later, my opinion at that instant assist in creating information that someone saw value in. This temporary information was critical in the last presidential elections to gauge whom people are predicted to vote for. Google's motto is simple "don't be evil." Since there is a

negative stigma with large corporation making huge profits, people wonder what Google is exactly formulating with our personal information. This issue of what evil is becomes a profit vs. new ethical norm issues at times for the company. No one in the world is forced to use Google so those that like their privacy have a choice. In 1949 Pierre Dos Utt stated something that is still very relevant in today's information age "there ain't no such thing as a free lunch." We use our information as a currency without double thinking our actions. If I walk into a large complex like a mall, airport, or convention center and if our smartphone's Wi-Fi setting on then, my phone will try to automatically connect to the free Wi-Fi. Once my phone is connected, the Wi-Fi system can track where I am in close proximity and how long I stay there. This is a perfect opportunity for a marketer to send you promotions through geopositioning technology.

Monetizing information is not a new concept, but trying to have complete right over natural information is an ethical issue according to all nine United States Supreme Court judges. Almost a year ago, a company based out of Utah called Myriad Genetics tried to patent rights to the human genes. This was an odd concept to me because the human DNA is the blueprint to our lives and trying to patent something that all humans are born with is strange. This case was taken to the United States Supreme Court and the ruling was an unanimously vote stating that the human gene is not patentable. The other side of this story is that complementary DNA (cDNA) can legally be patented. The cDNA is also known as synthetic DNA since they are not found in nature, but manufactured. Dr. Greely from Stanford University is a bioethicist and law professor said, "In the longer run, as we move into an era of synthetic biology, where we start trying to improve upon nature, then I think [cDNA patents] will be important." In my opinion, allowing the patents of cDNA will have very little impact on genetic testing anytime soon, so limiting patents to specific entities should not affect diagnosis testing.

It is tough for me to think about technological ethics without considering the energy supply of the future, which I think are renewables. Then I wonder how far in the future renewables are going to out supply the world's growing energy demand of hydrocarbons. According to the International Energy Agency (IEA) hydrocarbons currently, make up about 85% of the global energy need by 2035 that percentage according to predictions will not fall below 70%. I believe renewables are coming and in the meantime, hydrocarbons have to continue to supply this global need. The bad news here is that "easy oil" does not exist anymore. In the last ten years energy companies have spent 400% more in exploration cost with only seeing 15% increase in production. This pushes the industry as a whole to turn toward seeking new locations of exploration and production. These locations consist of Myanmar, Tanzania, Indian Ocean, and even the artic. Then comes the major question of how do you make these areas economically producible without damaging the natural environment. Generally, technology itself does not raise questions of ethics it is a matter either of how the technology was developed or of how it is utilized. From the development to the discipline, the consequence of usage comes a personal perception. For example, I am going to mention a topic that I am very familiar with: hydraulic fracturing. Hydraulic fracturing was invented in 1947 and over the last 40 years, it has been used effectively extract hydrocarbons from their reservoirs. The thickness of the average human hair is 10-50 µm wide, while the pore inside gas shale reservoirs are between 4-10 nm wide. This was quite the astonishment to me to believe that companies drill two miles vertically down and

then turn the entire pipe and continue going two miles horizontally to hit their target stopping point a size of a microwave. Recently though the pubic, outside the oil/gas industry, have taken a negative outlook on this form of extracting hydrocarbons relating it to health and environmental concerns. I completely understand the concerns and I can related to it, because if the process of hydraulic fracturing conducted improperly then impacts can be extremely harmful. Claims of air pollution, water pollution, soil contamination, and even possible earthquakes are being blamed for hydraulic fracturing. Then comes the issue of how should we as human continue to supply the energy supply in the short-term at relative low cost. In German, there is only have one fully operating coalmine and Germans are reducing their hydrocarbon dependence so they can focus on renewables, like solar energy. Renewables are the ethical choice, but are currently much more expensive. Automotive manufacturer BMW had to produce carbon fibers materials for their i-series hybrid vehicles. To produce carbon fibers takes a lot of energy, and since the cost of energy in German is so expensive, they decided to build their factory that produces these carbon fibers to Portland, Oregon since the energy cost is much lower at that location. I firmly believe renewables are the wave of the future and capital must be dedicated in researching methods to make it more commercially friendly.

From political opinions, medical actions, to energy security concerns our morals are manipulated based on factors of environmental exposure. This exposure can consist of personal religious beliefs, geographic location, occupation, financial state, and family. Once our morals are established, it comes an integrated form of our autonomy mindset where our decisions are almost an involuntarily action. If our morals are challenged with technological norms of society, we feel edgy, even though it might have benefits to it. Our ethical views as society are influencing our morals or what is acceptable and what should be rejected. Various forms of media around the world have become easier to read, watch, and share. The exposure to this information is breaking down ethical boundaries that once existed. Information is power, but what information is right or wrong is where the grey area sits. Well that my friend is where the beauty is of our diversity is, our morals will have to play a role

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