The Techno-Social World Handout

The book opens with the story of Thamus and Theuth as told in Plato's *Phaedrus*. It serves as a springboard to explore the complex relationship between technology and society. Neil Postman encourages readers to move beyond surface-level considerations of technology to understand its profound, all-encompassing impact on human life and culture. By considering technology as an ecological force and critiquing the shallow questions often asked about it, Postman seeks to foster a deeper awareness and more critical engagement with the technological forces shaping our world.

I. The Story of Thamus and Theuth

- **Thamus**: King of a great city in Upper Egypt.
- **Theuth**: A god and inventor of numerous things including number, calculation, geometry, astronomy, and writing.
- **Theuth's Proposition**: Theuth presents his inventions to King Thamus, claiming they will improve both wisdom and memory.
- **Thamus's Response**: Thamus critiques the inventions, particularly writing. He argues that writing will make people forgetful and ignorant, rather than wise. He fears writing will be a burden to society.
- **Error of Omission**: Thamus failed to foresee the benefits of writing.
- **Non-Neutrality of Technology**: Thamus understands that technology's impact is determined by its intrinsic structure, not merely its application. This is gleaned in the fact that the contents of writing do not matter to Thamus; he is concerned with what the medium of writing itself would do to the human mind.
- **Thamus' Warning**: The story of Thamus warns of those who master new technology gaining undue prestige and authority, a viewpoint also held by Harold Innis.
- **Knowledge Monopolies**: Those in control of a technology create monopolies of power, effectively forming a conspiracy against those without access. New technologies also break existing knowledge monopolies, creating new ones, and leading to winners and losers in society.
    - **Discussion Question:** Can you think of examples of technological revolutions that have led to new knowledge and power monopolies?
    - **The Case of Television**

        - **Winners**: Those who succeeded through television, such as executives and entertainers, defend and promote the technology.

        - **Potential Losers**: Schoolteachers, historically part of the printing press's knowledge monopoly, now face the potential loss of their status with the rise of television.

    - **The Case of Computers**

        - **Winners**: Large-scale organizations, researchers in natural sciences.

        - **Losers**: The masses, including various professions like teachers and mechanics, who might find their lives intruded upon, controlled, or reduced to mere numbers.

        - **False Promises**: The winners often sell the losers on marginal benefits of the technology without revealing the costs, leading to undue enthusiasm for the technology.

        - **Cultural Conspiracy**: Rather than a deliberate plan by winners, Postman suggests that the situation may reflect a culture unknowingly conspiring against itself. A cultural conspiracy is a situation where cultural beliefs and values may unknowingly work against the best interests of the society itself.

II. The Unpredictable Impact of Technology: Postman discusses the unforeseen and often unpredictable consequences of technological advancements within a culture. He delves into the idea that while technology changes the way a society functions, it also alters its perception of reality and the meanings of its foundational concepts. He gives various examples, such as the seemingly innocuous practice of grading, which transformed our perception of qualitative aspects of life into quantitative values. Postman says,

"This is what Marx meant when he said, "Technology discloses man's mode of dealing with nature" and creates the "conditions of intercourse" by which we relate to each other. It is what Wittgenstein meant when, in referring to our most fundamental technology, he said that language is not merely a vehicle of thought but also the driver. And it is what Thamus wished the inventor Theuth to see. This is, in short, an ancient and persistent piece of wisdom, perhaps most simply expressed in the old adage that, to a man with a hammer, everything looks like a nail. Without being too literal, we may extend the truism: To a man with a pencil, everything looks like a list. To a man with a camera, everything looks like an image. To a man with a computer, everything looks like data. And to a man with a grade sheet, everything looks like a number." (17).

So, while inventors may create technology with a particular intention in mind, the broader impacts on society can be far-reaching and unexpected, even contradicting the original purpose of the invention. Here are some more examples:

- **Clock and Capitalism**: A historical account of the mechanical clock's invention shows how it started as a religious tool but evolved into an essential instrument for capitalism:

> "The clock had its origin in the Benedictine monasteries of the twelfth and thirteenth centuries. The impetus behind the invention was to provide a more or less precise regularity to the routines of the monasteries, which required, among other things, seven periods of devotion during the course of the day. The bells of the monastery were to be rung to signal the canonical hours; the mechanical clock was the technology that could provide precision to these rituals of devotion. And indeed it did. But what the monks did not foresee was that the clock is a means not merely of keeping track of the hours but also of synchronizing and controlling the actions of men. And thus, by the middle of the fourteenth century, the clock had moved outside the walls of the monastery, and brought a new and precise regularity to the life of the workman and the merchant. "**The mechanical clock," as Lewis Mumford wrote, "made possible the idea of regular production, regular working hours and a standardized product." In short, without the clock, capitalism would have been quite impossible. The paradox, the surprise, and the wonder are that the clock was invented by men who wanted to devote themselves more rigorously to God; it ended as the technology of greatest use to men who wished to devote themselves to the accumulation of money.** In the eternal struggle between God and Mammon, the clock quite unpredictably favored the latter" (17).

- **Gutenberg's Printing Press**: The printing press is shown as a technology that had profound unforeseen religious impacts, fostering religious diversity and individuality.

- **Warnings of Thamus**: The figure of Thamus warns of inventors' limitations in understanding the broader societal consequences of their inventions, with examples like printing leading to a superficial conceit of wisdom.

Discussion Questions: (1) What are some examples of unpredictable effects of technological innovations? (2) How does Postman's argument about the Gutenberg press's transformative impact on European culture apply to today's digital age technologies like social media platforms and smartphones?

III. Competition Between Technologies and Worldviews: Thamus might have warned Gutenberg, as he did Theuth, that his invention would lead to a surge of uninstructed readers filled with false wisdom. This brings forth the principle that new technologies compete with older ones on multiple fronts, especially in shaping worldviews. This competition becomes evident when we consider that a medium carries an inherent bias. Historical examples include the alphabet challenging ideographic writing and television challenging the printed word. This clash of mediums can be likened to a collision of worldviews.

- **Media War**: The text describes the competitive nature of different media technologies and how they can represent conflicting world-views.

- **Education and Media Conflict**: In the U.S., such clashes are evident everywhere, but are most pronounced in educational settings. The printed word emphasizes logic, history, and discipline, while television prioritizes imagery, narrative, and immediate gratification. Many children, deeply influenced by television, struggle with the contrasting demands of the written word in schools. It's not that they're unintelligent; it's that they're caught in a battle between two media forms.

Worldviews in Collision: Given Postman's assertion that new technologies lead to a clash of worldviews, can you identify any current examples where this is evident?

Impact on Institutions: In what ways can you observe institutions (educational, political, religious, etc.) being threatened or transformed by new technologies today?

Using Technology for Unintended Purposes: Given the example of Gutenberg and the printing press, are there contemporary technologies that, while designed for one purpose, might be co-opted or reinterpreted for entirely different and possibly contradictory purposes?

IV. Key Insights and Ideas

- **Technological Dualism**: The principle that every technological advancement has both positive and negative effects.

- **Change in Meaning**: Technology changes the meanings of essential terms like "memory," "wisdom," "truth," and "law." The change is subtle, happening without full consciousness, impacting the way society thinks and communicates. Postman emphasizes how technological advancement not only adds new words to our language but fundamentally changes the meanings of existing ones. By introducing new concepts, technologies like the telegraph, television, and computer have subtly altered the understanding of terms such as "information," "political debate," "truth," and "law." These shifts happen swiftly and often without notice, with no official oversight or explanation. Even though the words themselves may remain visually the same and used in similar contexts, their meanings can be transformed or even reversed. Postman warns that technology quietly and imperiously takes control of vital terminology, reshaping the very words we live by without pausing to inform us or our institutions.

- **Technophiles**: Individuals who ardently or excessively love and promote technology.

- **Technophobes**: A stance skeptical of technological advancements, focusing on potential negatives or burdens.

- **Democratic Ethos and Optimism**: Especially in the United States, the widespread optimism leads to a belief that technological benefits will eventually spread evenly. Entrepreneurs exploit this optimism without revealing the price of technological change.

- **Technological Ecology**: Postman introduces the idea of technological change as ecological, meaning that the introduction or removal of technology doesn't merely add or take away something; it reconstitutes the whole environment. He uses the metaphor of removing or adding caterpillars from/to an environment to explain how a new technology alters everything in a society. For example, the introduction of the printing press didn't just add to Europe's culture; it transformed it. Similarly, television didn't just add to American culture; it changed its very fabric.

- **Diversionary Questions**: Postman critiques the superficiality of the questions often asked about new technologies. Questions focusing on immediate, practical advantages or disadvantages divert attention from the more profound and often dangerous changes that

technology can cause in our concepts, values, and social structures. Postman explores the impact of technology on different fields like education, business, religion, and politics. Rather than merely focusing on efficiency or effectiveness, he urges consideration of how technology changes our conception of these areas. For example, how it changes our ideas of learning, reality, religion, and citizenship.

    - **Discussion Question:** Ask the students to come up with real life examples of 'diversionary' questions, as they relate to AI or some other cutting edge technology

- **Critique of Technopoly**: Postman introduces the term "Technopoly" to describe a cultural condition where technology is not just a tool but dominates thought and life, redefining culture, social institutions, and human thought. He warns about the strange and dangerous consequences of this state, highlighting the need for awareness, understanding, and critical engagement with technology.

Discussion Questions:

Educational Implications: How have computers and television reshaped our understanding of education? Are they improving or deteriorating the traditional educational values?

Ecological Analogy: Do you agree with Postman's analogy that technological change is ecological, leading to total transformation rather than mere addition or subtraction? Why or why not?

Distractions and Underlying Essence: Reflect on T.S. Eliot's poetry analogy. Can you think of instances where the obvious or immediate benefits of a technology might distract us from understanding its deeper implications?

Technopoly's Dangers: What are the potential dangers of a culture dominated by Technopoly, as Postman describes it? How can society guard against these dangers?

Future of Learning: How do you envision the classroom of the future, given the ever-increasing influence of technology? Will the traditional idea of schooling become obsolete?

Discussion Question on Changes in Meaning: How does the integration of a new technology into a culture reshape that culture's understanding of foundational concepts like "truth" or "reality"?

Discussion Questions: Given the unpredictable nature of technological impacts on society, how should inventors and policymakers approach the development and integration of new technologies? In what ways might modern technologies be subtly changing our daily behaviors, relationships, or values in ways we haven't yet recognized? How does the medium through which we receive information (e.g., printed books, online articles, social media) shape the message itself and our interpretation of it?

Chapter 2: From Tool-Using Culture to Technocracy

How the Printing Press Destroyed Epic Poetry: Indeed, toward the end of that book, Marx includes a remarkable paragraph that would be entirely at home in McLuhan's Understanding Media. "Is Achilles possible," he asks, "when powder and shot have been invented? And is the Iliad possible at all when the printing press and even printing machines exist? Is it not inevitable that with the emergence of the press, the singing and the telling and the muse cease; that is, the conditions for epic poetry disappear?"

Three Types of Cultures: I find it necessary, for the purpose of clarifying our present situation and indicating what dangers lie ahead, to create still another taxonomy. Cultures may be classified into three types: tool-using cultures, technocracies, and technopolies. At the present time, each type may be found somewhere on the planet, although the first is rapidly disappearing: we must travel to exotic places to find a tool-using culture.

Tool-Using Cultures:

- Postman explores the concept of tool-using cultures, detailing how tools were invented to serve specific purposes and integrate with cultural values, rather than oppose them. Though there may be variations in technological advancement across different cultures, they all share a characteristic where tools don't threaten the cultural integrity. Instead, tools are governed by spiritual ideas, social customs, and religious or philosophical beliefs, as exemplified by samurai warriors' use of swords and the prohibition of the crossbow by the Church.

- Postman emphasizes that tool-using cultures are not defined by the *quantity* of technologies but by the *relationship* between tools and the belief system. Various historical examples highlight the ingenious and productive nature of tool-using cultures, from medieval engineering marvels to the introduction of windmills and eyeglasses. While some cultures have shown contempt for technology, as in the case of ancient Greece, the integration of tools in ways that align with a culture's world-view is the defining feature.

- However, there are instances where tools have disrupted and altered cultural beliefs, such as the introduction of the stirrup in combat leading to changes in feudal society, or matches in an African tribe altering sexual habits. Postman concludes that tool-using cultures can be both technologically rich and surprisingly sophisticated, but the relationship between tools and ideology is critical, and technology's influence can sometimes be profound and even destructive, as seen in the example of the Ihalmiut tribe's eradication following the introduction of the rifle.

Examples of Minor Technological Innovations Changing Cultures: Postman discusses the unintended societal consequences that arise from introducing new technologies to various cultures. In medieval Europe, mills became associated with prostitution, to such an extent that Saint Bernard attempted to close them down. He failed because mills had grown too vital for the

economy. Another example involves a tribe in Africa that had a practice of starting a new fire after each act of sexual intercourse, which made acts like adultery more public and thus harder to hide. The introduction of matches eliminated the need to fetch fire from neighbors, disrupting this longstanding custom and potentially affecting cultural values around privacy and adultery. Lastly, the replacement of bows and arrows with rifles had a disastrous effect on the Ihalmiut tribe in the 20th century. This technology didn't merely change their culture, but eradicated it. The central theme is that even seemingly minor technological changes can have profound and sometimes catastrophic effects on cultures and societies.

Modern Technocracies of the West have their root in three great inventions: The transition from medieval beliefs to modern technocracies in the West can be traced back to three groundbreaking inventions from medieval Europe: the mechanical clock, which altered perceptions of time; the printing press with movable type, challenging the oral tradition's epistemology; and the telescope, which confronted foundational Judeo-Christian theological beliefs.

The Telescope as the Most Transformative Invention: Among these inventions, the telescope is deemed the most transformative. Earlier astronomers like Copernicus and Kepler, while not initially relying on the telescope, utilized simpler observational tools to redefine celestial perspectives. The telescope's refinement, however, led to a paradigm shift, displacing Earth from the universe's center. This revelation shook the moral core of the West, unsettling longstanding religious convictions about humanity's central place in God's design. Galileo's telescopic discoveries and subsequent writings magnified the dissonance between science and theology. While he didn't invent the telescope, Galileo's transformation of the tool into a scientific instrument paved the way for the astronomical observations that challenged established theological perspectives. His forthright disagreements with the Scriptural interpretations of the cosmos created tension with religious authorities, leading to his trial and conviction for heresy. Nevertheless, the repercussions of his work, alongside those of Copernicus and Kepler, paved the way for Newton, who further distanced theology from science.

While They Laid the Foundations for Technocracies, They Themselves were Men of Tool Using Cultures: *Intriguingly, these pioneering figures – Copernicus, Kepler, Galileo, and even later, Newton – sought to reconcile their discoveries with their faith. They viewed their quest for mathematical and scientific understanding as a religious pursuit, deciphering God's design through nature's mathematical patterns.* Despite the seismic shifts they initiated in understanding the universe, they remained tethered to the theology of their era. Their primary focus was on the pursuit of truth rather than the acquisition of power. This emphasis on accuracy and precision characterized the late sixteenth century, reflecting a profound evolution in thought and belief that laid the foundation for the rise of modern technocracies.

Francis Bacon as the first man of the technocratic age: Francis Bacon, born in 1561, was the first man of the technocratic age. In saying this, I may be disputing no less an authority than Immanuel Kant, who said that a Kepler or a Newton was needed to find the law of the movement of civilization. Perhaps. But it was Bacon who first saw, pure and serene, the connection between science and the improvement of the human condition. The principal aim of his work was

to advance “the happiness of mankind,” and he continually criticized his predecessors for failing to understand that the real, legitimate, and only goal of the sciences is the “endowment of human life with new inventions and riches.” He brought science down from the heavens, including mathematics, which he conceived of as a humble handmaiden to invention. In this utilitarian view of knowledge, Bacon was the chief architect of a new edifice of thought in which resignation was cast out and God assigned to a special room. The name of the building was Progress and Power.

More on Francis Bacon as a Pioneer of Technocracy: Despite not being a prominent scientist, Sir Francis Bacon was an influential thinker who held forward-thinking ideas about the role of technology and science in society. He conducted no groundbreaking research of his own and even died from an experiment trying to preserve meat in snow. However, his greatness was in his deep reflection on the relationship between invention and societal progress. In "Novum Organum," Bacon emphasizes the transformative power of discoveries, highlighting three inventions—printing, gunpowder, and the magnet—as particularly influential in shaping the world. He saw science not as a collection of abstract theories but as a record of practical achievements that improved human life. His work laid out a philosophy of science rooted in the belief that the betterment of the human mind and condition were interlinked. He criticized four main barriers to understanding, termed the "four Idols," which misled people in their quest for knowledge. *Bacon's writings are strikingly modern, viewing science as a tool for empowerment and progress. He envisioned an organized, well-funded, and public-facing scientific community, much like how the scientific enterprise operates today. Ideas such as governmental support for inventors, scholarly journals, international scientific collaborations, and the importance of public science communication were all promoted by Bacon. He is considered the pioneer of technocracy, a belief system that champions the role of technology in governing and improving society. However, it took Europe another 150 years after his death in 1626 to fully embrace this mindset. With the rise of technocracy, European society began to value knowledge as power, recognize human capability for progress, and understand poverty as a significant evil*. While this transition did alter the perception of God's design in life, it's noted that most people would not have exchanged their contemporary lives for an earlier existence. The technological shift was irreversible, and as the poet Stephen Vincent Benét suggested, the best response was to acknowledge its presence without overly praising or condemning it.

Defining Cultures: Given the distinctions between tool-using cultures, technocracies, and technopolies, where would you place contemporary Western society? Are there still remnants of tool-using cultures in our midst, which is to say, cases in which technologies are made to conform with our values instead of our values being made to conform with technology? Are there technologies today that might be seen as soulful or deeply integrated into cultural or spiritual values, reminiscent of tool-using cultures of the past?

The Next "Telescope": Given the transformative impact of the telescope in redefining humanity's place in the universe, what modern invention or discovery might play a similarly groundbreaking role in shaping our understanding of existence?

Unintended Consequences: Choose a contemporary technological innovation. How might this technology have unintended consequences, similar to the introduction of mills in medieval Europe or matches in the African tribe?

Chapter 3: From Technocracy to Technopoly

Technocracy:

- In a technocracy, tools play a central role in the operational and symbolic structure of the culture. Technocratic societies emerge when, for the first time in human history, tools and techniques begin to have a central role in thought-world of culture.
- However, while tools have significant influence, they do not challenge or alter the established culture's beliefs and values; they simply enhance the existing culture's potential.
- In technocratic societies, the primary change is operational; the social, symbolic, and ideological worlds remain intact. Though technology might change how certain tasks or functions are achieved, it doesn't necessarily change the cultural or moral structures of the society.
- Technocracies tend to restrict and guide technological innovation so that it doesn't challenge the current moral or symbolic order.

Technopoly:

- Technopoly arises when the cultural, social, and symbolic worlds of a society begin to be redefined and dominated by technology.
- In a technopoly, technology is more than just a tool; it becomes the culture itself. It shapes our worldview, redefines our values, and changes what we consider to be meaningful or true.
- The triumph of technopoly is when it becomes the source of all information and knowledge, erasing the boundaries between contexts and reducing all forms of cultural life to its directives.
- In technopolies, the traditional beliefs, customs, and ethics of the culture are subordinate to technology. Technology becomes the measure by which the worth of a thing or a process is determined.
- There's a certain "**technological determinism**" in a technopoly, where the culture seeks all its solutions in technology and measures success primarily by technological standards.

In summary, while technocracy might increase the prominence and influence of technology within a society, it doesn't change the fundamental values and beliefs of that society. Technopoly, on the other hand, goes a step further: technology not only influences but also redefines and dominates every aspect of cultural life, making it the primary arbiter of values, meaning, and truth.

The Beginning of the First True Technocracy: To be cautious about it, we might locate the emergence of the first true technocracy in England in the latter half of the eighteenth century—

let us say with James Watt's invention of the steam engine in 1765. From that time forward, a decade did not pass without the invention of some significant machinery which, taken together, put an end to medieval "manufacture" (which once meant "to make by hand"). The practical energy and technical skills unleashed at this time changed forever the material and psychic environment of the Western world.

Adam Smith as Another Starting Point for Technocracy: The passage traces the origins and growth of technocracy, the system in which society is controlled by those skilled in technology. The roots of technocracy are linked to 1776 with the publication of Adam Smith's "Wealth of Nations," which laid the groundwork for the transformation from small-scale personalized labor to large-scale mechanized production. Smith introduced the concept of a self-regulating market steered by an "unseen hand" that rewards efficient producers.

The Advent of the Factory System: As the 18th century closed, technocracy advanced notably with the factory system initiated by Richard Arkwright, the father of modern technocratic capitalism. He instituted factories where workers, particularly children, were trained to keep pace with machines, marking a major shift towards mechanized labor. By the beginning of the 19th century, England was teeming with such entrepreneurial ventures. The era also witnessed the invention and spread of various technologies, like the power loom and machine-tool industry, all of which substantially changed the landscape of production.

Critics of the Rise of Technocracy: However, the rise of technocracy wasn't without its critics. Intellectuals like William Blake and Matthew Arnold criticized the soulless nature of mechanization, highlighting its spiritual costs. Utopian communities also emerged in response, aiming to alleviate the human consequences of a technocratic society. The Luddite Movement epitomized the resistance to technocracy, with workers expressing discontent through the destruction of machines.

The 19th Century as a Conflict Between Technology and Traditionalism: Postman emphasizes that while technocracy reshaped material civilization, it didn't erase the values and traditions of prior ages. In 19th-century America, traditions persisted, albeit under the looming shadow of a burgeoning technocratic culture. Mark Twain serves as an exemplar, celebrating American industry's achievements while simultaneously extolling preindustrial values in his works. The text suggests that technocracy's relative novelty and limited scope at the time enabled older, tool-using cultural values to coexist and continue influencing society.

The reasons for the rise of Technopoly in America:

- **American Character**: The American ethos, as described by Tocqueville in the 19th century, is characterized by an inherent belief in progress and limitless possibility. Factors that may have contributed to this mindset include the immigrant nature of its population, frontier mentality, natural resources, and the freedoms offered in the country. This distrust of constraints or skepticism towards set cultures created a favorable environment for unchecked technological advancements.

- **Capitalist Drive**: Late 19th and early 20th-century American capitalists were quick and decisive in harnessing new technologies' economic potential. Figures like Morse, Bell, Edison, and Rockefeller prioritized technological innovation over preserving the past. Their influence helped shape the popular belief that the future needn't be tied to the past.

- **Technological Triumphs**: As technology brought obvious benefits like convenience, comfort, and speed, it started replacing traditional beliefs and practices. For every tradition or belief, there seemed to be a technological counterpart. As technology progressed, older belief systems began to weaken, challenged by philosophical and scientific thought from figures like Nietzsche, Darwin, Marx, Freud, Watson, and Einstein. Amid the dissolution of traditional beliefs, technology remained steadfast and reliable.

- **Devaluation of Traditional Beliefs**: The success of technology combined with the discrediting of older belief systems left technology as the primary belief. Traditional value systems were challenged by groundbreaking thoughts and discoveries, further solidifying faith in technology.

In essence, due to the interplay of these factors, America became fertile ground for Technopoly, going beyond mere technocracy. The unique combination of the American ethos, capitalist ambition, technological successes, and the erosion of traditional beliefs made the U.S. especially predisposed to a Technopoly.

Discussion Questions: (1) How do we distinguish between a technocracy and a technopoly? Would you consider contemporary America more of a technocracy or technopoly? (2) Can the capitalist drive to prioritize technological innovation over the past be both beneficial and detrimental? Discuss the balance between progress and preserving heritage.

Faith in Technology: As traditional value systems began to weaken due to new philosophical and scientific thoughts, technology remained reliable. How has this shift impacted the spiritual and moral compass of society? Can technology fill the void left by waning traditional beliefs?

Reflection on Technopoly: If we accept the notion that America is predisposed to Technopoly due to its unique ethos and history, how might other cultures or countries be more resistant or susceptible to such a dominance of technology? Can you think of any global examples?