



## Modern Technology as a Philosophical Problem: A Typology of Critical and Affirmative Attitudes in Light of Three Fundamental Propositions

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**A**bstract: This paper examines modern technology not merely as a collection of tools and processes but as a philosophical problem concerning the nature, value, and existential orientation of humankind. The study aims to reconstruct a coherent conceptual framework for analyzing four principal responses to technology—resistance, critical passivity, reform and substitution, and support and advancement—and to evaluate them in light of three fundamental propositions: (1) the overall harmfulness of modern technology, (2) whether technological harms are intrinsic or incidental, and (3) the human possibility of resisting technological expansion. The methodology combines conceptual analysis, argumentative evaluation, and comparative study of major contemporary positions, focusing especially on representative thinkers such as Martin Heidegger, Andrew Feenberg, Theodore Kaczynski, Ray Kurzweil, and proponents of traditionalist schools. The findings indicate that each of the four approaches rests upon a distinct set of philosophical and value-laden assumptions, and that the proposed tripartite criterion enables a more precise differentiation of technological policies. Furthermore, the study argues that the deepest divergences stem from competing conceptions of the autonomous human being and its relation to nature and the technical order. In conclusion, the paper proposes the conceptual and ethical conditions necessary for a potential rapprochement among these perspectives and outlines the research requirements for developing a reliable medium-term strategy toward technology.

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## **I**ntroduction:

Over the past three centuries—and especially following the advent of the printing press and the Industrial Revolution in Britain, which propelled an unprecedented acceleration of technological development—the minds of many Western thinkers have continually been occupied with the question of how to respond to this deluge of change. The main question of this article is how the solutions proposed by Western philosophers in confronting modern technology (technology as a whole, not merely this or that particular technology) can be systematically categorized and analyzed for purposes of examination and evaluation. Under this main question, two subsidiary questions arise: first, what are the theoretical foundations of each of these proposed solutions; and second, whether it is possible, by synthesizing the insights present in these perspectives, to arrive at a more comprehensive model—or even a fifth approach—that simultaneously takes their fundamental concerns into account. The

critical foundations of these philosophers, examined within the framework of the first question, may be articulated at different levels—ontological, metaphysical, anthropological, or sociological. Nevertheless, from the overall outcome of these foundations, a certain practical stance toward modern technology ultimately emerges. The aim of this article is to provide, in light of these foundations and their practical consequences, a preliminary framework for dividing and classifying the various approaches, in order to clarify whether a form of dialogue or shared horizon among them is possible. Clearly, this classification does not claim to cover all existing disagreements concerning modern technology. It is possible that two thinkers may fall into the same category with respect to their proposed solutions while differing in some of their theoretical foundations, or conversely, that philosophers with similar foundations may arrive at different practical conclusions. Moreover, placing the name of a philosopher or thinker within a particular category does not mean that he is exclusively

confined to that framework, nor that he has explicitly formulated his views in such a manner; it also does not necessarily constitute a comprehensive interpretation of his thought. Rather, it simply indicates that, based on the overall tendency or the predominant emphases of his works, he may be regarded, in a general sense, as closer to that particular category—while alternative interpretations may also remain possible. The principal criterion in this classification is a kind of graduated spectrum, ranging from the most radical and confrontational positions to the most affirmative and optimistic approaches toward modern technology.

Another important point is that this article does not undertake the task of extracting or reconstructing the philosophy of technology of Western philosophers and thinkers. Extensive discussions such as whether technology is neutral or value-laden; the relationship between technology and power and domination; the relation of technology to subjectivity and agency; and the relation of technology to design, the body, perception, and mediation—

although valuable and significant in their own right—are not the main or independent subject of this article. They are considered only insofar as a given thinker refers to them within the critical theoretical foundations of his position.

Now the question is that should we assist and accelerate these transformations as far as possible and thereby impose a new order on the world, or should we adopt a largely passive stance and simply adapt ourselves to the resulting changes, or should we resist them to the extent possible in order to preserve a natural or traditional way of life?

Each of these strategies and perspectives has its advocates and exemplars in the West (specifically Europe and North America, the birthplace of modern technology), and a study of their doctrines yields important insights for articulating a proper pattern of technological practice. Moreover, a comparative and critical examination of these approaches exposes their relative strengths and weaknesses and clarifies the standing of any proposed new model vis-à-vis earlier ones.

Because the range and number of such strategies is very large, a systematic presentation and analysis requires a coherent taxonomy. Accordingly, in this paper I classify them into four distinct categories according to the degree of their acceptance: (1) resistance, (2) critical passivity, (3) reform and replacement, and (4) support and advancement.

On this ordering—which runs from outright opposition to unconditional endorsement—any proposed approach to modern technology may be situated within one of the four categories. The first category, resistance, encompasses views that judge the harms of modern technology to outweigh its benefits on the whole and regard those harms as constitutive of modern technology itself; accordingly, they recommend preventing its penetration into human life. The presupposition of this family of positions is that humans possess the capacity to stand against the prevailing tide of technological expansion. Thus this stance rests on three fundamental commitments: (a) the overall harmfulness of modern technology, (b) the intrinsic (rather than merely

contingent) character of its harms, and (c) the human capacity to resist technological encroachment.

The second set of strategies—critical passivity—shares, like the first, a pessimistic assessment of the technological current and also regards the harms as intrinsic to modern technology. It differs, however, in its view about human agency: proponents hold that human beings have limited power to withstand the disruptive torrent of modern technology and thus must accept the exigencies of the time with resignation. Hence the difference between this second category and the first lies solely in the denial of the third commitment above.

The third category comprises approaches that acknowledge the serious harms of modern technology but maintain that these harms are not inescapable: through reform of existing technologies it is possible to produce a superior generation of technological artifacts that preserves prior benefits while minimizing harms. The distinction between these views and those in the first two categories, therefore,

concerns the second commitment—whether the harms are intrinsic.

Finally, the fourth category includes the ardent defenders of modern technology, who contend that its harms are not as grave as critics claim, or that ongoing technological progress will itself rectify existing problems; on this view there is no cause for alarm, and the imperative is to continue accelerating technological development in order to enhance human welfare and comfort. Clearly, the disagreement between this group and the first runs through all three commitments and their policy implications. In what follows I identify some of the most prominent representatives of these positions and seek to examine their arguments in greater depth.

### **1. The Strategy of Resistance**

Among the various formulations of resistance, one can discern a spectrum ranging from maximal to minimal opposition. In other words, even among those who advocate resistance, some maintain that all manifestations of technology

must be categorically rejected—including even traditional technologies—whereas others contend that it suffices to resist only certain forms of technology, and that not all kinds deserve the same response. Accordingly, we shall examine the views of anti-technological thinkers under two general categories: naturalists (anti-technology in the general and maximal sense) and technophobes (anti-technology in the narrower and more moderate sense).

#### **1-1. Naturalists**

Throughout the written history of the Western world, at least since ancient Greece, many schools of thought have praised the untamed, natural life of humankind and expressed a preference for it over urban or “civilized” life—especially the modern, technological form of civilization. From the Cynics of ancient Greece to the hippies, minimalists, and primitivists of the twentieth century, there has been a shared conviction that humanity ought to return to a life in harmony with nature and, by renouncing its boundless ambitions, rediscover the beauty and quiet pleasures of an

unspoiled natural existence.

Here, all doctrines and individuals who advocate such a return to the natural life—regardless of their differing motives or minor variations—will be called naturalists. On this basis, the naturalists' opposition to technological life, or at least their independence from human artifacts, is fundamental and not limited to modern technology. Among the many naturalist traditions, we shall briefly discuss two major movements: Cynicism and Romanticism, corresponding respectively to the ancient and modern periods of Western thought. For reasons of logical order and philosophical richness, we shall begin with the Romantic movement, whose written legacy and theoretical depth are greater, and which engaged more explicitly in the praise of nature and the critique of civilization; afterward, we will turn to the Cynics, who not only expressed naturalism in theory but embodied it in their way of life.

### **1-1-1 Romanticism**

The Romantic movement was a literary, political, and social reaction against the

instrumental rationalism of the Enlightenment, founded upon the critical reflections of the eighteenth-century French philosopher Jean-Jacques Rousseau. What distinguishes this movement from other primitivist currents is its historical simultaneity with the Industrial Revolution and the French Revolution, both of which are often regarded as turning points in the modernization of the West and the transformation of traditional into modern ways of life. Consequently, Romanticism's defensive reaction against industrial life was deeper and more intense than that of other naturalist schools; in this respect, it may rightly be considered the most significant expression of naturalist thought.

From his earliest work, *Discourse on the Sciences and the Arts*, to his most famous treatise, *The Social Contract*, Rousseau consistently denounced urban and technologically dependent life. His central contention was that through rationalism and the pursuit of invention and industry, humankind had distanced itself from a free and authentic existence. In other

words, Rousseau's critique of technological life was motivated by concern for the human being itself and for the virtues proper to it. For him, the "semi-savage" human enjoys a calmer and more genuine happiness, while the ills of modern humanity stem from its turn toward industry and its estrangement from nature. Even if civilized life is longer in duration, it is inferior in quality to that of the uncivilized:

He who has lived most is not he who has numbered the most years, but he who has been most truly conscious of what life is. A man may have himself buried at the age of a hundred years, who died from the hour of his birth. He would have gained something by going to his grave in youth, if up to that time he had only lived (Rousseau, 1889: 15)

By "feeling life," Rousseau meant a harmonious and reconciled existence with nature (Rousseau, 1889: 15). Thus, to the extent that a person lives in flight from nature, he is little different from the dead. Moreover, Rousseau warns that even when humans attempt to master nature and expose its secrets to mitigate its harshness, they ultimately fail:

Our minds have been corrupted in proportion as the

arts and sciences have improved. Will it be said, that this is a misfortune peculiar to the present age? No, gentlemen, the evils resulting from our vain curiosity are as old as the world. (2019: 5)

These statements imply that nature is good and beneficent in itself, and that life lived in accordance with it possesses intrinsic value. Inequality, life's difficulties, and moral vices all began or intensified when humans abandoned the path of harmony with nature and simple living and turned to a life of possession, luxury, and indeed technological:

As long as men remained satisfied with their rustic cabins; as long as they confined themselves to the use of clothes made of the skins of other animals, and the use of thorns and fish-bones, in putting these skins together; as long as they continued to consider feathers and shells as sufficient ornaments, and to paint their bodies of different colours, to improve or ornament their bows and arrows, to form and scoop out with sharp-edged stones some little fishing boats, or clumsy instruments of music; in

a word, as long as they undertook such works only as a single person could finish, and stuck to such arts as did not require the joint endeavours of several hands, they lived free, healthy, honest and happy, as much as their nature would admit, and continued to enjoy with each other all the pleasures of an independent intercourse but from the moment one man began to stand in need of another's assistance; from the moment it appeared an advantage for one man to possess the quantity of provisions requisite for two, all equality vanished; property started up; labour became necessary; and boundless forests became smiling fields, which it was found necessary to water with human sweat, and in which slavery and misery were soon seen to sprout out and grow with the fruits of the earth. (Rousseau, 2012: 46-47)

Rousseau thus strives to demonstrate that natural life is in every respect superior to industrial life, and that industrial life is, in every respect, subject to criticism. His attacks on industrial civilization are directed toward three principal domains: physical

health, mental well-being, and morality. In his view, civilized humans are weaker—physically, psychologically, and morally—than their semi-savage counterparts.

Regarding the first point, Rousseau repeatedly argues that artificial instruments and inventions have enfeebled modern man. From the very beginning of life—when, by swaddling and over-clothing infants to protect them from the cold (Rousseau, 1889: 16), we weaken them—to adulthood, when we ride horses instead of walking and rely on weapons instead of our own strength, civilization continually diminishes our physical vitality. Just as the domesticated ox, confined to its stable, is less vigorous than the wild ox, the civilized human is less agile and lively than the natural man (Rousseau, 2012: 48).

In response, one might argue that modern knowledge and tools have enabled us to cure bodily diseases. Rousseau indeed concedes that in the state of nature, many children die young. Yet he insists that such suffering is part of the natural order and should not be interfered with, lest the entire

harmony of nature be disturbed and no genuine benefit obtained. Moreover, Rousseau notes that physical pain is insignificant compared to psychological anguish, since “no one kills himself because of bodily pain; suicides are caused by the torments of the mind. Hence, mental health is far more important than bodily health; and if civilized life has advanced in the treatment of physical disease, it has done so at the cost of inner peace (Rousseau, 1889: 23-24).

With this, Rousseau’s second critique of modern life—concerning mental well-being—becomes clear. The natural man, having fewer needs, attains contentment more easily and is less troubled by care or anxiety. The civilized man, by contrast, burdened with greater knowledge, perceives ever more needs and therefore suffers more regrets and sorrows. Science, art, and new technologies have thus not elevated our spirits but wearied and corrupted them: “As the conveniences of life increase, as the arts are brought to perfection, and luxury spreads, true courage flags, the virtues disappear;” (Rousseau, 2019:

12).

Regarding morality, Rousseau believes that industrial life deprives humanity of its most essential virtue—honesty. The possession of knowledge, art, and industrial refinement imposes a kind of monotonous politeness that prevents us from showing our true selves: “We no longer dare seem what we really are” (Rousseau, 2019: 4). Before the rise of the sciences and the arts, “outward appearances were always the true image of the heart’s inclinations,” and “the first glance at a man revealed the difference in his character.” This transparency, Rousseau claims, protected early humans from vices such as suspicion, coldness, fear, prudence, hatred, and betrayal. Thus, the primitive man—though perhaps more brutish by nature—was morally superior to the modern one. Furthermore, unlike Hobbes, Rousseau affirmed the natural goodness of humanity and even denied, in his correspondence with the Archbishop of Paris, the doctrine of original sin

(Copleston, 1993: 67).<sup>1</sup>

Among the few philosophers of the Romantic era who, under Rousseau's influence, actually withdrew into nature was Henry David Thoreau, the American writer and anarchist thinker who lived for two years (1845–1847) in the woods near Walden Pond and later composed *Walden*, or *Life in the Woods* in praise of the natural life. Thoreau writes: “Most of the luxuries, and many of the so-called comforts of life, are not only not indispensable, but positive hindrances to the elevation of mankind” (Thoreau, 2015: 14).<sup>2</sup>

### 1-1-2. Cynicism

In the history of Western thought, we can identify philosophers who, both theoretically and practically,

remained committed throughout their lives to a “natural mode of life” and sought to live as the earliest humans—or even as animals—once did. The Cynics, whose intellectual lineage can be traced through Antisthenes back to the Socratic school, considered the virtuous and happy life to be one that is in harmony with nature and free from material anxieties and social conventions. They endeavored to embody these convictions in their manner of living.

Diogenes of Sinope, the greatest representative of this school, chose a thoroughly natural life. Throughout his life he disregarded human conventions and social norms and lived without reliance on artificial tools or instruments. He sought to model his life after

Michel de Montaigne, in the sixteenth century, drawing upon both *Columbus's travel accounts* and his own observations of the indigenous peoples of northern France, praised the natural disposition of forest dwellers in his *Essays*, especially in the chapter “Of Cannibals.” According to Montaigne, the so-called “savages” possess many virtues, and even if they exhibit certain barbaric behaviors—such as cannibalism—these stem from their natural temperament and therefore are not morally blameworthy. By contrast, the barbarity of civilized man is not natural

but rather the product of corrupt education and moral depravity, and hence is truly reprehensible (Montaigne, 1877: 255–258). In any case, through the admiration expressed by figures such as Columbus and Montaigne, the expression “*noble savage*” (*le bon sauvage*) came into vogue during this period, imbued with an almost excessive optimism toward nomadic indigenous tribes.

Regarding Thoreau's intellectual indebtedness to Jean-Jacques Rousseau, Mark J. Temmer (1961), “Rousseau see: and Thoreau,” *Yale French Studies*, No. 28, Yale University Press, pp. 112–121.

that of animals and the “barbarian” or “savage” peoples, taking them as exemplars in opposition to Hellenic civilization (Copleston, 1946: 120). He was content to live without a house—dwelling in a barrel—and even went barefoot in winter. In short, the Cynic conception of a natural life entails liberation from every superfluous need that arises from human conventions. One should respond only to the genuine and natural needs of the body and mind, and not to artificial or socially constructed ones (Long, 1996: 34).

However, Diogenes’ attitude, unlike that of his teacher Antisthenes, was not motivated by ascetic or world-renouncing impulses. Rather, it rested upon a form of natural hedonism, and—much like Rousseau—he defended sexual freedom and communal living. Thus, he too regarded the natural life as intrinsically valuable and sought to renew moral foundations by returning people to natural values. To the extent that certain acts, such as

incest or cannibalism, are observed in nature, Diogenes held that these may likewise be permissible for human beings. Cultural customs and social taboos—being relative and variable—should not obstruct the satisfaction of natural human inclinations<sup>1</sup> (Gomperz, 1964, Vol. 2: 159-160).

In connection with the present study—namely, the proper manner of confronting the technological world—the Cynics’ position implies a radical opposition to the use of technological devices and instruments. This follows from their central principle: the minimization of needs and a return to what is purely natural. Even natural needs, they claimed, should be met with the least possible mediation or technological intervention. Hence Diogenes’ entire property consisted of a simple cloak, a staff, and a barrel—just as a dog, his preferred model, would require little or nothing more for a pleasurable existence.

Ultimately, in comparing these two naturalistic

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This subject reveals the striking similarity between Diogenes and

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Montaigne in their defense of natural life and its moral implications (see: Montaigne, 1877: 255–258).

movements—Romanticism and Cynicism—we may observe that while the Romantics were largely confined to a theoretical rejection of modern civilized life and a verbal glorification of nature, the Cynics were committed to natural life both in thought and in practice.

### **1-2. Technophobes**

Technophobia refers to opposition to technology—not to all technology whatsoever, but specifically to modern machine-based technology. The term “technophobe” thus designates all who reject the advanced technologies of the modern age and advocate a return to life prior to the emergence of such technologies. Unlike the naturalists, technophobes do not reject tools and artifacts per se; rather, they distinguish between pre-industrial technologies—which they regard as genuine human achievements—and the machine technology of modern industrial civilization. They consider pre-modern, rational, and artisanal civilization superior to both modern industrial life and primitive natural existence.

Among the many

technophobic schools and movements, we shall begin with those that have engaged most systematically in theoretical reflection—seriously diagnosing the maladies of modern technology and extolling pre-modern forms of technē—and then proceed to those that, in addition to theoretical critique, have also adopted concrete, practical forms of resistance.

#### **1-2-1. Traditionalists**

Here, Traditionalism does not refer to the general or colloquial sense of conservatism or reactionary thought, but to a distinct intellectual movement of the twentieth century founded by René Guénon in France and Frithjof Schuon in Switzerland, and currently represented most prominently by Seyyed Hossein Nasr. Because of its profound and systematic opposition to modern civilization and technology, this school provides perhaps the most comprehensive critique of modern technics, rendering it unnecessary to discuss at length other anti-technological currents such as deep ecology or radical environmentalism.

Accordingly, we shall focus on Nasr's position as the most articulate Traditionalist voice on the nature of modern and pre-modern technologies.

Nasr regards modern technology as possessing an essentially distinct and discontinuous nature compared to pre-modern technology, marking the Industrial Revolution in Western Europe as the critical point of divergence (Nasr, 2007: 91). In this era, machines were created as instruments of mass production and rapidly came to replace human labor in many domains. The fundamental difference, Nasr argues, lies in the direction of mastery: whereas traditional technologies were extensions of the human body—servants of the soul—in the modern age technology has become the master, and the human spirit now serves it (Nasr, 2007: 96). Thus, modern technology is not merely an advanced continuation of traditional craftsmanship, but something essentially different.

From Nasr's perspective, several characteristics distinguish modern technology:

1. Non-neutrality. Technology is never neutral. The culture that sustains it is in conflict with the human soul as an eternal being, and it stands opposed to all traditional societies that maintained a spiritual bond between humans and their artifacts (Nasr, 2007: 98). Modern culture embodies greed and the belief in absolute human entitlement over nature and even over oneself, while neglecting the sense of duty that all traditional cultures placed before the assertion of rights (Nasr, 1993: 99).
2. Intimate link with modern science. Although science and technology are conceptually distinct, Nasr holds that they became inseparably united after the Industrial Revolution, each fueling the advance of the other (Nasr, 1994: 190). Modern science—particularly since the seventeenth century—has been animated by the Baconian aim of dominating nature, and modern technology has served as its

primary means of realizing this aim (Nasr, 1994: 181–190).

3. Separation from art. In earlier ages, *technē* and art (*ars*) shared a common meaning: both referred to the act of making. After the Industrial Revolution, however, they diverged completely. While this split has become natural in Western languages, it remains alien to Persian (*ṣanʿat*) and Arabic (*ṣināʿah*), where the unity of art and craft still survives (Nasr, 2007: 93–94).

Nasr enumerates numerous harms arising from modern technology. Among individual harms are the erosion of creativity and skill, as mechanical labor replaces artisanal craftsmanship; and psychological fatigue, as repetitive, uncreative work generates boredom and the craving for artificial leisure. In contrast, the traditional craftsman found joy in creative labor and therefore required no weekend escapism (Nasr, 2007: 97–100). Other ills include greed and consumerism (Nasr, 2005: 19) and a deep spiritual

crisis intensified by modern media technologies (Nasr, 2001: 245–246).

Beyond individual harms, Nasr points to two major social consequences: overpopulation (Nasr, 2007: 108) and widening global inequality (Nasr, 2007: 110–111). Yet perhaps the gravest of all, he insists, is the environmental catastrophe. Modern humanity, he writes, has turned nature from a “spouse” to whom one owes duties into a “prostitute” from whom one takes pleasure without responsibility (Nasr, 1997: 18). For Nasr, technology—even in its most peaceful and benevolent forms—is the principal agent of this devastation (Nasr, 1997: 132–135).

As for the remedy, Nasr prescribes a return to traditional life—that is, (a) refusing unconditional submission to modern technics, and (b) preserving and reviving traditional technologies, which differ in essence from modern ones.

The first aspect does not mean an absolute rejection of all modern technology. Nasr praises those who can still live traditionally, but he

acknowledges that divine providence has placed us in an age of cars rather than donkeys (Nasr, 2007: 100). Yet this does not justify blind acceptance of every new technology without reflection on its consequences (Nasr, 2007: 100). He explicitly warns against genetic engineering, industrial agriculture (Nasr, 2007: 103), mobile phones (Nasr, 2007: 104), and the aesthetic corruption produced by mixing modern and traditional architecture.

The second aspect—preserving and reviving traditional technologies—includes maintaining traditional architecture and urban design, which foster humane relations, sustainable transport, and efficient use of energy (Nasr, 2007: 103). Reviving traditional crafts, such as Persian hand-woven carpets, likewise contributes to cultural and spiritual renewal (Nasr, 2007: 104–105).

Nevertheless, Nasr and other Traditionalists have often been accused of inconsistency: though theoretically opposed to modern technology, they continue to live within modern societies and rely on modern

means—including print and digital media—to disseminate their critiques. As Feenberg observes:

“It was not long ago that a blanket condemnation of technology seemed plausible to many social critics. This attitude, however, still survives as a kind of elitist disdain for technology among intellectuals who nonetheless use it incessantly in their daily lives.” (Feenberg, 2005: 57)

Accordingly, in what follows we shall turn to those technophobes who, unlike the Traditionalists, not only reject modern technology in theory but also strive in practice to detach themselves from it and to organize their lives around pre-industrial techniques—namely, certain religious communities and the Luddites.

### 1-2-2. Religious Technophobia

Among the opponents of modern technology who share, at the theoretical level, views similar to those of the Traditionalists regarding the nature of modern technics—but who, unlike the latter, adhere to their convictions in practice and thus exemplify the label technophobes—are certain

predominantly Christian and Protestant Anabaptist sects that have adopted a clear and distinctive stance toward technology: living in the traditional way. The Amish and the Mennonites, as the two principal branches of the Brethren communities, as well as some Quakers, are religious groups that, first for theological and later for moral and ethno-local reasons, have engaged in collective resistance against all forms of modern technology. They strive to organize their lives around traditional techniques and to prevent modern machinery and devices from penetrating their way of life.

In addition to their ascetic and technophobic orientation, a second common feature of these sects is their non-proselytizing character. They make no attempt to propagate their views or recruit others to their lifestyle; they are concerned solely with ordering their own existence, and some even prefer that outsiders remain ignorant of their internal affairs and refrain from interfering in their way of life.

Within these communities, no modern technological device

may be used unless its use is first approved by the Church's legislative council—and such approval rarely occurs. Out of the sixty to one hundred members of the council, even if only two or three dissent, the device in question will be forbidden. Consequently, electricity, all electrical appliances, motor vehicles such as cars and airplanes, and even telephones are prohibited. This prohibition arises from their belief in the value-laden nature of modern technology: every technology embodies certain moral or theological assumptions, and many are seen as contrary to their religious and ethical ideals. For instance, they hold that “the pride, sense of power, and comfort that come with owning an automobile may cause a person to become self-absorbed and thus neglect the community” (Paya, 2014: 183).

By contrast, “horse-drawn carriages promote social equality, for their appearance is uniform, devoid of ornamentation and bright colors, and none can move conspicuously faster or slower than the others” (Paya, 2014: 185).

Likewise, many followers of

the Mennonite sect—another branch of Anabaptism of Swiss and German origin—residing in Canada and the United States (especially in Pennsylvania and Ontario), live in the manner of the Amish and are known as Old Order Mennonites. Although they differ from the Amish in minor or superficial respects, they share their avoidance of modern technology and their reliance on traditional means such as the horse and buggy—so much so that they are sometimes called the “horse-and-buggy Mennonites” (Scott, 1996: 12–30).

### 1-2-3. The Luddites and Neo-Luddism

The Luddites were groups of workers who, with the rise of mechanized textile factories in early nineteenth-century England, lost their livelihoods. Between 1811 and 1816, led by the semi-legendary figure Ned Ludd, they organized riots in Nottingham and other northern towns, forming secret groups that destroyed spinning and weaving machines with hammers and axes. They also sent threatening letters to factory owners in an effort to deter further mechanization. The movement was eventually

crushed by the British government, and many of its participants were executed or exiled (Jones, 2006: 47–49).

Since then, the term Luddism has been used in the West to refer to any radical opposition to machine technology. One of the most famous modern Luddites is Theodore Kaczynski, the so-called Unabomber. A mathematical and physical prodigy, Kaczynski entered Harvard at sixteen, earned his Ph.D. in mathematics from the University of Michigan, and by age twenty-five held an assistant professorship at the University of California, Berkeley. The renowned analytic philosopher Willard Quine remembered him as “one of the brightest students I ever taught, finishing the course with a score of 98.9” (Weil, 2000: C06).

However, after only two years, Kaczynski resigned his post and withdrew to a cabin in the wilderness of Montana to learn the skills of self-sufficient living. During this period, he developed an intensely anti-technological outlook and began a campaign of bombings against engineers and

developers of modern technology. For these acts he was sentenced in 1995 to life imprisonment without parole, a sentence he continues to serve. Yet beneath his reclusive and violent exterior lay a highly analytical mind; even in prison, he has continued to write on the destructive consequences of modern technology. His critiques have been so influential that even Ray Kurzweil, a leading techno-optimist, has described Kaczynski's Manifesto (Industrial Society and Its Future) as "remarkably logical and coherent" (Kurzweil, 1999: 131). Similarly, Bill Joy, a prominent software engineer and co-founder of Sun Microsystems, remarked: "Although I realize I might be one of Kaczynski's next targets—and although he is clearly a Luddite—this does not invalidate his arguments. I have found valuable insights in his reasoning." (Joy, 2000: 240–241)

Kaczynski's central argument is that since modern technology is a system in which all parts are interrelated, you cannot get rid of the bad parts while retaining the good ones

(Kaczynski, 2008: 215). On this basis, he advocates radical action to liberate humanity from the technological system—ranging from abandoning modern technology altogether to punishing the engineers and scientists responsible for the current condition (Kaczynski, 2008: 215–216).

The later movement of Neo-Luddism, however, softened these radical and violent elements, directing its opposition not toward the creators of technology but toward the tools themselves. Chellis Glendinning, the leading figure of Neo-Luddism, published in 1990 her Notes toward a Neo-Luddite Manifesto, in which she expressed both humanistic and environmental concerns. Neo-Luddism, she wrote, is not opposed to technology as such, but to those forms of technology that are inherently destructive of human life and community. At the same time, she emphasized that all technologies are political, functioning as instruments of governmental control and exploitation. Glendinning proposed several programs for the Neo-Luddite future, the first of which was the

abolition of certain major technologies—nuclear (both military and civilian), chemical, genetic-engineering, television, electromagnetic, and computer technologies (Glendinning, 1990: 4–5).

Having now surveyed the principal modes of resistance to modern technology—from the various forms of naturalism (Romantic, Cynical, and Hippie) to the diverse expressions of technophobia (Traditionalism, Religious Anti-Mechanism, and Luddism)—we may conclude that, within the very heart of the West, the birthplace and promoter of modern technology, numerous critical schools have arisen that reject this trajectory. For them, the only effective response to technological harm is active resistance against the totality—or at least the bulk—of modern technology.

Yet not all critics of modern technology endorse such a militant stance. Two alternative strategies have been proposed, which we shall examine next: critical passivity and reform and replacement.

## **2. The Strategy of Critical Passivity**

All the views thus far discussed under the heading of “the strategy of resistance” are united by the belief that one can and must act to prevent technology from further undermining the integrity of human life. Whether naturalistic or technophobic, these approaches share the conviction that resistance remains possible.

However, in the twentieth century—especially after the two world wars—many thinkers concluded that technological transformations, though detrimental to authentic human existence, had nonetheless acquired an uncontrollable dominance over human life. Humanity, they argued, can no longer hope either to reform or to reverse the path it has taken. Technology advances along a unilinear and determinate course, and this progress possesses a self-sustaining or autonomous character. In other words, scientists, engineers, inventors, and policymakers no longer determine how technology will be used; modern technology, by virtue of its inner complexity, escapes

human control once created. This perspective—commonly referred to as technological determinism—is closely linked to the notion of autonomous technology (see: Dusek, 2014: 84-95).

It thus becomes clear that the technologically determinist critics, though convinced that modern technology undermines authentic human life and portends a dystopian future, offer no concrete remedy. They view the technological order as a necessary product of modern science and civilization, beyond human restraint. They are, in effect, mourners of authentic life—lamenting an ominous and irreversible future. Among the most prominent figures who have approached technology in this critical yet tragic spirit are Karl Marx, Martin Heidegger, and social critics such as Jacques Ellul and Robert Heilbroner.

Among these, Heidegger—perhaps the most frequently cited philosopher in the philosophy of technology—demands from modern humanity nothing beyond thoughtful reflection, attentive listening to the voice of Gestell (the essence of technology), and

openness to alternative disclosures of Being, especially in art. He sees no other effective human response to technological enframing. From the standpoint of more practical movements such as the Hippies, Luddites, and religious technophobes, Heidegger's attitude amounts to passivity. Especially when we directly compare his approach with that of the voluntarists (see, for example: Rouhani, 2024). Thus, despite his critical stance toward technology, Heidegger's proposal may be regarded as an alternative to, rather than a continuation of, the strategy of resistance.

Although Heidegger is often grouped among the technological determinists who regard modern technology as a decisive force undermining authentic human existence, his analysis differs profoundly from purely sociological or economic accounts. In *The Question Concerning Technology* (1954), Heidegger insists that technology is not merely a collection of tools or machines but a mode of revealing—*aletheia*—through which Being discloses itself in the modern epoch. He calls this mode of

revealing *Gestell* (enframing), a structure that compels both nature and humanity to appear as resources (*Bestand*) available for manipulation and exploitation (Heidegger, 1977, pp. 12–23). Thus, the danger of technology does not lie in its instruments, but in the metaphysical attitude it enforces: the reduction of Being to mere utility. Under the sway of *Gestell*, humanity forgets its essential openness to Being and becomes itself a component within the technological system.

Nevertheless, Heidegger does not advocate a direct resistance or a programmatic opposition to technology. He repeatedly warns that “no merely human doing” can control the essence of technology (*das Wesen der Technik*) because that essence is not something humanly fabricated, but rather a historical destiny (*Geschick*) of Being itself (Heidegger, 1977, p. 25). Consequently, what remains possible is not active rebellion but *Gelassenheit*—a meditative releasement or letting-be. In *Discourse on Thinking* (1959), he calls for a posture of thoughtful openness (*besinnliches Nachdenken*),

through which humans might learn to “listen” to the call of Being instead of attempting to dominate it (Heidegger, 1966, pp. 53–56). This attitude does not promise emancipation from technology but a transformation in our relation to it—a shift from mastery to mindfulness. Such an approach, of course indirectly, can lead to a more peaceful coexistence with nature and a non-dominating dwelling in the home of the world (for further reading, see: Sobhanian and Safian, 2019; Tabatabaie, 2016).

From this perspective, Heidegger’s proposal can hardly satisfy those who seek a practical or political alternative to the technological order. To many critics—including pragmatists and neo-Luddites—his stance appears as a refined form of resignation, an ontological quietism dressed in philosophical depth. Yet for Heidegger, such *Gelassenheit* is not passivity but the only genuine form of action still possible in an age when technology defines the horizon of thought itself. True openness to Being may, in his view, prepare the space for “another beginning,” one in which art

(*die Kunst*) or poetic dwelling could once again reveal the sacred dimension of existence (Heidegger, 1971, pp. 33–35). In this sense, Heidegger's reflection offers not a manual for resistance, but an invitation to re-think the meaning of human dwelling amid the technological epoch.

### **3. Reform and Substitution**

As discussed in the previous sections, both proponents of the “resistance approach” and critics of “passive and technological-determinist” stances agree on at least two points:

1. The harms of modern technology are very serious and dangerous.
2. These harms are intrinsic to modern technology, and a harm-free modern technology cannot be realized.

Among these, some critics, while accepting the first point, questioned the second and argued that modern technology could be reformed in a way that minimizes its harm. The Frankfurt School, as one of the most significant philosophical schools critical of technology in the West, especially through

Herbert Marcuse's writings, nurtured hope that efforts to reform modern technology might be possible. In the later generation of this school, Andrew Feenberg, through his Critical Theory of Technology, sought to provide a roadmap for realizing this aim. Accordingly, in this section, Feenberg's approach is reported as one of the most serious strategies for addressing modern technology via reformed technology.

Feenberg considers his critical theory a continuation of the critical theories of thinkers such as Marx, Dewey, Marcuse, and Langdon Winner. The common feature of all critical theories of technology is the claim that “technologies are not separate from society, but rather compatible with specific political and social systems” (Feenberg, 2009: 146).

He presents his historical analysis of technology on two different levels under the concept of instrumentalization: the level of our primary functional relationship with reality and the level of design and implementation (Feenberg, 2005: 50). What happens in these two levels is a process of initial decontextualization

followed by recontextualization: at the primary level of instrumentalization, tools and humans are separated from their original context according to their affordances, and are reduced merely to their useful features; at the second level, these simplified objects are designed and recontextualized according to various social requirements, such as aesthetic and ethical considerations (Feenberg, 2005: 49–50).

For example, a tree that becomes a table must be analyzed at two levels: first, when the tree is cut and transformed into timber—here, it is merely separated from its previous context and has not yet undergone any specific design; second, when the timber is made into a table, it can carry various valuable designs—designed for children or adults, luxurious or simple, artistic or plain.

Based on this, the most important characteristics of modern technology according to Feenberg are:

1. Social Relativity: Feenberg argues that efficiency is only one criterion for the success

of a technical design. A design is not chosen solely for its engineering accuracy or efficiency; in addition to efficiency, the interests and ideologies of users also play a role. Thus, the criterion of efficiency is dependent on the society in which a technology is deployed, making the success or superiority of a technology relative (Feenberg, 2005: 51).

2. Value-ladenness: According to Feenberg's second-level instrumentalization and his emphasis on incomplete determination, technology is not neutral and carries specific ethical and social values. He explicitly states that modern technology has created new values and diminished previous moral ones. However, this value-ladenness is not fixed or immutable; just as capitalists and technocrats once imposed their desired values on society through technology, it is possible to revive previous values with

new technical systems (Feenberg, 2005: 54).

3. Undetermination: Feenberg rejects technological determinism, the belief that technical objectives are fixed once and for all (Feenberg, 1999: 209). He provides numerous examples of how people and activists have redirected technological development, viewing such instances as evidence against determinism (see Feenberg, 2010: 8–11; 1999: 77–95).

Regarding harms, Feenberg, following the Frankfurt School, focuses on two general categories:

1. Harms to the lower classes of society.
2. Harms arising from domination and control.

The first category corresponds to Marx's concerns—exploitation and deskilling of the working class by capitalists and owners of modern industries. The second, not limited to human-to-human relations but extending to human-nature relations, stems largely from Marcuse's critique

of the one-dimensional man (for a detailed account, see Feenberg, 2002: 39–90). In his works, Feenberg examines these harms empathetically through the lens of Marx and Marcuse and also addresses environmental and cultural harms of technology (see Feenberg, 1996; 2008).

Solution: Given these harms and the nature of technology, Feenberg recommends reforming existing technology to the extent possible, through public participation. He maintains that:

1. The current situation is not as hopeless as strict critics claim.
2. The solution lies in social participation, allowing everyone's needs and values to influence the design of new technologies or the reform of harmful ones.

In other words, if the current state of technology is problematic, it is due to the monopoly of design and production by the capitalist class and their imposition of values. Whenever other social groups have resisted this trend, technology has been relatively

reformed. Thus, technology has a political nature, and addressing its problems requires political action (Feenberg, 2005: 55–56).

Illustrative Example: In the case of air pollution, until the lower classes protested, technical reforms of polluting products were not taken seriously by authorities. Once protests peaked, authorities were compelled to act, leading to gradual redesign of cars and other polluting sources (Feenberg, 2005: 56).

#### 4. Support and Advancement

Proponents of modern technology, sometimes sarcastically called technophiles, are few among philosophers but relatively numerous among natural scientists, engineers, producers, policymakers, and rulers. They can be categorized into three groups:

1. Scientific Philosophers (Theoretical domain): Defend technological progress and its compatibility with human aspirations, responding to nature-centered philosophers.

2. Optimistic Futurists (Scientific domain): Examine observable evidence of technological advancement to predict a bright future, countering critics who foresee a bleak technological future.
3. Engineers and Technocrats (Practical and policy domain): Actively advance ongoing technological trends, effectively opposing practical Luddism.

##### 4-1. Scientific Philosophers

If Jean-Jacques Rousseau is the leading defender of naturalism in modern philosophy, Francis Bacon is the foremost defender of science-oriented technology. Unlike Rousseau, who attributed little role to science and arts in human happiness, Bacon sought human well-being in empirical science. While Rousseau considered authentic life to be in accordance with nature, Bacon believed in human mastery over nature. Bertrand Russell notes that Bacon was the first to emphasize that knowledge is power (Russell, 1957: 564). These ideas of Bacon are most

prominently manifested in his two works in praise of experimental science — *The Advancement of Learning* and *The New Organon* — as well as in his semi-fictional book *The New Atlantis*, which envisions the emergence of an industrial society of the future.

Francis Bacon holds a pivotal place in the history of thought, for he lived on the threshold of the Industrial Revolution in England and was among the first philosophers to provide the theoretical foundations for legitimizing experimental science and human mastery over nature. Before him, nature was regarded as the perfect manifestation of divine wisdom, inviting contemplation and reverence rather than manipulation. Bacon, however, reversed this attitude and, through his famous dictum that “knowledge is power,” made human beings the agents of understanding and controlling nature (Bacon, *The Advancement of Learning*, 1605, Book I, §5). He insists that science should not serve idle speculation or scholastic debate, but rather the “enlargement of the bounds of

human empire, to the effecting of all things possible” (*Novum Organum*, 1620, I, Aphorism 129). Bacon did not consider this transformation merely scientific but also moral and theological. In *The Advancement of Learning*, he declares that God has set before humankind two books—the book of Scripture and the book of Nature—and that the human being must study both to attain redemption from the deficiencies of the Fall (Bacon, 1605, Book I, §6). Expanding upon this idea, Bacon refers to the biblical command in *Genesis*—“subdue the earth”—to interpret the recovery of humankind’s lost dominion over nature as a sacred duty (*Novum Organum*, I, Aphorism 9).

Regarding physical health, Bacon held an exceptional trust in experimental science. In his semi-fictional work *New Atlantis* (1627), he portrays “Salomon’s House,” an ideal scientific institution devoted to the “prolongation of life, the recovery of youth, and the perfection of the human body” (Bacon, *New Atlantis*, 1627, p. 33). For Bacon, science was not merely a means of

understanding creation but a way of participating in and improving it—a continuation of divine workmanship by human hands. Morally, too, Bacon viewed knowledge as the highest virtue, since, as he asserts, a morally upright person without knowledge of evil and the nature of corrupt men remains defenseless against them; and even a good man cannot effectively reform others without a clear understanding of vice (*The Advancement of Learning*, II, §22). Thus, for Bacon, knowledge itself constitutes a moral condition for a good and well-ordered life.

After Bacon, few top-level Western philosophers defended empirical science and modern technology with such optimism. Notable subsequent science-oriented thinkers included Saint-Simon and Auguste Comte (Dusek, 2006: 38-53). In the twentieth century, philosophers mostly emerged as critics of modern technology, leaving advocacy to scientists and engineers.

#### 4-2. Optimistic Futurists

Since modern science and technology advanced rapidly and progress became the

dominant term in the scientific community, predicting humanity's future gained importance. Futurists analyze the speed of technological progress and obstacles in order to forecast future trends.

Optimistic, science-oriented futurists such as Jacque Fresco, Raymond Kurzweil, David Diamandis, and Mark Stevenson defend ongoing technological progress. For instance, Kurzweil, whose computer and digital technology predictions have largely come true, believes that faster technological advancement improves human life and remedies technological harms. Any attempts to restrain innovation out of fear of its consequences will deprive humanity of greater welfare (Kurzweil, 2001).

David Diamandis, in *Abundance: The Future Is Better Than You Think*, presents extensive scientific evidence that greater technological power ensures a brighter future. Using a three-tier abundance pyramid—1. water, food, shelter; 2. energy, education, access to information, communication tools; 3. health and freedom—

Diamandis argues that with current technological progress, all three tiers will improve in the next two decades (Diamandis, 2012: 12–27).

Examples supporting his claim include:

- Vertical farming in urban centers: Reduces transportation costs, minimizes pesticide and fossil fuel use, and lowers environmental harm (Diamandis, 2012: 106–108).
- Hydroponics and aeroponics: Water-efficient farming, with aeroponics using only 6% of current water consumption (Diamandis, 2012: 105–106).
- DIY inventors: Independent innovators can implement solutions without major financial or governmental resources (Diamandis, 2012: 119–130).
- Technophilanthropists: Figures like Bill Gates dedicate significant resources to solving global poverty (Diamandis, 2012: 132–139).

Kurzweil, Diamandis, and other optimistic futurists argue

that resisting technological progress is neither wise nor beneficial; confidence in the self-correcting nature of modern technology is essential to reap its benefits.

#### **4-3. Engineers and Technocrats**

In the pre-modern era, scientists and engineers generally adopted a cautious approach in publishing their findings and inventions, always mindful of the potential misuse of their work. Famous examples include Archimedes refraining from writing about some of his mathematical discoveries due to the dangers of their engineering applications, and Leonardo da Vinci avoiding disclosure of his submarine design out of fear that humans' wicked nature would use it destructively. However, with the advent of the modern period and following Galileo, engineers abandoned such prudence and future-oriented caution. Influenced by the theoretical frameworks of philosophers such as Bacon and Voltaire, who emphasized the absolute utility of science and industry, they focused primarily on scientific freedom and on striving to release as many inventions as possible into the

competitive market of modern industry (Micham, 1994).

After World War II, following humanity's misuse of modern technology for ambition and destruction, engineers accepted certain limitations regarding some military technologies—at least nuclear energy. However, their goal was primarily to restrict science from military use and preserve it for civilian applications, not to completely halt its development in all domains. This fearless spirit of modern engineers gradually extended into politics, where rulers and policymakers, welcoming modern industry, enabled further technological advancement. A visible example of engineers' involvement in governance is the Technocracy Movement in 1930s America, where economist Thorstein Veblen and engineer Howard Scott sought to replace businessmen in positions of power with engineers (Dusek, 2014: 42–43). Although the movement waned after 1936, technocracy evolved into a deeper, more complex phenomenon, gradually influencing political systems throughout the twentieth century.

From the 1950s onward, complex technocracy, initially in the United States, the Soviet Union, and Western Europe, and later worldwide, no longer meant that engineers and technologists directly controlled political power. In post-industrial societies—having transitioned from agricultural (feudal) and industrial (mechanized modern) stages to service and information-based economies—information technology predominates, and politicians and rulers must follow plans formulated by technical specialists, scientists, engineers, accountants, economists, media psychologists, and similar experts (Dusek, 2006: 44–47).

In other words, due to the technological restructuring of society and the dependence of power on information technology, rulers and politicians can no longer survive solely through capital and military might. They are compelled to continuously share power with engineers and scientists. Consequently, politicians—whether voluntarily or reluctantly—pursue further development of technology within their domains

to maintain power, and therefore cannot be expected to offer purely disinterested justifications in defense of modern technology.

### 5. Final analytic discussion

An examination of the four major approaches to modern technology—resistance, critical passivity, reform and replacement, and support and advancement—reveals that their divergences are not merely empirical disagreements about the benefits and harms of technology, but rather stem from fundamental differences in their conceptions of *human nature*, *the human place within nature*, and *the limits of moral and rational agency*. In other words, each perspective offers a distinct answer to three perennial questions: Is technology intrinsically good or evil? Can human beings meaningfully guide or restrain it? And is the relationship between human beings and technology external or internally constitutive?

The first approach, resistance, rests on a form of *negative essentialism*: it views modern technology as something external,

domineering, and corruptive—essentially hostile to natural and moral life. Although this view arises from an authentic ethical concern for the preservation of human integrity, it ultimately denies the possibility of technological reform or redirection, thereby calling humanity to a form of retreat or nostalgic primitivism. Its philosophical importance, however, lies in highlighting the ontological dangers of technological domination and offering a deep moral critique of the modern project of progress.

The second approach, critical passivity, appears to share this suspicion of technology but adds a radical pessimism about human agency. Here, the history of technology is conceived as an autonomous and irreversible process—an unfolding destiny from which humans can no longer withdraw. Though it risks falling into quietism, this standpoint retains an *existential alertness* to what Heidegger called the danger of *Gestell*, the enframing that reduces being to mere resource. In this sense, it warns us that technology is not simply a neutral instrument but a mode of revealing that can

estrane human existence from its authentic ground.

The third approach, reform and replacement, represented by thinkers such as Andrew Feenberg, opens a middle path between fatalism and rejection. It insists that technology is neither inherently evil nor value-neutral but socially and politically conditioned. By democratizing the design and use of technological systems, Feenberg argues, we can reorient technology toward human and ethical ends. The strength of this view lies in preserving the Heideggerian insight into alienation while simultaneously reclaiming the possibility of praxis—of transformative human participation in shaping technological life.

The fourth approach, support and advancement, exemplified in the works of Francis Bacon and, in contemporary times, of futurists such as Kurzweil and Diamandis, is grounded in a profound optimism about scientific rationality and the self-corrective power of progress. For its proponents, the expansion of knowledge and technology is not only a path to

material improvement but also to moral and even spiritual refinement. Yet this optimism harbors its own peril: by identifying moral good with technical progress, it risks reducing human agency to consumption and control, thereby obscuring the moral boundaries of instrumental reason.

Taken together, these perspectives suggest that no single framework can offer a complete normative system for confronting technology. Each captures a partial but indispensable dimension of the human–technological nexus: resistance stresses moral vigilance and ecological care; critical passivity reveals the ontological depth of technological domination; reform and replacement emphasizes participatory agency and the potential for ethical redirection; and support and advancement preserves the creative and hopeful spirit of scientific inquiry. A comprehensive ethical philosophy of technology must, therefore, integrate these dimensions into a *normative balance*: moral responsibility toward both humanity and

nature, awareness of the dangers of technological enframing, faith in the potential for reform, and a sustained hope in the human intellect's capacity to reweave its relationship with the world.

In this broader light, the ethics of technology emerges not as a negation of science nor as blind submission to it, but as a call to technological moral self-awareness—a recognition that every invention and every technological decision is, in essence, a moral choice about the kind of humanity we wish to become. This integrative stance seeks to reconcile the authenticity sought by the critics with the transformative aspiration of the defenders, establishing a conceptual bridge between philosophy, science, and ethics that can sustain a more holistic and humane technological future. It is, of course, clear that this article does not claim to present such a system; rather, such a survey can only serve as a proposal for further studies in this field and an invitation to reflect on more comprehensive solutions.

#### **Contemporary Approaches**

Over the past two decades, the

philosophy of technology has gradually shifted away from large-scale interpretations of the “essence of technology” toward more diverse approaches that focus on lived experience, technological design, and the ethical and political consequences of technological systems. One of the most influential developments in this period has been the expansion of the postphenomenological tradition in the philosophy of technology. Initiated in the work of Don Ihde, this approach has been further developed in the research of scholars such as Peter-Paul Verbeek, Robert Rosenberger, and their collaborators. Within this tradition, technologies are understood not merely as neutral tools but as mediators that shape human perception, action, and moral judgment. In his book *Moralizing Technology*, Verbeek argues that technological artifacts can implicitly introduce moral norms into users' behavior; consequently, philosophical analysis of technology must pay close attention to the ways in which technologies mediate relations between human beings and the world. More recent

works, such as the edited volume *Postphenomenological Investigations* (Rosenberger & Verbeek, 2015), further demonstrate how this approach can be applied to the analysis of contemporary technologies ranging from medical devices to digital and algorithmic systems.

Alongside this current, the field of the ethics of technology—particularly the ethics of emerging technologies—has expanded considerably over the last two decades. Scholars such as Shannon Vallor, working within the framework of “virtue ethics in the age of technology,” have argued that new technologies—from social media to artificial intelligence—not only provide new instruments for action but also generate new patterns in the formation of human character and virtue (Vallor, 2016). Within this perspective, technology is not understood as a closed and deterministic system, but rather as a field of social and political contestation in which different values and interests can intervene in the design and application of technological systems. In recent years, in addition to these two currents, extensive debates have

emerged concerning the ethical and political implications of digital technologies and artificial intelligence. Research on topics such as algorithmic justice, data bias, and platform governance suggests that digital technologies can profoundly reshape structures of power and the distribution of opportunities within contemporary societies. In this area, the work of scholars such as Luciano Floridi in the field of information ethics, together with a growing body of studies on algorithmic fairness and responsibility in intelligent systems, has sought to develop new normative frameworks for addressing these transformations. This literature indicates that the question of technology today is increasingly intertwined with issues concerning power, data, privacy, and moral responsibility.

In relation to this body of literature, the typology proposed in the present article may be understood as an attempt to organize the major overarching positions toward modern technology. While many contemporary studies focus on the analysis of particular technologies or

specific normative questions, the framework developed here seeks to clarify how these approaches can be situated, at a more general level, within different patterns of response to technology—from radical critique to reformist approaches or forms of technological optimism. In this sense, the proposed typology is not intended to replace the existing literature, but rather to function as a conceptual tool for comparing and clarifying the relationships among these diverse approaches.

#### **Conclusion**

A comprehensive review of the above discussion allows several conclusions for further consideration:

1. **Complexity of Technological Engagement:** Considering the diverse concerns and conflicting solutions proposed by Western thinkers (as representatives of modern technology), the issue of how to engage with technology is highly complex. Its resolution requires deep reflection and extensive study of the nature of technology, its types, and its impact on humans and the

world. Therefore, it should not be regarded as a simple problem with straightforward answers.

2. **Philosophical**

**Contentiousness:** Given the breadth and depth of disagreements among these thinkers, the issue manifests as a contested philosophical problem, as the diversity and weight of their arguments suggest that even minimal consensus may be lacking.

3. **Future-oriented Urgency:**

Because this issue is tied to the future of human life, and each of the four groups believes only its solutions can mitigate upcoming threats, discussion and dialogue should continue until it is clear whether the issue is indeed fundamentally contentious.

4. **Possibility of a Fifth Solution:**

If a universal criterion can be established to reconcile differences, it may be possible to select a fifth strategy that maximally addresses the concerns of all four groups. This criterion

should embody values recognized and valued by all four groups, be as universal as possible, and consider the interests of all humanity, or even all inhabitants of the Earth. Criteria that focus solely on the interests of a specific party, religion, nation, ideology, or race—or that are purely materialistic or hedonistic—would be insufficient.

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