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## **DOES THE MODERN USAGE OF “TECHNOLOGY” DENOTE SOMETHING VERY DIFFERENT FROM WHAT τέχνη MEANT FOR THE ANCIENT GREEKS?**

### **Abstract**

This paper aims to trace the term technology back to its Greek origin, *τέχνη*. We recognize as its first meaning a mental activity based on knowledge and systematic study which aims to create a technical or a moral work. The present paper argues that the main difference between technology as seen by the classical Greek philosophers and our contemporary technology may lie in the goal that man sets for technology.

Keywords: technology; *τέχνη*; knowledge; Socrates; Plato; Aristotle; contemporary technology; logos

## **BEZEICHNET DER MODERNE GEBRAUCH VON “TECHNOLOGIE” ETWAS GANZ ANDERES ALS DAS, WAS τέχνη FÜR DIE ALTEN GRIECHEN BEDEUTETE?**

### **Zusammenfassung**

In diesem Aufsatz wird der Begriff „Technik“ bis zu seinem griechischen Ursprung, *τέχνη*, zurückverfolgt. Wir erkennen seine erste Bedeutung als eine geistige Aktivität, die auf Wissen und systematischer Erforschung beruht und auf die Schaffung eines technischen oder eines moralischen Werks abzielt. Im vorliegenden Aufsatz wird argumentiert, dass der Hauptunterschied zwischen der Technik, wie sie von den

klassischen griechischen Philosophen gesehen wurde, und unserer heutigen Technik, in dem Ziel liegen könnte, welches der Mensch für die Technik setzt.

Schlüsselwörter: Technik; τέχνη; Wissen; Sokrates; Platon; Aristoteles; zeitgenössische Technik; logos

## Introduction

The Classical Period of the Greek philosophy of Socrates, Plato, and Aristotle was a reaction to the transformation of Greek society towards a materialist tendency. It was a tendency that endangered human nature and arose under the influence of the materialist philosophers, especially the atomists and the sophists. Classical philosophers expressed dismay at the new teachings that had begun at that time to destabilize moral values and established wisdom, replacing them with uncertainty. Classical philosophers, especially Socrates, felt the necessity to resort to established values in order to face the materialist attack and the necessity of structuring moral teachings by seeking the true knowledge of the concept of man.

We may now be in great need of rereading these classical philosophers' stances in order to face another attack, that of modern technology, especially when the word's etymology goes back to ancient Greece.

Contemporary technology has, no doubt, achieved great progress for mankind, enabling man to master the world, but we cannot ignore the fact that human nature today is undergoing a crisis. In the shadow of this great technological advance, the concept of man has shrunk. The human being who was the center of the universe for Socrates has relinquished the role of attempting to understand and decipher the secrets of the universe and realize the moral value of Good. Man has lost his real existence, as the prevalent thought in modern industrial societies has turned to a technical one that puts machines over man. Man has become just a cog in a machine, just an object or a thing governed by the same mechanical rules.

## 1. Technology: Term and Concept

The word *technology*<sup>1</sup> is derived from the Greek τέχνη from the verb τέκνω which also gives τεχνάομαι and τίκτω meaning giving-birth, creating, skill,

<sup>1</sup> The word technology is derived from the Greek τεχνολογία and is composed of two roots: techne + ology (τέχνη + λόγος). *Techne* is craft or art, evoking meanings of creating

and at the same time refers to experience and ability. *Techné* is translated as either *art* or *craft*; the first is used to express aesthetic products, while the second refers to technical products. In Western European languages, the concept derives from the Latin origin *ars*, meaning *to organize* or *adjust*.

The Greek term τέχνη was originally related to the skill of a craftsman, such as a carpenter ξυλουργός, but the ancient philosophers used it as well to refer to artistic creativity. Thus, the old Greek term τέχνη is translated as “craft” or “art”, and at the same time it denotes “knowledge”. However, it is not all knowledge since there is also επιστήμη (*epistēmē*) which refers to scientific knowledge. Both Plato and Aristotle distinguished between theoretical knowledge, i.e., *epistēmē*, and practical knowledge, i.e., *technē*; the first is related to theory, while the second refers to expertise. Today, the term *technology* is associated with scientific knowledge or technical knowledge.

Knowledge, in its general sense, was seen by Greek philosophers as knowledge for its own sake. However, they also found a place for a type of scientific or technical knowledge which is devoted to utility and the purposeful production of objects through imitating nature or inventing something that has already existed in nature.

It is wrong to think that the concept of technology is identical to its products. This is a narrow view since there is a great difference between technology and its products. Tracing the term *technology* back to its Greek origin, τέχνη, we realize its first meaning as a mental activity based on knowledge and systematic study which aims at creating a technical or a moral work. Technology is not the product of this type of knowledge, that is to say, computers, mobile phones, robots, etc. It is rather the latent knowledge responsible for bringing these products into existence. It is a process in which man plays an essential part.

Technology is, thus, knowledge and a way of thinking that man uses to reach pre-set goals. In fact, technology is a means and not an end or an outcome. It follows, then, that the optimal concept of technology is the good use of scientific knowledge and intelligent application through human imagination and creativity in the spirit of the classical Greek philosophers.

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and being skillful. *Logy* is the Greek λόγος which, in both ancient and modern Greek, means displaying ideas in a systematic way in pronunciation and writing. *Logos* is also the root of the word *logic*, which came later onto the scene. At the same time, it refers to the relation between things or causality. Technology is used to refer to the technical sciences, i.e., the applied sciences. As for the common use of the word, it is the optimal intelligent use of the sciences as applied in various fields of our practical life.

The basic question here is: to what extent does the concept and goal of technology today differ from that articulated by classical Greek philosophers?

## 2. Origins of Technology in the Ancient Greek Civilization

In ancient Greek civilization, man responded to eternal life problems, love, death, divinity, and life itself with a spirit of invention and creativity. This endeavor is thus eloquently expressed in the relation of the term τέχνη to the verb τέκνω. The word technê (τέχνη) had various nuances of meaning in the ancient Greek use of it. In the *Odyssey*, τέχνη was used to express the ability to work metals skillfully in order to produce useful products. In the *Iliad*, it was related to the ability to work wood in order to build ships in the proper way.

Craftsmanship, in its technical sense, is the best translation for the word τέχνη as it was used by the ancient Greeks. It is technical knowledge as a type of knowledge directed towards producing something without confusing this knowledge with the thing itself.

It may be worth mentioning here that at the early stages of Greek philosophical thought, there was no clear distinction between art, science, and technology since the artist was also a scientist and a craftsman. The essence of art was associated, in the philosophy of Plato and Aristotle, with imitating or representing nature. Thus, *technology* was traditionally understood as *mimesis* of nature with the purpose of taming it to serve mankind. None of the Greek philosophers contributed directly to a theoretical understanding of technology, but they laid some bases that cannot be ignored.

## 3. Τέχνη According to Plato

In the 4<sup>th</sup> Century B.C., Plato stood against current ontological and epistemological trends and came up with a dual metaphysics of being: a real world and a transcendental world—a world of appearances perceived by the senses, and an ideal world perceived only by the intellect. He argued that the world of appearances is only a representation of the real world, which seeks hard to appear as the actual ontological world. Thus, the phenomenon is in a constant state of development. Plato's theory of art is the natural consequence of his philosophical theory; art or craft, for him, is a mere imitation of nature or a copy of the appearance of the real thing. He further

commented on the value of art, considering it useless and dangerous to social life.

In the *Laws*, Plato argues that when the work of art is good, it contributes to forming the character of the young in the proper manner, which means that the state has to control the quality of the works of art in order to control their effect on citizens. (*Laws*, 664a-672e)

Plato did not devise a well-defined technical theory of technology; he, nevertheless, set criteria for the knowledge associated with it and the work it produces, keeping in mind that the concept of art, or τέχνη, was wide enough to include different crafts. The artistic work was not simply painting or sculpture; it was rather everything created by man intentionally and skillfully.

Plato saw art as the ability to make something that requires skill and proper knowledge. Here, it should be said that, in his dialogues, Plato did not have a clear demarcation to separate *epistēmē* from *technē*, the former as theoretical knowledge and the latter as applied knowledge in the technical sense. (*Charm.*, 165c; *Euthyd.*, 281a) In the *Republic*, Plato distinguishes between the types of art on the basis of two factors: force and function. (*Rep.*, 346a) In *Charmides*, he associates understanding, *gnosis*, with art. (*Charm.*, 170e5-7) The artist’s skill is judged by Plato according to the extent of the artist’s understanding of the goal of his art, and, of course, his understanding of the means of realizing this goal. In the dialogue, the *Laws*, he makes a comparison between a slave doctor and a free doctor, showing how the former depends only on experience and practical knowledge alone while the latter depends as well on his theoretical knowledge. Thus, the free doctor’s means of treatment are more effective since he engages the patients with him in recognizing the nature of the disease and the right methods of healing. (*Laws*, 853a)

In *Gorgias*, Plato considers good art, medicine, a cause of Good for the body. This is like justice which realizes the Good for the psyche at the hands of the judge and the legislator. (*Grg.*, 464c) In the *Republic*, he links a governor’s skill and proper knowledge of art with his wisdom in running the state. (*Rep.*, 342e)

However, although Plato praises art which is associated with knowledge, i.e., *technē*, in many parts of his dialogues, he still sees theoretical knowledge as the true knowledge: knowledge of forms.

Plato’s view of art is an extension of his theory of forms; the world of forms is the world of true reality and origins. The ideas of that world cannot

be copied in our world, as perfection resides only in the world of forms, while our material world is biased and not ideal. Thus, when art imitates the biased reality, not the form of the world of ideas, it is twice removed from the abstract objective perfect reality, and this creates a double deception.

The philosophy of Plato has thus established the notion that the arts depend on mimesis or imitating nature. He did not care much about the arts of mimesis, considering them deceptive arts. However, he differentiated between practical useful arts and imitative useless arts, which are even dangerous. The distinguishing criterion here is knowledge and proper understanding of the nature and goal of art.

Accordingly, he sets apart two types of knowledge: true knowledge associated with the world of forms, and false knowledge associated with the world of the senses, but we have to keep in mind that Plato's thinking developed, and in the later period, we discern in his writings an implied dialectical relation between the two types of knowledge: it is a dialectic of the theoretical and the practical.

In the *Republic*, there is a division of the makers into three categories: those who use, those who produce, and those who imitate things.

In the *Sophist* (219a-219b), there is a division of the arts according to their relation to nature: natural arts and manufacturing arts, where the latter depends on the skill of manufacturing. (*Rep.*, 401a) In the same dialogue, Plato divides the arts into human and divine. (*Soph.*, 365a) However, the most important division remains that which he made between "producing" and "imitative" arts.

Plato does not define what he means by the term μιμητικές. We can only learn that from the gist of his philosophy. The artist imitates the world he perceives, which itself is an imitation of the true world; thus, he is twice removed from the true world: the work of art is an imitation of an imitation. (*Rep.*, 599d, 598b, 597e, 596e) It should be mentioned here that Plato does not use the term imitation in the same sense every time it occurs in his writing, his use being very loose. (*Laws*, 713e; *Crit.*, 107b; *Tim.*, 38c; *Phdr.*, 252d, extr.)

Art, for Plato, exerts an influence on our feelings, depriving us of the real social communication means that require rational understanding. Art moves us emotionally when it sheds light on the contradictions while exaggerating them. The artist imitates the biased reality, not perfection or the abstract form in a genuine way. This makes us believe the material facts

represented by the artist, not the truth as a whole or as an ideal that is found in the world of forms. (*Rep.*, 597e, 598b-c, 598e-599a, 602b-c, 605b-c)

#### 4. *Téchνη* According to Aristotle

In the sixth book of the *Nicomachean Ethics*, Aristotle presents three types of mental activities: *theoria*, *praxis*, and *poiesis* (*Eth. Nic.*, VI, 1139a, 5-15) —a division into the theoretical, the practical, and the productive. He refers this to the two halves of the psyche: the calculative half (*logistikon*) and the practical or knowledge-having half (*epistēmonikon*). In the same book (1139b, 15), Aristotle reviews four types of the psyche which are related to the different types of mental activity and the types of knowledge: *technê*, *phronêsis*, *sophia*, and *nous*.

Giving a detailed explanation of the virtues of each of these types, Aristotle makes the virtue of *technê*, which he considers a synonym of craft or art (1139b, 15-30), lie in *praxis*. He concludes that wisdom—the highest ranking of his virtues—is the virtue of theoretical knowledge. (1139B, 14-17)

Aristotle differentiates between *making* (*poiêton*) and acting (*praktikon*), citing the example of health, which is a final goal, or *poiêton*, as different from medicine, which is the practical activity, *praxis*, leading to health. (*Eth. Nic.*, 1094a)

Aristotle agrees with Plato that true knowledge is not concerned with the part, but with the whole, the “essence”, that which is found within the part. With skill, art can provide a small number of wholes with the help of the craftsman, creating a new part by inventing a new image.

In the *Poetics*, he argues that art is not separated from knowledge; he even asserts that *mimesis*, and accordingly art, is an activity related to human nature. Aristotle further associates the pleasure of learning with the pleasure of *mimesis*. (*Metaph.*, 1, 980°)

Unlike Plato, Aristotle defends art, arguing that realizing the final goal through the proper desire is the criterion for judging which is true and which is deceptive. (*Metaph.*, 1, 1139a, 25-30) He sees the function of art as producing things that are found in nature (imitating) or inventing them if they are not in nature (creating) through practical knowledge. (*Metaph.*, 1, 1140a, 1-20)

Through art, as Aristotle says, man acquires a certain understanding of the nature of the universe. This can only be achieved when man possesses practical knowledge, which Aristotle classifies under practical wisdom—this

type of wisdom that he, just like Plato, always considers of a lower value than that of theoretical wisdom.

In his *Physics*, he sees a similarity between art and nature based on the fact that both seek a certain goal. To give an example, he compares instances of a bird building its nest, a spider weaving its web, and tree leaves growing upward to bear fruit while the roots grow downwards to feed the branches, proving that all seek a goal. Art, as described by Aristotle, imitates the work of nature, or it completes the work of a nature incapable of perfection. (*Phys.*, II 8, 199a, 15)

## Conclusion

We can thus argue that the main difference between technology, as seen by the classical Greek philosophers, and our contemporary technology, may lie in the goal that man sets for technology. In the first case, it is ennobling human nature through creativity, or simply bringing something to existence that was not there before without man losing his status. In the second case, it is controlling nature as a whole and creating a material reality parallel to nature, as if man's goal has become imitating nature with all its details. This made the development of human civilization dependent on man's ability to literally imitate nature, going beyond that to a stage that is even more materialistic, with no room for human nature. We have, thus, grown to live within this mimesis, so much that we have lost the ability to distinguish between reality and imitation with all that dazzling advance of technology.

I will conclude my paper by going back to the Greek term: technology. The Greek language gave us both the problem and the solution in the two halves of the word. The first, *techno-*, makes man an imitator of reality, but seeking to go beyond it, he forgets his true nature and loses his humanity. The second, *-ology* (logos), enables man to deal with reality, and at the same time, and through theory, makes him "see" (from θεωρός - theōrós, "spectator"), putting his eyes always on the meaning and reality of the human being.

Finally, philosophy plays a role here, which is to raise questions about the boundaries of modern technology which has caused modifications in several fields of human endeavors—the environment, economic life, education, culture. Philosophy should also watch the effects of technology aided by one compass, which is human nature. The challenge faced by philosophy is to provide the theoretical understanding for all that and to enable human



beings to restore the human concept to its previous lost status. In other words, the only means of survival is to prevent the stripping of the word of its second half: *logos*.

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