

Changing the Direction of Society Through Human Enhancement and Society's Reactions.¹

By Philip Santa-Maria

We have to create ourselves as a work of art.

-Foucault

“Alas,” said the mouse, “the whole world is growing smaller every day. At the beginning it was so big that I was afraid, I kept running and running, and I was glad when I saw walls far away to the right and left, but these long walls have narrowed so quickly that I am in the last chamber already, and there in the corner stands the trap that I must run into.”

“You only need to change your direction,” said the cat, and ate it up.

-Franz Kafka “A Little Fable”

Humans live out their lifespan knowing that at some point there will be a moment where we cease to exist. On our linear timeline, we emerge as intelligent and rational beings from the unification of our parents' DNA. We then spend our lives gaining knowledge, applying it to our work, and at the same time striving for the meaning of our lives, our purpose of walking on the Earth for only a short while. Either way, we all know that death is around the corner. This process is essentially what it means to be human, and to be human is inevitable.

Our societies, our religions, our philosophies, and even our science have been gauged around the premise of mortality. Humankind has inherent characteristics that cause the questioning of its own identity in the context of reality and meaning. In the book of Psalm 8:4, the question is poetically expressed in a theistic framework, “What is man that Thou art mindful of him?”² It festers madly, this same question, in the minds of all of us. Science and technology are deeply involved in the resolution to questions such as this. The current states of technological advances in the areas of artificial intelligence and biotechnology have only fueled the burning questions within. They have put the answers within theoretical reach of scientists and philosophers.

It is only a matter of time until we grab control of our own mortality, and forever shift the paradigm of what it means to be human. This phenomenon could change everything that

fundamentally explains our humanity by creating unlimited life spans. Immortality is a left jab to the meaning of life because without the natural human characteristics of birth, death, and regeneration, we are not human. And when our bodies physically decompose, leaving us with prosthetics, enhancements, and replacements, we would simply be an intelligent organism in a mechanical body. Technology has already begun recreating human parts, and will lead us eventually to a time where the definition of what it means to be human will be far contrasted to the meaning today. It will be in this time that religion will be challenged, and our theories of existence will be put to the test. We will have reconstructed society starting from the physical construction of the individual.

This will be our action, but what will be the *reaction* of society? What new cultures will develop as a result? This paper will examine recent advancements in the field of human enhancement, and will address questions concerning the sociology of science, more specifically the sociology of technology. By changing our direction, we allow scientists to study and identify possibilities in reality instead of frozen facts. As Matthew David explains in his text *Science in Society*, “Being always contains many possibilities for becoming,”³ which applies to our physical reality as well as our social reality.

By tracing the chains linking recent technologies to their corresponding social upheavals, I will be showing that the future of technological advancement and guided evolution is grim if left in the hands of any governmental form of control over progress, also known as *democratic transhumanism*.⁴ What has worked, and what will always work is the most minimal set of boundaries or regulations on progress which always come from government control, also known as *libertarian transhumanism*.⁵ Many people hear the words libertarian and automatically relate it to an anarchist state which is completely untrue. The libertarian system recognizes the need for government, but demands that government interference be the absolute minimum.

Lastly, the most important variable will be the shift in our society towards what is called *technological existentialism*, a form of ethical neutrality in science. That is, removing the notions that technology is good/evil, right/wrong, and human/inhuman.⁶ Frankly, it is what it is. Technology is merely utilized to fill in the gap of normal human potential. Gary Lee Downey bluntly perceives cyborg anthropology as, “a serious challenge to the human-centered foundations of anthropological discourse.”⁷ Because the cyborg movement in anthropology is about freedom from biological constraints, I would readily reason that it should also be about

freedom from social constraints, whether or not such constraints come from political, religious, or ethical facets in society.

Gauging Attitudes Towards Technology

For my research I have created a survey. The survey asks questions about the individual's views of current technology and also asks questions about the future technology of prosthetics. By analyzing the results of the survey, I will determine if certain ethical views of current technology correlate with views of hypothetical future technology. I will try to find a connection between experience with computers, or even growing up with computers, and acceptance of biological enhancing technology. Therefore, my hypothesis is that participants in the survey with high familiarity and experience with computers, regardless of formal education or political affiliation, will be more accepting of transhumanistic cyborg technology.

I have also created a diagram connecting the social elements that will react depending on the status of one another. The down arrows signify 'reliance'. For example, the *politics* depend on *ethics*, or the *motivation* depends on *politics*. The chart is arranged to support my hypothesis concerning the state of science and technological advancement as it heavily stems from progress in its correlating facets in society. In the case of cyborg technology, the science therefore relies ultimately on the views of the major more popular belief systems.

CULTURE OF BODY MODIFICATION

Tribal / Tradition / Caste

to

Adornment

to

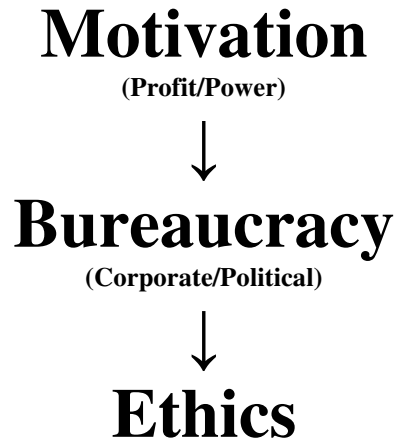
Utility / Transplant / Prosthetics

to

CYBORG SOCIETY

Science





The Inventions of Humanity

“Man is an invention of recent date. And one perhaps nearing its end.”
-Michel Foucault

Since the creation of the term “cyborg” by Manfred Clynes⁸, the idea of cybernetic organism has spread like wildfire throughout the realm of science fiction and comic books. Many of us have even heard of certain Marvel Comics super heroes such as Wolverine or Iron Man. These are just two of the hundreds of cyborg characters in the genre of science fiction that includes Philip K. Dick and Arthur C. Clarke. However, the make-up of these two famous characters in particular literally illustrates the vision we have for emerging technology. Wolverine and his enhanced indestructible skeleton, Iron Man and his mechanical suit of computerized body armor, are fictional representations of ideas we are currently seeing today in military research for the creation of a super-soldier.⁹ However, more commonly in the real world of average citizens, these modifications or prosthetics are administered in the medical field.

Natural organ transplants have been occurring since 1951 with the successful operation of a kidney transplant, to 1967 with the first successful heart transplant, up to 1981, the first successful lung transplant.¹⁰ These leaps in medicine are indeed fantastic, but the patient never receives an organ that will last forever, so technically it prolongs the inevitability of death. Death is the one commonality that brings every human being that has ever existed together. Therefore, we can reasonably conclude that to be free from death is to be free from being human.

The biggest sociological question of science is simply: Does science facilitate human emancipation?¹¹ The debate is concerning the two ideals of truth and freedom.¹² Modernists in the field held true that more truth led to more freedom, and more freedom led to more truth.¹³ However, Post-Modernists doubt all links between freedom and truth, and challenge the very foundation of scientific truths.¹⁴ Still, research in the sociology of science and technology has been contained through only a few distinct theoretical perspectives: feminism, Marxism, and different ethnographies.

Published in the *Socialist Review* in 1985, Donna Haraway's 'A Cyborg Manifesto' echoed Marx and Engels' *Communist Manifesto* of 1848. Haraway's work remains one of the most important works in the cyborg field, and has set the basis for theoretical frameworks on the subject of Cyborgs, namely feminist and socialist theories.¹⁵ However, due to her upbringing as a Roman Catholic, a good amount of imagery reverts back to her original beliefs and therefore could be analyzed better in an anti-religious context rather than a scientific context.

Just the ideas of recent innovations in genetics, such as cloning and stem cell research, have been pushed around and abused by the democratic process. While the exponential advancement of computer technology seems to give the image of geeks working in garages, genetic science is a scarier vision. One imagines Dr. Frankenstein, or an evil mad scientist with wild white hair. These are of course silly generalizations. However, since politics, economics, and technology are so interconnected, we must step back and view these collapsing boundaries and ask ethical questions about the current state of our society.

Now considered to be orthodox and outdated, Marx's original views of science and technology were overlooked during a radical scientific movement in the 1960's. Marx viewed that technical change was the fuel for social change, "At a certain stage of their development, the material productive forces of society come into conflict with the existing relations of production...From forms of development of the productive forces these relations turn into their fetters. At that point an era of social revolution begins."¹⁶ The development of technology and science are bound up with the development of the 'means' of production.

Critics to Marx and Engels in the twentieth century's Frankfurt School were very outspoken about science and technology in society. Specifically, Herbert Marcuse and Jürgen Habermas were adamant about stating the errors of orthodox Marxist ideology in underestimating the role of science and technology. Marcuse is most well known for identifying

a link between science and domination in his work *One Dimensional Man* in 1964. After WWII, it became apparent that elite politicians cloaked their true nature with scientific jargon to seem progressive, but their drive for knowledge is fueled by a need for control and power rather than simply understanding the rules that govern the universe.¹⁷ In Habermas' *Towards a Rational Society* in 1971, he talks about the shift of politics into technical administration and the danger that comes with it as well as the idea that scientific knowledge is not immune from broad cultural or narrow political influence."¹⁸

Therefore, we can conclude that, though technology is essential (as the means of production) for social change, there is danger in politicians who use technology for power and in government leaders who act to administer technology. Finally, and most importantly, knowledge gained from science is always affected by culture, more specifically religion, and politics. Is it realistic to therefore conclude that science, which is so heavily influenced by power struggles and ethical backlashes, will prevail in being the tool to strengthen the will and prolong the moral lives of individuals?

It depends on the individuals themselves.

Death as a Disease

*"There are no such things as incurables;
there are only things for which man has not found a cure."
--Bernard M. Baruch*

There are only a few reasons that technological advances occur in American society: profit, power, and the admirable yet under funded view of art for art's sake. Profit, a motivation of many corporations, is the end result of examining the market for what people want or need, getting the product in the hands of the people in the most cost effective manner, and finding a way to make the most money in the end.¹⁹ Power, the motivation of government, is the end result of state funded technological development solely for the advancement of the state and the state's interests. In his work *Strategy Formulation*, I.C. MacMillan puts it best, "Power is the capacity to restructure actual situations."²⁰

Few and far between do we see scientists who experiment for the sake of gaining knowledge, sometimes because such experiments would be deemed illegal or immoral. Either way, the technology of the post human, that which combines the organic with the mechanic is

very likely to cause a stir in the public. The experiments and breakthroughs that cause nationwide pandemonium usually involve genetics. Hot debates include stem cell research, cloning, nanotechnology, and human/animal hybridization. But it was not long ago when the first heart transplant using a pig heart was the immoral headline of the week. The truth is that science is offensive. To uncover information in a society that covets the lack of information is a difficult task. To speak of the next step in human evolution involving machines is junk science to creationists, for example.

The problem rests in the motivation of scientists, and though the motivation is tied to several cultural, social, and economic influences, we must remember that we have come pretty far in societies that fear and limit scientific and technological progress. In 17th century Italy, father of science Galileo was forced to recant his heretic views of a heliocentric system. He was sentenced to house arrest, and forever remains the western world's most famous case of government doctrine, in this case the doctrine of the Catholic Church, interfering with progress.²¹ Today, the heliocentric system is fact.

The federal government as much as ever involves itself with scientific progress. It is similar to Hollywood movie producers. The producer's general responsibility is to provide the funding needed to complete the film, an investment, and in return, to make a profit. However, Hollywood producers all too often get involved with the actual movie making process. They frequently change script ideas or complete plot lines altogether leaving the public with movies such as *I, Robot* where the only resemblance from the Asimov book is the actual title.

With federally funded science, the same thing happens. The scientific research is completed in a way that pleases the moral majority or it is not funded, essentially killing any chance of progress. Stem cell research, which promises to discover possible treatments for human illness, suffers from lack of government funding. As the media often covers, stem cell research involves human embryos and is therefore extremely controversial. The current administration is against Federal funding of the research that it deems immoral as it has a 'pro-life' stance.²² Since the research is very expensive, it is currently dead in the water.

What of Transhumanistic technological innovations? Only a few have made headlines. Though we live in a society where humans and machines exist symbiotically, the only advancements that tend to garner massive amounts of Google searches are those in entertainment. During my research, it was very hard to find any popular opinion information on

this topic. I made it my responsibility to create a survey that would give me the views of a sample population. After conducting the survey with 22 people in person, and 26 online, I ended up with 48 completed surveys from people with completely diverse backgrounds, ethnicities, ages, and education.

The Dirty Game of Politics

“The union of the political and the physiological has been a major source of ancient and modern justifications of domination, especially of domination based on differences seen as natural, given, inescapable, and therefore moral... We have allowed the theory of the body politic to be split in such a way that natural knowledge is reincorporated covertly into techniques of social control instead of being transformed into sciences of liberation.”

--Donna Haraway *Simians, Cyborgs, and Women*

In the field of political sociology, there are many subfields. One of the main focuses is on how public personalities, social movements and trends outside of the formal institutions of political power affect politics.

What do politicians really know about technology? Max Weber wrote about the politicians need to control every aspect of their society, even parts that they don't understand, “It is as if in politics...we were deliberately to become men who need ‘order’ and nothing but order, who become nervous and cowardly if for one moment this order wavers, and helpless if they are torn away from their total incorporation of it.”²³ To further prove many politicians ignorant nature about technology, I present Senator Ted Stevens on the internet, “The internet...*it's a series of tubes*. And if you don't understand those tubes can be filled and if they are filled, when you put your message in, it gets in line and its going to be delayed by anyone that puts into that tube enormous amounts of material, enormous amounts of material.”²⁴

German sociologist Max Weber warned his readers all about too much bureaucracy in our government. In his work *The Theory of Social and Economic Organization*, Weber talks about bureaucracy coming from kingdoms and ancient militaries all the way to modern society where it exists in political parties, churches, business, and educational systems.²⁵ Weber goes on about the faulty politicians in David Beetham's *Max Weber and the Theory of Modern Politics*. He speaks of the qualities of a real politician with conviction, “the real leader's task is not merely

to compromise interests as if politics were like a market place, but to take a stand on issues that transcend material interests.”²⁶

He continues the argument in *Economy and Society*, “A person is more likely to care about such issues, and be willing to sacrifice office to conviction, if he is financially independent - he must live FOR, not OFF politics.”²⁷

The fuel in the fire of the stem-cell research agenda has been big names, celebrities, radio shows. You name it; there is always someone in the public sphere promoting the awareness and benefits of stem-cell research. Public personalities like Michael J. Fox are appearing to support the research, while unfortunately there is a counter-movement of celebrities like Jim Caviezel, better known as playing Jesus in *The Passion of the Christ*, who are battling it all out on commercials.²⁸

These public figures garner much more support for each of their causes than any politician ever will. However, Hollywood actors are infinitely more likeable and recognizable. Who wouldn't want to support one of these two men? In one corner we have Marty McFly from *Back to the Future* (or Alex Keaton from *Family Ties*, whichever you prefer). In the other corner we have Jesus of Nazareth from Mel Gibson's mega-hit. What a fight! These public figures and these politicians, who are very one-sided and counter-scientific in their opinions, are influencing American citizens by the millions.

The World Church of the Operating System

“Morality, when formal, devours.”
--Albert Camus

The reverberating problems in our society ultimately stem from ethics, which for the most part are of a religious nature. As stated before with the stem-cell research bills, organ transplants and blood transfusions which are referred to by some sects of Christianity as unclean, and in the past with new scientific discoveries that challenged dogmatic law, there is always a head on collision, a no holds barred street fight with advances of science and the ethics of the society. It is always intense because our ethics are a major form of the way we identify ourselves, and sometimes a reason or purpose to living altogether. Therefore it is not surprising that such violence and upheaval take place during an ethical debate.

Ethics are subjective. And that is not my subjective ethical opinion, rather a conclusion that many scientists and social scientists have come to regard as true. The idea of cultural relativity only further stresses the subjectivity of cultures, of peoples, of eras. If we step out of our own view, and look over the many ideologies of the world, we notice that truly there is no correct value system, nor is there a master system that supersedes all others. This is the cross-cultural perspective, and a neutral view of ethics.

Max Weber wrote a brilliant essay in 1917 titled “The Meaning of Ethical Neutrality”. It was a rebellious work which criticized the preceding generation’s view which was headed by a German named Gustav von Schmoller. Schmoller was one of the great minds of the German Historical School of thought with which Max Weber couldn’t disagree more. The trouble consisted of a simple disagreement about the existence of a true system of values, even if it extends beyond the systems of earth. It would have to be a universal system that encompasses the essential values that we all hold. Suffice to say, Weber wouldn’t have it.²⁹

Weber saw that this was another creation of unnecessary opposing viewpoints, parallel to party politics in a heavily bureaucratic governmental system. He focused greatly on promoting unbiased scientific progress, as well as proclaiming that the ‘statesmanlike’ compromise would not cut it either.³⁰ This type of thought was repeated in the works of famous existentialist Jean-Paul Sartre, and writer Albert Camus. Also, it is similar to Kierkegaard and Nietzsche and their existentialist dimensions.

In a sense, Weber is expressing the same idea as he did in his essay *Science as Vocation*, “According to our ultimate standpoint, the one is the devil and the other the God, and the individual has to decide which is God for him and which is the devil. And so it goes throughout all the orders of life,”³¹ meaning that the individual must choose their values at the end. This supports the notion that, even though the individual is part of a society, he or she is alone with his or her choices, values, and conscience.

All of this ethical banter is very important in the field of technology. Technology is derived from the need of a society to fulfill or enhance human capability where it naturally can not do so alone. It is created by man, and at the same time man calls it good or bad for one of any reasons. But why is this so? The technology certainly does not function without the input of man, so why should the consequences of technology fall upon technology itself? Granted, many technological enhancements are dangerous, and many more are designed to hurt, kill, or

eradicate a whole people. Still, the ethical problem is in the design which is the inherently human aspect. Therefore, in ethical neutrality it is unacceptable to deem inanimate objects as immoral or unethical, but instead deem immoral or unethical the actions in which certain technologies are used.

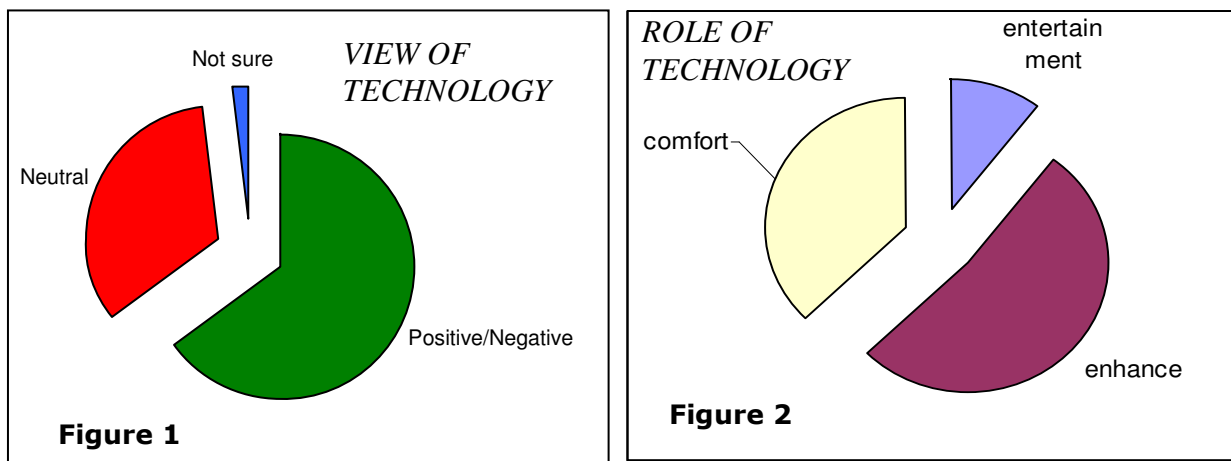
However, it must always be that anything deemed is only the opinion of the individual and can never supersede any other person's opinion.

Let's Look at the Data

"Get your facts first, then you can distort them as you please."
--Mark Twain

The purpose of the survey was to simply gauge how this randomly sampled population perceived technology's role in society. I also wanted to find a correlation between factors such as social ideologies, experience with computers, age, political stance, education, with their beliefs about current and future scientific progress, and how it should be conducted.

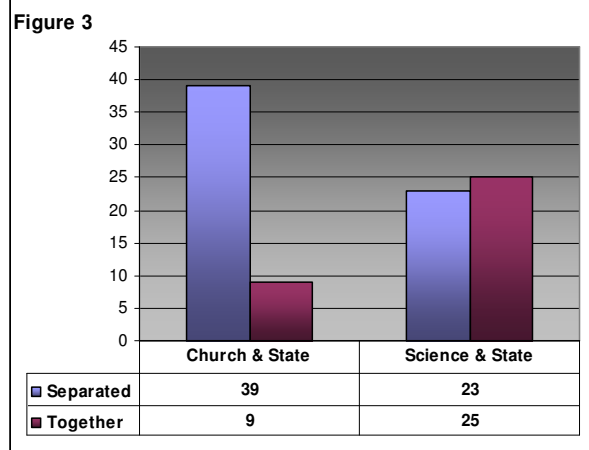
The first question is "How do you view technology?" My first surprise came with the answers that showed 31 out of 48 participants answering "something that can be inherently positive or negative" which is shown in Figure 1. Then a majority of sample, 25/48, in the second question which addressed the role of technology chose the answer "enhancement" with a large minority, 18/48, picking "comfort" seen in Figure 2. Thirty of the participants answered that they use a computer daily. The other 18 answered weekly in question 3. Twenty-six use computers in their jobs, for personal use, research and for video gaming in question 3a. Again, this is a highly familiar group in different facets of computer use.



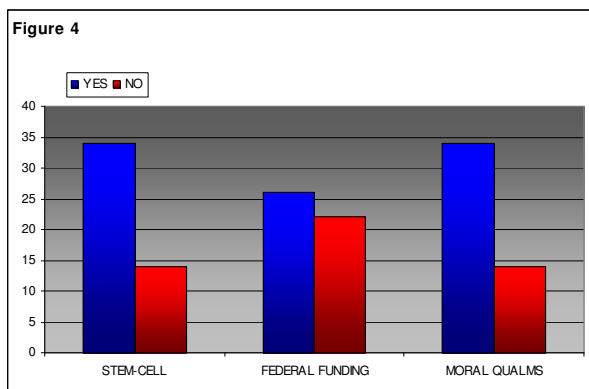
In question 3b, twelve of them consider themselves “very experienced”, while twenty-four consider themselves “moderately experienced”, ten label themselves as “intermediate”, and two as “novices”. This means that this particular group for the most part

is highly familiar with computers. A group that is highly familiar with computers and that sees the role of technology in society as enhancement is a correlation that I was looking for. On the other hand, this highly familiar group also views technology as either positive or negative.

Questions 4&5 shown in Figure 3 were designed to pinpoint the participants’ specific view of the role of science in society. On the “Separation of Church and State”, a large majority of 39 were for it, while 9 would prefer the state to have some sort of moral role. On the “Separation of Science and State”, only 23 were for it, leaving the majority 25 against it. Question 5 in particular gauges who is a Libertarian Transhumanist and who is a Democratic Transhumanist. And, the slight majority of the participants consider themselves democratic transhumanists, meaning they favor government intervention when it comes to scientific progress. This result disappointed me as I thought a group highly familiar with computers and technology would have the opposite viewpoint.



The next nine questions were designed to measure the type of outlook each individual participant had concerning recent and future technological advancements. Questions 6 through 8 rate the participants’ opinions of stem-cell research. Questions 9 through 14 rate the participants’ opinions of prosthetics and human enhancements. The stem-cell responses were what I had expected, a mixed and balanced set of opinions. The majority of the group supports the idea of stem-cell research. The larger portion of 34 supported while a smaller group of 14 was against stem-cell research all together. But, when asked if they supported federally funded stem-cell research, the story changed a bit. Eight participants switched sides as soon as the research became federally funded. The results can be seen in Figure 4.

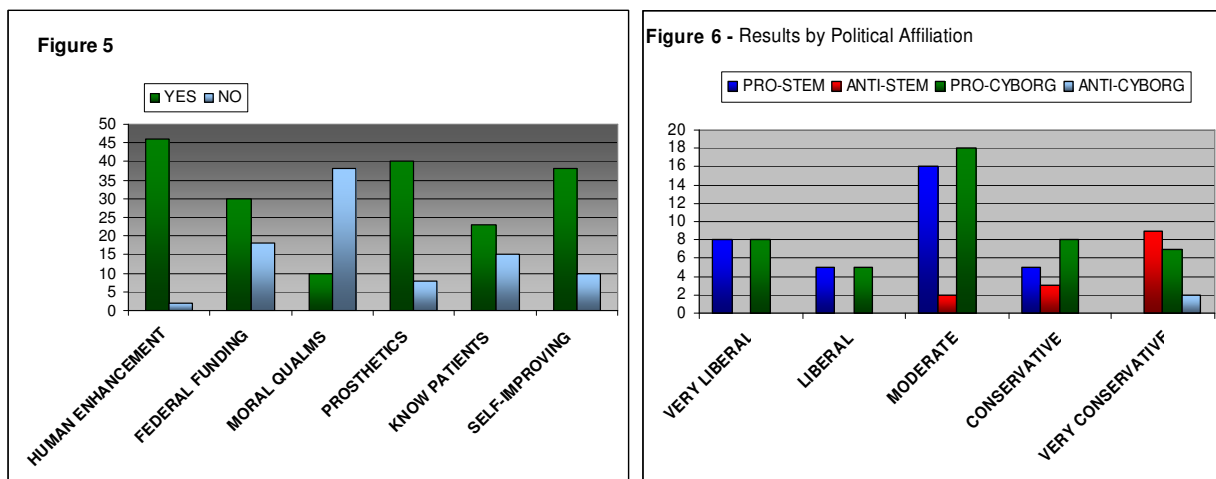


When asked why, three of the participants wrote these responses, “money should be spent on education and crime reduction instead”, “my taxes!”, and “not sure if it works at all”. When asked if they

had any moral qualms with the research, the results reverted back to the first stem-cell question having 14 responding ‘yes’ to having qualms, and 34 responding ‘no’. This further supports the notion that many of those who did not support government funded research did not do so because of any personal ethics, but of a political or social stance.

Finally, questions 9 through 14 were the most important. They all had to do with the participants’ opinions and views of human prosthetic technology, everything from organ implants, artificial limbs, and enhancements to senses such as vision, hearing, and possible enhancements that increase memory and performance. The results can be seen in the large bar chart Figure 5. Out of the 6 questions, I found them all favorable to my hypothesis as well as my outlook on the future of human enhancing technology.

The participants overwhelmingly supported human enhancement, the majority of them supported Federal funding, and the majority did not have moral qualms with the idea. More than half of the participants know someone with some sort of prosthetic, attachment, replacement, or transplant. And the majority of the participants said that they would consider self-improvement if there was nothing inherently wrong with them, that is, they would consider improvements to their normal body such as hearing or vision enhancement.



I could tell the participants were all politically charged by the end of the survey because the only question in the “identity” portion that was filled out by every single participant was the question concerning political affiliation. As Figure 6 above shows, both the “very liberal” and “liberal” participants were unanimously supportive of stem-cell research and cyborg technology. The “moderates” were very receptive to the ideas having unanimous support for cyborg

technology and a large majority being supportive of stem-cell research. The more right-wing on the scale we travel, the more apparent the changes become. Those who identify as “conservative” were pro-cyborg, but we see a dead heat when it came to the stem-cell issue, accurately reflecting the split in right wing politics today between social and religious conservatives versus libertarians on the right. And finally, those who consider themselves “very conservative” were anti-stem-cell research completely, and all but two extremely religious conservatives were pro-cyborg technology. This chart is the most important data concerning ethics and technology and its connection to modern politics. It is proof that politics plays a heavy role in the development and support of scientific advances.

Notes

¹ I'd like to thank those at the Veteran's Hospital for who provided me with a background on new prosthetic technology. Also, I'd like to thank Dr. Jerald Brown for encouraging my interest in the sociology of technology and futurism, and Dr. Barry Levine for single-handedly turning me on to Weber.

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