

TEHNOLOGY FROM CRAFT TO PHILOSOPHY

VIRGIL MOLDOVAN*

Abstract. The paper presents the principal aspects regarding Technology, in our century. The purpose is to contribute to the coagulation of a specific and consolidated philosophy. The importance of interdisciplinarity is underlined. A new proper concept of *TECHNOSOPHIA* is proposed.

Man has used Technology from the beginning and we can say that Technology is as old as our species. The technological realizations from the past century are characterized by their big number, extension, appearance, sometimes disappearance in short periods of time. Technology, in its impetuous evolution, produces changes, besides the economical ones, in the global environment, in genetics, in the material ones as for example the nanomaterials, in culture, anthropology, politics, even in religion, etc. All these caused contradictory human attitudes, some of acceptance and others of rejection, sometimes essential changes, even a change in mentality. We can say the fact that an essential relation was born between the human being and Technology. An elaborate study of these aspects is necessary. The problem has serious implications of philosophical nature, like ontological, metaphysical, epistemological, axiological, praxeological, etc.

The philosophy and philosophers contribution, in the actual conditions of Technology development and especially of its impact upon the existence, impose. From an historical point of view, philosophy from its beginnings was relatively passive regarding this issue. In the past century, preoccupations of this kind started to appear and they were materialized in discussions and contradictory positions. Philosophical currents and philosophers appeared. Are very known philosophical attitudes such as those expressed by *Jacques Ellul*, *Martin Heidegger* and other philosophers and social commentators like *Herbert Marcuse*, *Bernard Gendron*, *Arnold Pacey*, *Don Ihde*, *Michel Puech*, etc., in Europe, and *Carl Mitcham*, *John Dewey*, *Mario Bunge* and others in America. Interests in the domain exist in China and Japan.

We think that the main aspects of the Technology concept correctly acknowledged, can find a finalization by the creation of an own philosophy. This way, this new philosophy can be subscribed to the actual general philosophy. Its issues and their elucidation will have an influence on the general attitudes of those who activate in the domain of Technology as well as in other domains.

In the following, we enumerate the main aspects that impose preoccupation, engendering question marks and the necessity of some answers:

We specify here that it is about the essence of Technology and not about some of its particular cases (7).

* Technical University of Cluj-Napoca, str. C. Daicoviciu nr 15, Cluj-Napoca, 400020, Romania, phone/fax 40264592055, E-mail: virmold@yahoo.com.

At first, the most controvertible topic, regards the definition of Technology. On the one hand, the word is used for intellectual discipline, analogous to biology, etc. and on the other hand, the word Technology is often used to refer to concrete objects, tools, and implements themselves or their processing. The archaeologists referring to pots, tools, or historians and anthropologists referring to the technologies of a society as the practical arts and implements themselves. An other aspect is the fact that the term Technics is also used. The two terms – Technology and Technics – have in common the Greek origin of the word *techne*, (1) which means art, artisan, artistry, to do, etc. The adding *logos* belongs to the American scientist *Bigelow*. It seems that nowadays Technology is the more accepted form. There are two ways to solve this matter, either the use of only one term, or the use of both of them but specifying the difference. We consider that the term Technics becomes as a subsystem of Technology. We appreciate also that in this problem, linguistic specialists should be consulted. Therefore, this aspect implies interdisciplinarity.

History can offer substantial arguments in order to find some appreciations regarding the evolution of human preoccupations, especially in the domain synthesised by the Greek term *techne* and of its influence, during history, upon the social development, human civilization, culture, etc. We believe that we are not making a mistake by saying, that we can anticipate one of the fundamental conclusions namely, that Technology has a primary character in the appearance and continuity of the human being.

Generally speaking, Technology constitutes a system (4) having as principal subsystems, particular technologies, in which specific theories apply. Technology itself can be considered as a subsystem of a superior one, namely the social system, where it interferes with other subsystems (culture, economy, etc.). Engineering, (5) is that which offers the possibility to put across ideas, that are otherwise necessary as starting point of Technology also. “Engineering can contribute to the conceptual and concretization clarifications”, (*C. Mitcham*), aiming at different types of technologies. Engineering has important contributions to the development of Technology and it is obvious that it should be studied under its fundamental aspects, separately but related to the development of Technology. This makes us to consider engineering as a science with its own philosophy.

As it was already mentioned, interdisciplinarity is being imposed. This one together with multidisciplinary and transdisciplinary offer the possibility to establish relationships, as for example between Technology and Science in general and its forms of expression. The problem regards the involvement of Science in Technology. Is Technology (whether a study or a set of artifacts) simply applied to Science or even that both identify? There are other aspects over the essential nature of Technology for exemple whether it must be embodied somehow, perhaps in metal or other materials or whether it can be entirely conceptual as in the important Arabic invention of the zero, essential in mathematics and not only. Other exemple is the question whether Technology can be said to exist outside the human context,

as in the sometimes elaborate constructions like beavers and many other animals, or must it, by definition, be the product of human mind. *Aristotle* was interested in this matter, the idea being revived by other thinkers. This raises broader issue whether Technology is ever a natural phenomenon or is necessarily artificial. One aspect that needs clarification regards the artifacts and their relationship with natural things. From the ontological point of view, the relationship between man and its artifacts is being analysed, having in view the fact that these prevail, producing with effects, in various domains, such as economic, social, cultural, anthropology or politics, etc.

Other problem is the fact that both, Technology and Science, can have, as starting points the same ideas, that developed will allow different degrees of independence and interdependence between them. There are several points of view including that of the author, that Technology, itself, is a science, having general characteristics, similar to the other particular sciences, already consolidated.

A very topical and much debated issue, about the implications of Technology is about its ethical aspects even aesthetical too (6).

In the sense of what we presented so far, we have proposed (7) a new proper concept adequate with the denomination of *TECHNOSOPHIA*, that we believe it evidentiates the essence of these preoccupations. There are still many issues to be considered in relation to Technology. We enumerate some of them that belongs next to this concept, like: creation and risk, influence upon civilization, technocratic concepts, democratization, nature as inspiration, biodiversity globalism, sustainable development and in the protection of the environment, consumerism, politics, etc. Technology is a power and what kind of power or has a neutral character?

A firm attitude is necessary regarding some conceptions such as endism, the antagonism between the human universe and the technological one, the decline of the human species, all related to the impetuous development of Technology and caused by it.

Regarding the above considerations, the need of a technological education especially in the condition of the knowledge society, is necessary. In this sense an essential role resides with the school. This fact was understood in many countries where, in the curricula, Technology was introduced as speciality study. The teachers and educators should have a philosophical background. By this way *TECHNOSOPHIA* permits the formation of a general idea of the world which will be helpful in the instruction and education of their disciples in the spirit of humanism with technological specifics. Therefore the effects of their activity, displayed by the modification of the Conscience-Technology relation, will grow for the former.

According to the above mentioned, we point out, that the role of culture cannot be neglected, and especially the relation between the general and the technological culture. This is in agreement with the *UNESCO* recommendation (in the '60s of the 20th century) of the enlargement of the general culture concept to the technological one, appreciated as being the most recent and important component.

Worldwide the preoccupations regarding the philosophical aspects of Technology are various due to its impetuous development. Such preoccupations are materialized by scientific meetings dedicated to the problem, by publishing works of some personalities from the philosophical and scientific domain, or by creating some associations and institutions that usually have their own publications. Some universities are named Technological Universities having the adequate curricula. Likewise the high school education has in its curricula the study of technology from which the philosophical aspects are more uncommon.

In our country the preoccupation regarding the philosophical aspects of Technology still has a sporadic and less organized character. There are the known studies of the acad. *M. Drăgănescu* published in the Academy journals (3), of the professors *Laura Pană*, *Șt. Iancu*, and others. Scientific exposures with aspects of Technology philosophy were made at the CRIFST section in Cluj-Napoca or at the annual sessions of the “Professor Dorin Pavel” Multidisciplinary National Conference with International Participation organized in Sebeș (8), (9). Recently the international symposium on Engineering Philosophy took place, organized by the professor *V. Guliciuc*, at the “Ștefan cel Mare” University in Suceava.

We believe that philosophy of Technology as *TECHNOSOPHIA* can be dealt with in an organized manner by introducing it as distinct section of CRIFST that as a matter of fact it contains in its own denomination. The “Noesis” journal can publish the works elaborated in this domain either by extending the History of Science and Technique part or better by creating a separate one. Having in view the preoccupations in this field in Cluj-Napoca, the activity of this section could be localized here, the interest in this problem being stimulated. We specify that in the sense of the above mentioned CRIFST Cluj-Napoca leadership expresses its agreement.

REFERENCES

1. Biemel, W., 1996, *Spiritual Masters: Heidegger* (in Romanian), pp. 105–167 Editura Humanitas, ISBN 973–31–2280–7, Bucuresti.
2. Bunge, M., 1996, *Science and Philosophy* (in Romanian), pp. 370–401, Editura Politică, București.
3. Drăgănescu, M., 1996, *Technology and Philosophy* (in French), <http://www.racai.ro/books/drăgănescu/chap.10.html>, București.
4. Hubka, V., 1987, *Theory of Technical Systems* (in Russian), pp. 60–177, Mir, Moskva.
5. Mitcham, C., 1994, *Thinking through Technology*, pp. 19–38, University of Chicago Press, Chicago.
6. Moldovan, V., 2008, *The Humanism of the Technological Systems*, pp. 150–157, NOESIS, XXXIII, Editura Academiei Române, București.
7. Moldovan, V., 2008., *The Paradigms of Technology*, pp. 29–3, Acta Technica Napocensis, nr. 51, vol. III, Cluj-Napoca.
8. Moldovan V., 2008, *Philosophical Implications in Technology* (in Romanian), pp. 37–40, A VIII-a Conferință Națională multidisciplinară-cu participare internațională, “Profesorul Dorin Pavel”, Sebeș.
9. Moldovan V., Filip E., *Present Tendency in Technological Creation* (in Romanian), pp. 33–38, A IX-a Conferința Națională multidisciplinară-cu participare internațională, “Profesorul Dorin Pavel”, Sebeș.