The view that technical things have political dimensions is standard in debates about technology and society. These concepts demand explicit consideration. In the words of Lewis Mumford, authoritarian and democratic technologies have frequently coexisted, and nuclear power will inevitably push society in that direction. Recent campaigns against nuclear power and in favor of solar energy have centered their arguments around a similar idea. Technology has historically been seen as a force for social justice, freedom, and democracy. As expanding and freeing forces, the factory system, the automobile, the telephone, radio, television, the space program, and of course nuclear power itself, have all been cited. Modern politics and technology are closely related, although it appears entirely erroneous to claim that some technologies have political characteristics. People have politics, not stuff, and it seems even more ridiculous to blame the victims than the hardware. Those who toy with the idea that technical artifacts have political dimensions are frequently advised to concentrate on the social or economic structure in which they are entrenched. This perspective offers a counterbalance to simplistic technological determinism.

The corrective asserts that technological issues are irrelevant and that social scientists can rely entirely on their tried-and-true representations of social power. There are valid reasons why political scientists, historians, and philosophers have developed a particular interest in technology. A theory of technological politics, which takes technical artifacts seriously and defines certain technologies as political phenomena, is a recurrent theme in modern social and political thinking. In what follows, I'll explain and provide examples of two ways that artifacts might have political qualities: first, when a technological tool or system is used to settle a dispute in a particular society; and second, when a technological advancement seems to have political undertones.

On Long Island, New York, there are numerous bridges that cross parkways that are incredibly low with limited clearance at the curb. Even those who happen to observe this structural oddity would not interpret it in any way. On Long Island, Robert Moses purposefully built low-hanging overpasses to deter buses from using his parkways. This was done to restrict access for low-income and racial minority groups to Jones Beach, a well-regarded public park. Because of his interactions with mayors, governors, and presidents as well as his deft manipulation of legislatures, banks, labor unions, the press, and public opinion, Robert Moses's life is intriguing. But his innovations, the massive engineering undertakings that contributed significantly to New York's present, are the most significant outcome of his work.

There are several examples of physical arrangements that have political goals that are either explicit or implicit in the history of architecture, city planning, and public works. These include the wide Parisian boulevards designed by Baron Haussmann, the bizarre concrete structures, and the enormous plazas built on American university campuses to quell student protests. Without a history of worker attempts to organize, police suppression of the labor movement in Chicago at the time, and the events surrounding the Haymarket Square bombing, it is impossible to comprehend the story of pneumatic molding machines at Cyrus McCormick's reaper manufacturing plant in Chicago in the middle of the 1880s.

It is clear from examples like Moses' low bridges and McCormick's molding machines how crucial it is to make technical preparations before using the aforementioned items. We will be oblivious to a lot of the moral and political categories we use to assess technology, those which have to do with its instruments and applications.

The organized movement of disabled people in the United States in the 1970s drew note of the fact that several devices, tools, and structures used by the general public made it difficult for many disabled people to move around freely, systematically excluding them from public life. Many technological developments have political repercussions beyond the mere distinctions between "intended" and "unintended". Saying "Someone intended to do somebody else harm" in such circumstances is neither accurate nor insightful. Researchers at the University of California developed the robot tomato harvester, which has transformed social interactions in rural California and reduced costs by roughly $5 to $7 per ton compared to hand harvesting. Mechanization in the tomato sector has reduced the number of tomato producers and increased tomato production but at the expense of other rural agricultural communities.

A group of farmworkers and other interested parties are suing the University of California for using tax dollars for programs that benefit private interests at the expense of farmworkers, small farmers, consumers, and rural California in general. The creation of the tomato harvester was the outcome of a societal process where scientific advancement, technological innovation, and corporate profit reinforce one another in ingrained patterns that are clearly influenced by political and economic power. There are two types of decisions within a specific category of technological change: whether to develop and adopt the thing or not. Arguments in favor and against the approval of a significant new law are frequently just equally relevant. Even if a utility firm obtains approval to construct a sizable electric power line, significant disputes may still exist over the location of the line's path and the construction of its towers. The endeavor to show how ostensibly innocent design elements like public transit systems, water projects, industrial machinery, and other technologies conceal social decisions of deep significance is at the heart of some of the most fascinating research on technology and politics.

I would draw the following broad conclusions from examples: technologies are techniques for creating order in our world. Technologies are shaped by the structures that societies pick, and these structures have a long-term impact on how people work, communicate, travel, consume, and other things. In this regard, technological advancements resemble enactments of law or political foundations in that they provide a framework for social order that will last for many generations. The contention that some technologies are inherently political in a particular way has not been addressed by any of the arguments or examples up to this point. This argument contends that some technologies do not permit such flexibility and that selecting them signifies selecting a particular style of political life. Friedrich Engels' 1872 short essay "On Authority" is a panegyric for authoritarianism and encourages its readers to picture a world in which the revolution has already taken place. Will power no longer exist or will it merely take a different form? In his response, Engels pulls knowledge from three sociotechnical systems of the time: railroads, ships at sea, and cotton-spinning mills. He notes that in order to prevent a complete breakdown, employees must submit to strict discipline and adhere to set working hours.

According to Engels, the roots of authoritarianism are deeply ingrained in human interaction with science and technology, and these forces exact revenge on man by imposing a true tyranny that is independent of all forms of social organization. Strong authority defenses based on purported requirements of technical practice have a long history. Plato supports his case for the legitimacy of state authority with the analogy of a ship at sea. Engels argues that power is justified directly regarding technology rather than through the traditional Platoon analogy. This is contrary to Karl Marx's assertion in Volume One of Capital that rising mechanization will make the hierarchical division of labor obsolete. An essential dilemma for socialism is raised by the theoretical conflict between Marx's position in the Capital and Engels in his book.

Numerous situations have pushed the claim that technology is in some way fundamentally political. According to one interpretation, the establishment and maintenance of a specific set of social circumstances as the system's operating environment is necessary for the adoption of a given technical system. According to a different interpretation of the same logic, a certain technology is strongly compatible with but not strictly necessary for certain social and political ties. Both technically and politically, solar energy is compatible with a democratic, egalitarian society. Depending on whether the circumstances hypothesized are stated to be required by, or strongly compatible with, the workings of a particular technical system, the argument that solar technologies are compatible with democracy can be presented in several different ways. Political debates involving technology play a significant role in contemporary political discourse, even though they frequently lack clarity regarding the claims being made. They are frequently employed to support or refute suggestions for new technologically based action. If we look at social patterns that make up the contexts of technical systems, we discover that certain gadgets and systems are virtually always associated with methods of organizing power and authority. The atomic bomb is a political product by nature. Due to its deadly characteristics, it must be governed by a centralized, strictly hierarchical chain of command that is closed to any outside influences that could cause uncertainty in how it operates. According to Alfred D. Chandler, the requirement for a sizable, centralized, hierarchical organization run by highly qualified management was the cause of the railroads' expansion. Chandler demonstrates that, in most situations, the small conventional family firm, a predominant social type, was unable to complete the task. For contemporary sociotechnical systems to function successfully, efficiently, swiftly, and safely, certain internal social organization needs must be met. It's possible that different possible forms of governance—like democratic, and decentralized worker self-management—would be better suited to running factories, refineries, communications networks, and railroads than the ones Chandler proposes. But the real question is whether these systems need this pattern.

In order to address concerns regarding the morality of technological systems, we must evaluate the moral justifications for practical necessity and compare them to other moral justifications. Large, complex technical systems-based cultures make moral justifications that aren't grounded in practical necessity seem increasingly "idealistic" and unimportant. The idea that the internal politics of technology systems may be kept easily apart from the polity is one attempt to save the autonomy of politics from practical necessity. In a recent survey of American corporate leaders, it was discovered that they disliked democratic precepts such as "one man, one vote" and favored centralized public management over wealth redistribution or greater public involvement. The likelihood that terrorists, organized criminals, or other individuals will steal this deadly material rises as a result of the usage of plutonium as a fuel in nuclear reactors.

Russell W. Ayres's study of the legal implications of plutonium recycling concludes that once a quantity of plutonium has been stolen, the case for turning the country upside down to get it back will seem compelling. This raises the possibility that regular citizens could be subject to background security checks, covert surveillance, wiretapping, informers, and even martial law. I've described two interpretation styles that show how political aspects might be present in objects. The first variety looks at how specific elements in a system's design or organization can offer a pact. I have argued that both types of interpretation can be used in various situations and that, within a given technological complex, certain elements may be flexible while others may be entirely insoluble. We must study technical systems and their histories, as well as the ideas and disputes of political philosophy, in order to comprehend which technologies and contexts are significant to us.