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The Consequences of the Fourth Industrial Revolution and Its Impacts on American Ideals and
Political Views

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ABSTRACT

This thesis investigates the role of social media and its algorithms and how they have been exacerbating political polarization in the United States during the Fourth Industrial Revolution. By examining the development and consequences of this revolution, particularly the increasing reliance on social media platforms for information dissemination and political discourse, this research aims to understand the extent to which these platforms have contributed to the current political divide. This study will analyze the influence of social media algorithms on political opinions, exploring potential solutions and future implications for a more constructive political discourse.

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The conception of my thesis arose during the COVID-19 pandemic. While in isolation at home, the more I used my phone, the more I realized the country was in a horrible place, and

suspicious things were happening behind closed doors. Nothing in our history can compare to the manipulation that has been occurring these past few years. Having this epiphany, I decided to create a thesis that hopefully shed light on and more importantly, worked toward a solution for this clearly growing issue. I'd like to thank Dr. Lynn Freymiller for being the inspiration behind my thesis. The idea was born during my Freshman year during a project, while taking his course RCL 137T.

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Chapter 1: What is the Fourth Industrial Revolution?

“The Fourth Industrial Revolution” identified in 2016, by the World Economic Forum Founder, Klaus Schwab, in its biggest way, represents human evolution. The Fourth Industrial Revolution is comprised of new innovations that changed the lives of every person on the planet. Advances such as the internet, virtual reality, big data, and artificial intelligence have continued to shape the human experience each year subsequent to 2016. Because these advances have benefited humanity so immensely, the detrimental effects have been readily dismissed or overlooked, possibly to assure or protect continued growth. However, there is the looming argument that the negative impacts generated by The Fourth Revolution, far outweigh the advantages.

Building on the ideas presented by Thomas Philbeck’s and Nicholas Davis’s, *The Fourth Industrial Revolution: Shaping a New Era*, the Fourth Industrial Revolution is more than just the introduction of new technologies; it represents a significant shift in all aspects of industry and society, including the economy, politics, and social values. As with previous industrial revolutions, the Fourth Industrial Revolution is characterized by profound social transformations that go beyond discrete technological capabilities, leading to a restructuring of power systems.

Philbeck and Davis emphasize the interconnectedness of industrial revolutions, demonstrating how each era influenced the subsequent one. They argue that the Digital Revolution, characterized by the rapid exchange of information, served as a catalyst for the Fourth Industrial Revolution, which was built upon the foundation laid by its predecessor. As the digital world becomes an invisible fabric, taken for granted, the disruptive attributes of a new world dependent on cyber-physical systems require us to rethink our relationship with technology and ourselves.

The Fourth Industrial Revolution has the potential to further change our lives, but it also comes with disadvantages that are woven within its benefits. How people adapt to these significant changes remains a crucial aspect of the discussion. The ideas presented in Philbeck and Davis's paper provide valuable context for understanding the rapid and immense shift in technology, reinforcing the foundation of this thesis.

Challenges

In Priescaru's "CHALLENGES OF THE FOURTH INDUSTRIAL REVOLUTION" Priescaru highlights the obstacles of the Fourth Industrial Revolution and emphasizes that while technological advancements can bring significant benefits, they can also introduce various risks and drawbacks. One of the critical challenges identified by Priescaru is the potential disruption of the labor market, which could result in increased social inequality and a growing divide between high and low-salaried workers based on education levels.

Klaus Schwab believes that talent, rather than capital, will become the critical factor of production. However, this may lead to an economy that benefits capital providers, such as those providing intellectual, physical, or financial resources, at the expense of workers. The question arises whether technological progress is the source of social inequalities, as Schwab thinks, or if the issue lies in a perverse distribution of income that has hit the middle class, which is already affected by the deindustrialization process.

This, however, may result in an economy that favors capital providers, such as those who give intellectual, physical, or financial resources, at the expense of employees. The dilemma is whether technical development, as Schwab believes, is the basis of social inequities, or whether

the problem is a crooked distribution of income that has hit the middle class, which has already been impacted by the deindustrialization process.

An economy that kills the middle class and is based on the ideals of a winner-take-all system and an "every man for himself" mentality could cause substantial societal upheaval. As Priscaru points out, the Fourth Industrial Revolution has no decisive outcome. The convergence of several revolutions, however, and the lessons learned from previous experiences suggest that, while society may experience immense benefits, it could also face considerable deficits.

This trade-off between advancements in one area and decline in another raises concerns about whether these changes will ultimately serve the greater good or harm overall progress.

Government Effect on Technological Evolution

Interference from the government can affect technology advancement in both positive and harmful ways. Governments can, on the one hand, promote innovation by putting in place laws that support R&D, safeguard intellectual property rights, and allocate money for training and education initiatives. These actions can encourage investment, collaboration, and assist the workforce to develop the skills needed to keep up with the demands of a technological environment that is evolving quickly.

But, governments may occasionally use the advancement of technology for their own gain, which can have unexpected bad effects. Governments might, for instance, monitor and manage their citizens through data collecting and surveillance technology, thereby violating privacy rights and restricting individual liberties. Governments may also give priority to investments in certain industries or technologies that fit with their political agendas, which could stifle innovation in other fields or lead to an imbalance in the distribution of resources.

Furthermore, as governments may favor certain businesses or industries over others, excessive market intervention by the government may result in the formation of monopolies or oligopolies. This might impede creativity, limit competition, and eventually lessen the potential advantages of technological advancement for society as a whole.

Chapter 2: Smart Technology

The Fourth Industrial Revolution has changed the dynamic of humanity. Tasks that were deemed normal years ago, even mundane, are now obsolete. For instance, if you are too busy to sweep your floor or vacuum, simply purchase a Roomba (automated vacuum cleaner) to do it for you. Innovations like this have “swept” the nation, but while these items stand to ease people’s lives, are they actually producing a benefit? Have these innovations changed our lives for the better, or, have they progressed us in the way of technology, but moved us backward within the confines of the human aspect. The answer is that The Fourth Revolution has accomplished both. We have seen great strides toward a better, stronger tomorrow, while simultaneously experiencing societal counter-effects.

On the one hand, the Fourth Industrial Revolution unquestionably improved our lives in a variety of ways. Technology has enhanced production, decreased the need for physical work, and provided new opportunities in industries including medical, communication, and transportation. These breakthroughs have the potential to produce a more wealthy and sustainable future while also addressing some of the world's most serious issues, such as climate change, resource shortages, and inequality.

Nonetheless, the high speed of technological growth has had some unintended consequences. This advancement, as *Friedel's Culture of Improvement* shows, has left some

people behind, leaving their talents and knowledge outdated. This transition has resulted in employment losses and increased the disparity between the haves and the have-nots.

Furthermore, our growing reliance on technology has created concerns about privacy, security, and the risk of dehumanization. We risk losing interpersonal skills and empathy that uniquely makes us human as we become increasingly reliant on technology and algorithms.

Through an historical lens, Friedel demonstrates the progression of technology from early innovations like "plows and horse" to the computer age, bringing both remarkable benefits and challenges. The development of technology has reshaped the way people view the world, their relationship with the past and the future, and how they adapt to change. The author showcases a symbiotic relationship between the past and the present and highlights both the advantages and disadvantages of technological advancements.

The widespread adoption of technology in agriculture, for example, led to significant improvements in farming practices, benefiting entire civilizations. However, as people became reliant on new technologies, they abandoned traditional methods, neglecting to pass on valuable knowledge to future generations. This rapid growth also left many people behind, as once essential skills became obsolete, resulting in job losses and suffering.

Friedel argues that there is an imbalance in the world due to human ego, as technology has become a pursuit of power over nature. To maintain a symbiotic relationship between the past, present, and future, the human ego must be controlled. Inventors, thinkers, and creators must understand that no single idea is superior to the last, but rather, different ideas can be combined for innovation.

The author emphasizes that to make informed decisions about the future and its potential benefits and dangers, we must have a clear understanding of the history and values that have

shaped technology. This understanding begins with humility and skepticism but deepens with the recognition that our technologies are the product of human desires and capabilities, ultimately answerable to our wills. Friedel's text serves as a reminder that every innovation comes with potential consequences, and those consequences are inevitable if we fail to acknowledge that there are forces greater than ourselves. By learning from the past and understanding the implications of our technological advancements, we can create a more balanced and sustainable future.

As we continue to embrace the Fourth Industrial Revolution, it is crucial to maintain a holistic view of its impact on society. We must strive for progress while mitigating the negative consequences of rapid technological advancement. This approach involves fostering collaboration among diverse fields of expertise, encouraging a culture of improvement that is sensitive to the needs of all individuals, and ensuring that technological advancements serve the greater good of humanity.

Friedel's Culture of Improvement offers valuable insights into the complex relationship between technology and humanity. As we navigate the challenges of the Fourth Industrial Revolution, it is essential to learn from our past experiences and adopt a balanced approach that acknowledges both the benefits and potential pitfalls of technological advancements. By doing so, we can work towards a future that maximizes the potential of technology while preserving the qualities that make us uniquely human.

Smart technology has been a massive contributor to the way the Fourth Industrial Revolution has shaped society. Products such as the Amazon Echo, Ring Doorbells, Smart Speakers, etc have all contributed to the success of this revolution. The entire point of the

existence of smart products is based around security and aiding the ways of living at home or in public.

One critical aspect of the Fourth Industrial Revolution is cybersecurity, which is essential to protecting new technologies from both domestic and foreign threats. However, there are many other challenges that remain unknown as humanity adapts to the rapidly evolving world around them. To address these unforeseen problems and ensure that technological advancements are harnessed for the greater good, Andrew Maynard, in his article, *Navigating the Fourth Industrial Revolution*, identifies several key strategies.

These strategies include fostering effective multi-stakeholder dialogues, encouraging actionable empathy, providing educational opportunities for current and future stakeholders, developing next-generation foresight capabilities, transforming approaches to risk, and investing in public-private partnerships. By implementing these strategies, society can work towards eliminating potential problems and ensuring a balanced and sustainable approach to technological advancement.

Maynard emphasizes the importance of collaborative efforts in navigating the Fourth Industrial Revolution, stating, “We now need to learn how to scale up our efforts, so that our convergence in working together to build a better future mirrors the convergence of the technologies that will help achieve this.” This call for unity highlights the need for humanity to work together to ensure that technology reaches its full potential without causing harm to society.

Human productivity has significantly increased over the years, because of the ease of access to information, communication, and using more advanced technology to get a certain task done while simultaneously reducing human error. According to the Economy Policy Institute “From 1979 to 2020, net productivity rose 61.8%.” However, productivity doesn’t directly

correlate with positivity. Yes, more things get done, but at the cost of technology slowly catching up to human productivity, inevitably deeming humans as obsolete. Furthermore, the over-reliance on technology can make humans inefficient in numerous industries, even now industries like manufacturing, retail, transportation, and customer service are experiencing the impact of automation and artificial intelligence.

In manufacturing, robots are increasingly replacing human workers on assembly lines, leading to job displacement and a loss of traditional manual skills. In the retail industry, self-checkout machines and automated inventory management systems are reducing the need for human employees, while in transportation, the advent of autonomous vehicles and drones threatens jobs in trucking, taxi services, and delivery sectors. Similarly, customer service has seen the rise of chatbots and virtual assistants, which can handle multiple customer inquiries simultaneously, further reducing the demand for human agents.

While increased productivity and efficiency are undoubtedly advantageous for businesses and the economy, we must remain mindful of the potential negative consequences of this technological progress on human employment, job security, and social cohesion. As we continue to embrace the Fourth Industrial Revolution, it is essential to strike a balance between harnessing the potential of emerging technologies and preserving the human element in various industries. This balance can be achieved by investing in education, reskilling, and upskilling programs to ensure that the workforce remains adaptable and prepared for the changing job market. Additionally, promoting innovation in fields that complement rather than replace human labor, fostering a culture of lifelong learning, and implementing social safety nets for those affected by job displacement can help mitigate the negative impacts of technological advancements.

As we move forward in the age of the Fourth Industrial Revolution, it is crucial to simultaneously recognize the advantageous nature and possible damages of the technological sprint. By striking a balance between leveraging technological progress and preserving human skills and employment, we can create a more resilient, inclusive, and sustainable future. This approach will enable us to harness the full potential of technological advancements, while safeguarding our human aspect and fostering a thriving society in the face of ongoing change.

Jaime Morgan's piece, *Will We Work in Twenty-First Century Capitalism? A Critique of the Fourth Industrial Revolution*, encapsulates the future implications of what the technological revolutions can bring to society, particularly in the context of the capitalist system that we currently live in. In this system, everyone has their own job and serves as a cog in the machine of capitalism. However, with technology advancing at such an accelerated rate, there is a growing threat to the job market.

Morgan highlights various markets and how they can be completely shifted from manual labor to technology completing tasks more reliably and efficiently. With technology's capacity to perform without error compared to humans, this can discourage people from seeking jobs or even result in the elimination of jobs altogether. "This, in turn, positions workers and responsibility for future employment, reducing the urgency of calls for wider societal preparation. Public understanding and policy are thus affected and along with them the future of work" (Morgan).

By striking a balance between leveraging technological progress and preserving human skills and employment, we can create a more resilient, inclusive, and sustainable future. This perspective and subsequent action will allow us to fully embrace high-tech leaps and protect the sanctity of the human being, all while nurturing the society's move toward the continued and

immense changes. It is essential to consider how easily a capitalist society can eliminate manual jobs for the sole purpose of more capital gains, which raises the question of how the government might find ways to take advantage of society.

By conveying that the future is virtually unclear, and humanity, with what it knows now and what potentially lies in wait in the foreseeable future, must wield it responsibly. Developing comprehensive strategies that incorporate the perspectives of policymakers, industry leaders, and individuals alike, will be key in navigating the challenges and opportunities presented by the Fourth Industrial Revolution.

Chapter 3: The Advantages of Emerging Technology

The Fourth Industrial Revolution (IR) has initiated much change for society, constantly providing new opportunities and introducing more “firsts” than any other time in history. Every person who has been alive during the last decade has been either directly or indirectly impacted by the benefits of the 4th IR.

The Fourth Industrial Revolution has initiated much change for society, constantly providing new opportunities and introducing more “firsts” than any other time in history. Every person who has been alive during the last decade has been either directly or indirectly impacted by the benefits of the 4th IR. As Min Xu and others discuss in their article "The Fourth Industrial Revolution: Opportunities and Challenges," the 4th IR has brought about significant advancements that have resulted in increased productivity and a better quality of life for many. Innovations in artificial intelligence and connectivity have bridged gaps between various walks of life, fostering a more interconnected world. These technological leaps have enabled unprecedented access to information and resources, making it possible for individuals to learn, grow, and communicate with each other in ways never before imagined.

However, as Xu and others point out, these opportunities come with their own set of challenges. Cybersecurity is a crucial concern in the 4th IR, as our reliance on technology and digital systems increases. As security measures improve, so do the skills and tactics employed by hackers, making it essential for both the public and private sectors to collaborate in developing robust security solutions.

The authors emphasize that "the response to [the 4th IR] must be integrated and comprehensive, involving all stakeholders of the global polity, from the public and private sectors to academic and civil society." By approaching these challenges with a united front, society can better safeguard the technological advancements that have the potential to improve our lives significantly.

Because of this current revolution, the quality of life for people has drastically improved and has driven productivity to excessively new heights. Technologies such as the internet, smartphones, and even AI have aided this massive upswing. To shed light on the extent of technology-based human consumption, with smartphones and internet alone, more than 90% of the world's population owns a smartphone and thus has direct access to the internet. With said access, people have the capacity to share, communicate, connect, network, etc. with people all over the world, which ultimately creates more sharing, communication, connection, and networking that evolves into powerfully propelled productivity.

One of the key benefits of the fourth industrial revolution is the increased efficiency and productivity it brings to various industries. Automation and the use of advanced technologies such as AI and the internet of things allow for the automation of repetitive tasks, freeing up human workers to focus on more complex and higher value tasks. This results in increased productivity, as well as improved product quality and consistency. These new technologies grant

the ability to collect and analyze large amounts of data, also known as big data. This allows for more accurate and efficient decision making, as well as the ability to identify patterns and trends that would have been previously impossible to detect. This can result in significant cost savings and improved operational efficiencies.

Chapter 4: The Downfalls of Emerging Technology

There seems to be active avoidance regarding the downside of the Fourth Industrial Revolution's innovations and advancements, but they do in fact exist. First and foremost, anything in excess has the potential to become dangerous; it is no different with global growth and progress. Factors like human interaction, social skills, addiction, and mental health are either suffering or are clear issues as a result of these advancements. Perhaps it is because of the extreme speed with which these advancements emerged. With gradual development, people have a chance to consider, cope with, and acclimate to the changes. However, with the intense speed these changes are occurring, it's as though people don't have enough time to adjust, but instead, are forced to hit the ground running.

In the study *Is the Fourth Industrial Revolution a Panacea? Risks toward the Fourth Industrial Revolution: Evidence in the Thai Economy*, the authors highlight the negative effects of what was thought to be a "panacea" and convey the reasons why and how their Fourth Industrial Revolution is proving negative rather than positive. The three core negative results of the revolution are the possibility of high unemployment rates due to technology taking jobs, social inequality, and cybersecurity risks, all of which are valid.

Unemployment poses a major threat when dealing with the Fourth Industrial Revolution. The risk of having efficient technology replace humans is too great a threat to society. As new

methods and technology-based approaches for businesses arise, humans in traditional roles are becoming more and more obsolete. Secondly, social inequality raises much concern for the country itself. The implementation of technology can create a much bigger divide because of “user knowledge.” Lastly, and most importantly is cybersecurity risks, the backbone of technology. Various theories were laid out, the most pivotal being AI cyberattacks, which detailed that if privacy was breached, the public wouldn’t trust technology, thus threatening the evolution of it (technology). However, if technology does advance, it would reform what we know humanity to currently be.

Government interference exacerbates these issues, often ignoring the negative effects of rapid technological advancements in pursuit of wealth and power. The consequences include further political polarization and social divisions, as people struggle to adapt to the changes and the growing inequality fueled by the revolution. The authors of the study argue that the purpose of their risk analysis is to persuade policymakers to investigate the negatives as well as the positives of leveraging advanced technology and learn from the pitfalls of globalization. By overlooking these concerns, governments risk deepening the political divide and jeopardizing the well-being of their citizens.

The negatives of the Fourth Industrial Revolution, such as high unemployment rates, social inequality, and cybersecurity risks, are often overlooked in favor of the benefits it brings. However, these negative effects should not be ignored, as they pose significant threats to society and can contribute to the political polarization and social divisions currently plaguing the United States. By recognizing and addressing these issues, governments and policymakers can work towards creating a more balanced and equitable society during this time of rapid technological advancement.

The area of social media and algorithms is one significant place where these difficulties manifest. The impact and influence of these digital tools have expanded tremendously as technology improves, altering the way people communicate, share information, and form opinions.

Chapter 5: The Dominance of Social Media and Algorithms

Social media exists as a fairly recent technological advancement. It is a tool that connects people from around the globe. Its initial emergence was trendy, novel, and innocent, but has severely shifted to a deceptive, manipulative weapon.

The genesis of social media carried one purpose, to create a space for people to share pieces of their lives harmlessly and authentically. With people and their excessive use, social media morphed into something that skewed the human condition. This metamorphosis was the result of social media outlets developing strategies that fed on the vulnerabilities of people, thus creating a mass population of addicted users. Social media has skewed the human condition by fostering comparison and envy, reducing attention spans, eroding privacy, and enabling cyberbullying. Furthermore, it has diminished deep relationships, contributed to mental health issues, encouraged addiction, and facilitated the spread of misinformation. These factors have altered human behavior, relationships, and mental well-being in profound ways. In 2006, the social media platform Facebook introduced the first algorithm that was applied to social media. Algorithms are essentially data collecting programs that filter users' feeds, by taking data from their accounts (their interests, and behaviors) applying this to to their feeds, and bombarding them with this data on their feeds. This implementation revolutionized social media which opened many new doors, but simultaneously created hidden tunnels for very dark things to pass through as well. Humans have been altered by this implementation, interfering with the ways

humans are supposed to function. Children are now bound to their phones watching TikTok and other entertainment apps, teens are hellbent on keeping up with the latest trends, and adults are consuming celebrity and political drama. Our attention spans have been reduced significantly from this, making us constantly seek instant gratification, and dopamine rushes from artificial things. These tendencies are now becoming ingrained in the younger generations, and the consequences will show in the decades to come.

According to a study entitled *Media Trust under Threat: Antecedents and Consequences of Misinformation Perceptions on Social Media* by Stubenvoll et al. (2021), the use of social media platforms has resulted in a threat to media confidence. A major facet of the decrease in media trust were algorithms. Algorithms on social media have become a vital part of our everyday lives, influencing how we consume information and connect with people online. These algorithms, however, can be harmful in a variety of ways. One of the most serious risks posed by social media algorithms is the development of “filter bubbles” (GCF Global). These algorithms are meant to offer users material that they are likely to engage with, thus users are more likely to view content that validates their previous thoughts and attitudes. This can contribute to the spread of disinformation and a lack of exposure to varied opinions by creating a filter bubble in which users are exposed to a restricted variety of perspectives and information. These filter bubbles add fuel to the fire, forcibly condemning people to only one viewpoint rather than enabling them to explore other perspectives. This isn’t a choice users make, it’s a choice the algorithm makes based on the material they interact with. For example, if you go on TikTok and view 3 videos of kittens, your “For You Page” will consist of further videos heavily dominated by kittens.

Social media algorithms, along with government interference with social media giants, have had a significant impact on promoting political polarization. In the article, *Exposure to Opposing Views on Social Media Can Increase Political Polarization*,” by Chris Bail, the author conducted an experiment in which participants affiliated with either Democratic or Republican views were incentivized to follow political Twitter bots with opposing views. The article highlights how social media sites contribute to political polarization and their various hypotheses of how the study could possibly play out. Political polarization is also exacerbated by social media algorithms. The study found that participants exposed to opposing political views on Twitter became more entrenched in their original beliefs. This occurs because people tend to counter-argue conflicting messages using motivated reasoning, which amplifies perceived differences and strengthens their commitment to preexisting beliefs. People become more prone to believing misinformation because of the trust they put into their political beliefs, so when they see something that they support or agree with that in reality is misinformation, their beliefs are confirmed by the source that provided that misinformation.

Social media's influence on political polarization is further intensified by government interference with social media giants, which can promote biased or polarizing content. This results in a more divided society where individuals are less likely to consider alternative perspectives.

Although the study conveyed interesting results, the authors noted that the study couldn't be used to generalize the US population, rather more on Twitter users. The study then concluded that the views of both sets of participants aligning with their party became slightly more extreme than prior to participating in the study. “People who are exposed to messages that conflict with their own attitudes are prone to counter argue them using motivated reasoning, which

accentuates perceived differences between groups and increases their commitment to preexisting beliefs.” In other words, when confronted with opposition, a person’s own position becomes more cemented during their defense. Social media exacerbates this through rapid and aggressive posts that aim to bolster their own views while slandering the adverse perspective.

The communicative rapport and behavior demonstrated through social media directly contribute to political polarization because it confirms that political views shared on social media create disdain and aggressive pushback from oppositions that quite possibly wouldn’t have existed without this platform. Political polarization exists because of social media platforms and their accessible yet private opportunity to be vocal without accountability. Furthermore, government involvement with the largest social media platforms may amplify the spread of biased or polarizing content, further dividing the population and entrenching extreme beliefs. As a result, the combination of algorithmic influence and government involvement in social media platforms perpetuates and exacerbates political polarization in today's society. This can also further polarize society as people become more fixated on their existing beliefs and less likely to consider other perspectives.

Moreover, social media algorithms can exaggerate extremist viewpoints by prioritizing content that is expected to elicit interaction, such as likes, shares, and comments. This can result in the growth of echo chambers as well as the spread of hate speech and disinformation. Stubenvoll et al. (2021) argue that social media algorithms can also perpetuate prejudices by reinforcing existing preconceptions and discrimination. The development of social media algorithms has transformed the way we consume information and connect with people online. While they have opened up many new doors, the consequences of their use, as highlighted by Stubenvoll et al. (2021), have shown that they can be harmful in a variety of ways, including the

development of filter bubbles, exaggeration of extremist viewpoints, and perpetuation of prejudices. It is crucial to recognize the risks posed by social media algorithms and implement measures to mitigate their negative effects.

Chapter 6: Mass Suppression and Censorship

When social media becomes as powerful as it is today, it can be manipulated and contorted to suit the needs of the elites. As time progressed, social media has become the leading contributor to delivering information to the masses. Facebook being the most prevalent, has undergone multiple alterations to dictate what people can and can't see. In other words, it is suppressing information that people have the right to know. On Nov 2nd, Yahoo news reported that the government has the ability to go through Facebook to suppress user content stating that its to combat the spread of disinformation. This possibility was built through Facebook itself, creating a "portal" for government officials to request posts to be diverted or suppressed.

On Facebook, using a [portal](#) called the [Content Request System](#), [The Intercept reported](#), government officials from DHS as well as law enforcement officers can directly submit reports about posts that were deemed subversive or suspicious. Though it is unclear when the portal was created or what criteria must be met for a post to be removed, [The Intercept reported](#) posts about COVID-19, the withdrawal from Afghanistan and the war in Ukraine were targeted. (Tangalakis-Lippert, 2022)

Clearly, this is already a violation of our human and constitutional rights. Ever since the COVID pandemic, the government has targeted "misinformation" deeming it a national security threat, yet the term is merely subjective.

As it has been reported, "social media companies are collaborating with the Department of Homeland Security's initiative against online misinformation" (Tangalakis-Lippert, 2022) .

They claim it's to protect America, but is it? Starting with the COVID vaccine, "misinformation" spread rapidly regarding the vaccine and its negative effects. These claims were heavily denied by the CDC and the government, labeling these claims as misleading and misinformative. In turn, this contributed to COVID becoming political. The left believed that the vaccine was safe and effective, condemning anyone who attempts to say otherwise, while the right believed it wasn't safe, and forcing the populous to receive it was an infringement on our human bodily rights. Debate between the two affiliations transpired across all of social media, resulting in terminations of accounts, heated arguments, doxxing, physical and emotional harm, the list goes on.

This manipulation of information by both social media platforms and government entities has far-reaching consequences. Not only does it infringe upon individuals' rights to access and disseminate information, but it also fosters an environment where trust in authoritative sources and institutions is eroded. As social media continues to play a significant role in shaping public opinion and facilitating communication, the issue of mass suppression and censorship remains a crucial concern that must be addressed to preserve the integrity of democratic discourse and the protection of individual liberties.

As the months went by, people began to speak up regarding the negative effects of the vaccine, claiming it gave them health issues that they originally didn't have. These posts were automatically deemed as misleading and overall incorrect.

The Department is deeply committed to doing all of its work in a way that protects Americans' freedom of speech, civil rights, civil liberties, and privacy," read DHS [statement](#) regarding the program, which was [paused just months after it was announced](#)

following [extreme backlash](#) from critics who drew parallels to the Ministry of Truth that churned out propaganda in the novel "1984. (Tangalakis-Lippert, 2022)

This had a contradictory effect on society. Using logic, if something factual is deemed misleading, or incorrect, wouldn't the label of "misleading" be actually misleading? This is the root of the problem our country faces today.

Intertwining the government and big tech does not go hand in hand. Social media was intended to be a platform for people to exchange thoughts and information, not a platform where the government is the arbiter of truth. People have the right to speak their minds, not get silenced by the government. Nowhere in the constitution do they have the right to even attempt this; it's our First Amendment Right and our natural human right. However, this rings untrue to the government, purposely deceiving the public from the truth. The Intercept reported that "the organization targeted information it deemed to be "inaccurate" about "the origins of the COVID-19 pandemic and the efficacy of COVID-19 vaccines, racial justice, US withdrawal from Afghanistan, and the nature of US support to Ukraine" that was posted on social media" (Tangalakis-Lippert, 2022). There isn't a need to deem this information inaccurate when in reality it's true. That is deception at its core. The DHS even stated that "false information that is deliberately spread with the intent to deceive or mislead" (Tangalakis-Lippert, 2022), yet they are deliberately labeling this information with the intent to deceive and mislead.

It was also said that on a podcast between Joe Rogan and Mark Zuckerberg that the FBI reached out and cooperated with Facebook to "[suppress reporting on Hunter Biden's laptop](#), saying it "fit the pattern" of posts the platform had been advised to look out for" (Tangalakis-Lippert, 2022). If it's the truth, then why suppress it? It's not misinformation or misleading, it's showing the world what exactly went on. After COVID, things like this are able

to occur because once the government realized that they would get away with it once, they can continue to pursue this avenue because of the lack of repercussions or accountability.

Expanding upon the ideas presented in Bail et al.'s article, the role of social media in political polarization becomes increasingly evident. The study shows that exposure to opposing views on social media platforms such as Twitter can result in individuals becoming more ingrained in their own beliefs rather than being open to considering alternative perspectives.

This phenomenon can be attributed to the way social media algorithms are designed to cater to users' existing interests and preferences, creating echo chambers that amplify and reinforce their pre-existing beliefs. As a result, users become more susceptible to confirmation bias, wherein they selectively accept information that supports their views and dismisses or discredit information that challenges them. Moreover, the anonymity and instant gratification provided by social media platforms contribute to a lack of accountability for one's actions and statements. This, in turn, fosters an environment where users are more likely to engage in aggressive behavior, trolling, and harassment of those who hold opposing views. Such hostile interactions only serve to further divide individuals along ideological lines, exacerbating the issue of political polarization.

The impact of political polarization on democratic societies cannot be understated. When individuals are unable to engage in civil discourse and find common ground, it becomes increasingly difficult to address pressing social and political issues effectively. The lack of willingness to compromise or consider alternative viewpoints can lead to legislative gridlock, social unrest, and the erosion of trust in democratic institutions.

To mitigate the negative effects of political polarization driven by social media, it is crucial to promote digital literacy and critical thinking skills among users. Encouraging users to

diversify their media consumption and engage in open dialogue with others who have differing views can also help counteract the effects of echo chambers and foster a more inclusive online environment. Furthermore, social media companies and governments must work together to establish regulations and policies that promote transparency, accountability, and responsible content moderation. By addressing the underlying factors contributing to political polarization on social media, we can work towards creating a more unified and democratic society.

Building on the insights provided by Stubenvoll et al. (2021), it becomes evident that the erosion of trust in media and the proliferation of misinformation on social media platforms pose significant challenges for individuals and society at large. The ease with which misleading information can be shared and propagated online has fueled a climate of skepticism and uncertainty, making it increasingly difficult for people to discern the truth and engage in meaningful discourse.

In this context, the role of social media platforms and their responsibility in addressing the spread of misinformation is crucial. By designing and implementing robust content moderation systems, these platforms can help curb the dissemination of misleading information and restore trust in the online information environment. Additionally, they can promote news literacy among users, providing tools and resources that empower individuals to identify reliable sources and critically assess the content they encounter online. People are entitled to know the truth of what is being put out all across social media, and should not have to guess whether or not what they are viewing is factual or an illusion. However, these content moderation systems must work accurately or else they can possibly become another threat to the truth.

Governments and regulatory bodies must also take action to address the issue of misinformation on social media. This may include implementing policies that hold social media

companies accountable for the content on their platforms, incentivizing them to invest in fact-checking initiatives and content moderation technologies. Additionally, governments can support educational initiatives aimed at fostering critical thinking and news literacy among the population.

Collaboration between individuals, media organizations, social media platforms, and governments is essential in tackling the adverse effects of misinformation on media trust and social cohesion. By working together, these stakeholders can create an information ecosystem that is more transparent, reliable, and conducive to democratic discourse. In doing so, they can not only restore trust in media outlets but also help society navigate the complex landscape of information in the digital age, ultimately mitigating the detrimental consequences of social media misuse.

Chapter 7 Search Engine Manipulation Effect

Search engines were designed to aid people who were looking for anything online. This is a tool that serves the ultimate purpose of giving users the ability to find relevant information on the internet by processing and indexing billions of websites. Users can type virtually anything into the search bar, and then receive results in mere seconds, getting suggestions while typing, and ranking the sites by popularity and user ratings. In today's world, this has been taken advantage of, manipulating search engines to give users what the company believes the users should see. This manipulation is referred to as the search engine manipulation effect.

The search engine manipulation effect is a phenomenon where the order and ranking of search results presented by a search engine can significantly impact the opinions and beliefs of users. This effect occurs when a biased or manipulated search algorithm influences the user's

perception of a topic, leading them to form opinions or beliefs based on the information presented to them by the search engine. As defined and observed by Robert Epstein, in his study *Big Tech Influence Can Rio Elections*, he conducted a study that found out that the United States in fact utilized this during their 2020 election citing “The results showed a liberal bias of over 0.125 for Google searches and a conservative bias of over 0.025 for non-Google searches. When conservative voters saw the Google homepage on election day, they received reminders to vote just over 40 per cent of the time, compared to more than 50 per cent for liberals and more than 70 per cent for moderates” (Epstein, 2021). This stunning correlation conveys the fact that there is a way to manipulate Google search algorithms that can benefit one side and prevent the other from reaching potential supporters.

Manipulation of search engines has the potential to harm American democracy by jeopardizing election integrity. Search engine manipulation can be used to impact public opinion on political candidates by concealing potentially harmful material or magnifying potentially beneficial information. Search engine tampering can be the deciding factor in determining the outcome of a tightly contested election. The fact that search engines are privately owned and not subject to government supervision raises worries about the possibility of misuse.

Chapter 8: Influenced Election Outcomes

Along with censorship and suppression, election outcomes can be shifted by internet manipulation. In the article *Big Tech Influence Can Tip Elections* by Lee Harding, he claims to have discovered the methods these companies use to influence voters.

We've confirmed that these techniques are being used. That has also been confirmed by now by about a dozen whistleblowers, mainly from Google, and by leaked documents, leaked emails and a couple of leaked videos. So we know for sure that these techniques are being used, even though officially Google denies this over and over. (Epstein, 2021)

One of the main ways to acquire information in politics is through the internet, and when the internet allows you to acquire the information that they want you to acquire creates a huge problem. Leaning left or right is, and should be left up for the individual to decide. Influencing the way people think is an abuse of authority and a reach into the privacy of Americans across the country. Through Epstein's study, he found that big tech companies utilize the "Search Engine Manipulation Effect." This results in shifting "voting preferences for the undecided by 20 per cent, and as high as 80 per cent for some demographics" (Epstein, 2021). He also stated

If that number of people who can be shifted invisibly is a lot larger than the projected win margin, then we say, okay, the outcome of this election is actually in the hands of Big Tech, primarily Google. And they'll get away with it because no one is documenting, no one's collecting the information. And it's probably not even illegal. (Epstein, 2021)

These companies will never be held accountable, since they already have immunity by the government and with their billions of dollars. This isn't fair for a country filled with 300 million people who have the right to form their own beliefs. It's an attack on societies' minds, especially the people trying to educate themselves. Epstein believes that to combat this, these companies must be constantly monitored to see if things like this continue to occur. Maybe, even repercussions need to be included to sway these companies to become more ethical in their actions.

Canada and every country is getting influenced and they don't know it....This is a concentration of power that the likes of which have never existed. Here we're talking about primarily one company located in Silicon Valley determining the thinking and behavior of actually now it's over 3 billion people and in the position to determine the outcomes of close elections in almost every country in the world except China and North Korea. (Epstein, 2021).

If it's happening in Canada, it could definitely be assumed that it's occurring in America as well, perhaps worse than Canada.

Chapter 9: How to Combat Censorship

At this moment in time, censorship runs rampant across the world in both democratic and socialist societies, most notably, in China. China is a product of what is ensuing within our nation today. The Chinese government exercises strict control over the flow of information, heavily censoring the media and limiting citizens' access to global news sources. This level of control has created a society in which dissenting opinions are silenced, and the government's narrative is rarely questioned.

In democratic societies like the United States, censorship may not be as overt or as institutionalized as it is in China, but the effects of social media manipulation and the suppression of information have similar consequences. As we have seen with cases of government intervention in content moderation and the widespread dissemination of misinformation, there is a real danger that democratic societies may be moving toward a future where open discourse and freedom of expression are stifled.

To prevent our democratic societies from succumbing to a similar fate as China, we must be proactive in addressing the challenges posed by social media platforms, misinformation, and censorship. This requires a multi-faceted approach that involves both public and private stakeholders working together to ensure that the internet remains a bastion of free speech and a marketplace of ideas.

First and foremost, we must emphasize the importance of media literacy and critical thinking skills in our education system, empowering citizens to navigate the digital landscape with confidence and discernment. This involves teaching individuals to identify reliable sources, recognize misinformation, and engage in respectful dialogue with those who hold differing viewpoints.

Second, social media companies must be held accountable for their role in facilitating the spread of misinformation and contributing to political polarization. This can be achieved through regulatory frameworks that promote transparency and ethical content moderation practices. In addition, these companies should invest in technologies and initiatives aimed at reducing the spread of misinformation and fostering a healthier online environment.

Finally, governments must work to protect freedom of expression and uphold democratic values by resisting the urge to censor or control information. Instead, they should support policies that encourage an open discourse and the free flow of information, as well as promote international cooperation in addressing the challenges posed by social media and misinformation.

The rise of censorship and the suppression of information in democratic societies is a concerning trend that must be addressed through a combination of education, corporate responsibility, and government action. By working together, we can safeguard the fundamental

values of democracy and ensure that our societies remain open and resilient in the face of these challenges.

Chapter 10 Conclusion

This thesis delved into the development of the Fourth Industrial Revolution, and its impacts on the United States, particularly analyzing the role of social media and its algorithms in the ongoing political polarization occurring. Through a thorough analysis of the positives and negatives of this revolution, it became evident that social media has played the most significant role in the ever-expanding evolution of the political divide in this country. Our research redirected attention from the creation of fake news articles to individuals' perceptions of misinformation, as unwarranted skepticism and legitimate doubts about news stories both impact trust in media. Because of this, we now live in a world of illusions and doubts, intertwined with firm believers in the first thing they see. Truth is now subjective, not fact. Furthermore, this thesis highlighted the normalization of publicly sharing political opinions on social media, the algorithms keeping people in echo chambers, the government using algorithms to push their narratives, and ultimately censorship. Overall, this thesis has contributed to the ongoing conversation on political polarization and its correlation with the Fourth Industrial Revolution, emphasizing that people must become more aware of the things they say, the content they absorb, and what is happening behind closed doors while they are immersed and pulled down the social media rabbit holes.

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Education

The Pennsylvania State University

State College, PA

Month **4/2023**

College of Liberal Arts/Schreyer's Honors College

Bachelor of Arts in Philosophy (Justice, law, values) and Communication Arts & Sciences

Dean's List **5/7** semesters

Work History

Titan Development Group LLC

Administrative Assistant

Dorado, PR

11/20 – Present (2023)

- Took detailed videos and photos with the of the interior and exterior of construction projects for the company website and to submit to the prime contractor.
- Organized photos categorically by project.
- Edited photos for max resolution, added time/location stamps on the corner of the pictures.
- Designed and created company website
- Edited photos and videos for company website and Facebook page

Alliance for American Manufacturing

Intern

Remote

9/6 – Present (2023)

- Covered legislative hearings and wrote memos about them
- Wrote blogs for company website about hearings and news
- Helped produce 2022 Gift Guide
- Audited the company website for Made In America companies
- Tracked Steel production/Utilization

Pennsylvania State University

Teaching Assistant

State College, PA

1/9 – Present

- Supported student progress
- Graded assignments/Lesson planning
- Led class discussions on specific topics

Freelance Website Designer

Website Designer

Online

12/20 – 9/21

- Designed websites for small or new businesses.
 - Reached out to companies, or they reached out through Fiverr.
-

Additional Skills

- Exceptional skills with Excel, Adobe Premier Pro, Adobe Photoshop, Adobe Dreamweaver, and Adobe Acrobat
- Proficient in HTML and CSS coding.
- Fluent in American Sign Language.

Recognition

- Dean's list x5
- Dotterer Award Recipient