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ONTOLOGICAL AND SCIENTIFIC-THEORETICAL CHALLENGES OF CONTEMPORARY TECHNOLOGY. A CRTICAL PERSPECTIVE

Contents: Introduction; 1. The essence of technology from phenomenological point of view; 2. Being and artificial intelligence in technical mode; 3. The need for concepts, theories and science in technology; 4. Critical perspective in dealing with the technology; 5. Outlook.

Introduction

If one wants to correctly understand the validity and functional affiliation of technology to the world of human beings today, one should keep in mind the starting point of Sartre´s philosophy. It is a matter of mutual reference and the essential irreconcilability of an exercise of freedom and consciousness *(„for-itself")* set in pure ideality and the sluggish, dull, opaque simple existence of the material *(„in-itself").* The material („in-itself") does not require consciousness („for-itself"), but vice versa. Thus, on the one hand, the atheistically influenced metaphysical orientation of Sartre´s thinking becomes apparent: the contingent in-itself should be an absolute being, whereby being and freedom or consciousness coincide.[1] On the other hand, Sartre tries to establish an ontological solution in terms of scientific theory, which moves between two classical positions (i.e. realism and idealism) and wants to bring them together. This results in an alternative that is to be classified between Husserl and Heidegger. It is important to mediate Husserl´s concept of consciousness with Heidegger´s theory of existence.

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[1] Cf. J.P. Sartre, *Das Sein und das Nichts. Versuch einer phänomenologischen Ontologie,* Reinbek 1991, p. 1f; see too E. Coreth i.a., *Philosophie des 20. Jahrhunderts*, Stuttgart-Berlin-Köln ²1993, p. 51f.

In this essay, I want to show that this alternative constellation provides the necessary framework for building the foundations of current technology. This makes it clear that technology as such must be thought of with a view to consciousness and existence. This is what makes it possible to influence the lives of human subjects for a specific purpose. In the first step, I will pursue the question of the nature of technology by taking up a semantic and a phenomenological perspective. Then I will formulate an ontological approach, the goal of which is to achieve a viable balance between being and the artificial intelligence. The present analysis is then given a scientific-theoretical orientation in order to justify the necessity of terms and theories in technology. In the last step, a critical perspective in dealing with technology should be worked out, especially with a view to Edmund Husserl, Martin Heidegger and Roman Ingarden.

1. The essence of technology from a phenomenological point of view

Needless to say, technology and the world are in a cooperative relationship of belonging. On the one hand, technology affects the world and shapes its structures in a goal-oriented manner. On the other hand, the world represents a basis on which technology is only possible. Both entities, i.e. the world and technology, benefit from each other factually and methodically. Technology exists in the world in a well thought-out manner, e.g. as manual technology or as machine technology. While the former has long been limited to the use of mere tools and work machines, the latter includes the use of machines capable of processing information and controlling manufacturing processes. In the cognitive science debate, the term „cybernetics" is used to describe the specific control that occurs in technology (I will discuss this in more detail later). In other words: Technology is about the design of things that can be perceived by the senses in the service of a need or an idea, i.e. the ability to do something useful and beautiful. In contrast to art, which specifically turns to the beautiful in the form of works of art, technology, on the other hand, *wants to establish the useful anthropologically*.

The anthropological establishment of the useful opens up the space in which we can search for the essence of technology, starting from the concept of *nature.* So, we can also talk about the *philosophy of technology*. This philosophy not only wants to prove the origin and the conditions of tech-

nology in human nature and its needs, but also examine the diverse repercussions of technology on people and the concrete shaping of human life in the individual and in the community.[2] If you talk about *nature in a broader sense*, i.e. if you understand nature as the essence of every being as it comes from its origin, then every being has its nature, and therefore also technology that occurs in different forms. Nature is often not distinguished from essence. In the *narrower sense*, on the other hand, nature adds a dynamic element to the essence. This moment is named as the principle of the development of beings, as the inner reason of its working and suffering[3]. From a philosophical point of view, it is important to clarify the concept of „essence" because it ontologically and semantically permeates technology and its domains. Essence as such (German: Sosein) forms the opposite pole to existence (German: Dasein) and is then called being (German: Wesenheit). While the existence answers the question „*Is there a being?*", the essence gives the answer to the question „*What is a being?*" The essence thus determines the what of a being, i.e. shows what a thing is. In other words, when we talk about essence, we basically want to infer the whatness of a thing. The same applies when we talk about the nature of technology, we want to open up the *whatness of technology*. From a phenomenological point of view, we can say: The what is always general and at the same time embodied in an individual, e.g. table is thing and tableness is essence. An individual object is not only an individual unique object in general, but as something so and so constituted in itself, it also has its own character, i.e. its inventory of essential predicables that must belong to it as a being, how it is in itself, so that it other secondary accidental determinations may accrue. However, not every determinateness is constitutive for a thing in the same sense. For example: An object can be a table if it is rectangular, round, elliptical, etc. In addition, this object can be a table if it is made of wood, stone, etc. From this follows the following: *That which constitutes the essence of a thing must prove to be identical in all changes of the thing in question.*[4]

If we now want to add an ontological perspective to our reflection on

[2] Cf. W. Brugger, *"Article: Technik"*, in: Idem (ed.), *Philosophisches Wörterbuch*, Freiburg-Basel-Wien [22]1996, p. 393f.

[3] Cf. J. Lotz, *"Article: Natur"*, in: W. Brugger (ed.), *Philosophisches Wörterbuch,* Freiburg-Basel-Wien [22]1996, p. 256.

[4] Cf. K. Rynkiewicz, *Zwischen Realismus und Idealismus. Ingardens Überwindung des transzendentalen Idealismus Husserls*, Frankfurt-Paris-Lancaster-New Brunswick 2008, p. 62f.

the problem of essence, we can make the following differentiation with a view to Ingarden: (1) There are *pure essences* to which, in principle, no realizations can correspond (e.g. geometric objects). These beings only exist insofar as they can be grasped in a unified sense of perception; (2) There are *essences in realization,* i.e. realization is conditioned by the essence of concrete being. These beings exist insofar as they fulfil the conditions prescribed by the nature of concrete being; and (3) Finally there are *relative essences* which must exist if other definite essences exist (e.g. the essence of the Son necessarily begins to exist with the moment of procreation by the Father, to which the essence of the Father belongs).[5]

Husserl´s „eidetic phenomenology", the methodical core of which is „eidetic reduction", pleads for the essence to appear in a special act of consciousness, namely as *„the intuition of essences"* (German: „Wesensschau"). In the perception of essence, the contingency and individuality of what is available to us in empirical experience, i.e. the *individuality* of the *contingent* empirical thing, is dispensed with. Because it is a part of the empirical individual thing that it could also be different, that it does not have to be like this, and that it could also be in a different space and in a different time than it actually is. In terms of the shaped by technology, it means: It doesn´t have to be a world like the one we´re currently living in, and there doesn´t have to be a technology like the one that designs things that can be perceived by the senses in the service of a need or an idea.[6]

Now, we can try to determine the essence of technology on the worked out basis. So, what can we say about the nature of technology? First of all, the thesis has to be considered that technology can be assigned to the realm of beings in *two respects*. On the one hand, the technology can be understood as a kind of graphic result of manufacturing process geared towards utility. This would include various empirical technical items that aim to cover the realm of the useful. But here we could only grasp the *essence of a certain empirically existing object*, e.g., a table. On the other hand, technology – and this is crucial here – can be understood as *a specific process of consciousness based on intentionality*, which wants to open up and establish what is useful as such in the anthropological framework. In this case, one

[5] Cf. R. Ingarden, *Schriften zur Phänomenologie Edmund Husserls,* ed. by Włodzimierz Galewicz, in: Idem, *Gesammelte Werke,* Vol. V, Tübingen 1998, p. 13f.

[6] Cf. E. Husserl, *Ideen zu einer reinen Phänomenologie und phänomenologischen Philosophie. Erstes Buch: Allgemeine Einführung in die reine Phänomenologie,* ed. by Karl Schumann, in: Idem, *Husserliana: Gesammelte Werke***,** Vol. III/1, Den Haag 1976, §3f.

could think of the nature of technology as intentionality in a complex process: designing technology, experiencing it, evaluating it, etc. It becomes clear that the intentionality in the field of technology is already evident in *the mode of imagination*. Because every intentional experience is constituted on the basis of an idea: So, if I wish to create something useful that should fulfil a need, then at the same time I have a somehow specific idea of this something, e.g., an idea of artificial intelligence. Every possible act and object, therefore, has an associated, positing and non-positing idea: the idea of the house corresponds to the house, the idea of the car to the car, etc.[7] In addition, one can add here: possible perception, retention, recollection, anticipation, signification, analogizing illustration are types of intentionality that belong to every possible object and process of technology. Also included is the synthetic connection of these types of intentionality.[8]

It should be noted that the achievement of intentionality not only requires being and everything that is, but also artificial intelligence.

2. Being and artificial intelligence in technical mode

The phenomenological conception of the whatness of technology as intentionality now allows us to work out an ontological perspective in which technology can continue to be analyzed systematically. If we want to classify the current technology ontologically, we can claim that there is a fundamental balance between being or existence and artificial intelligence. This means that, on the one hand, all technology necessarily belongs to the realm of existence, on the other hand the special design of current technology is reflected in artificial intelligence. This concept will be taken up briefly here after we have carried out an introductory analysis of being with regard to Heidegger.

Heidegger pleads for the ontological priority of the question of being, the repetition of which is necessary. Being is always the being of a being (German: „das Sein eines Seinden").[9] In this context, the following ontological approaches can be distinguished: First, Heidegger proceeds from the difference between being and beings (German: „dem Sein und dem

[7] Cf. E. Husserl, *V. (Fünfte) Logische Untersuchung,* Hamburg [2]1988, §39.

[8] Cf. E. Husserl, *Cartesianische Meditationen und Pariser Vorträge. Eine Einleitung in die Phänomenologie,* ed. by Stephan Strasser, in: Idem, *Husserliana: Gesammelte Werke,* Vol. I, Den Haag 1973, §21.

[9] Cf. M. Heidegger, *Sein und Zeit,* Tübingen [18]2001, §3.

Seienden"), based on the foundation of Western metaphysics. Metaphysics presupposes this difference without, however, considering it. Secondly, Heidegger turns against Husserl´s procedure of the *epoché* (German: „Epoché"; actually, Greek: "ἐποχή) and thus against his absolute privileging of transcendental subjectivity. Being, therefore, means that dimension which encompasses both the entire sphere of constitutive subjectivity and the sphere of the constituted world. Thirdly, according to Heidegger, it is necessary to carry out a *„turn"* (German: „Kehre"), i.e., being cannot be articulated in terms of existence, but conversely, existence can only be interpreted in terms of being. Fourth, Heidegger finally elucidates the result of this turning point as the „truth of being" by interpreting *„being as event"* (German: „Sein als Ereignis") and *„being as happened"* (German: „Seiendes als Ereignetes").[10]

With Heidegger, then, we can certainly determine the ontological status of contemporary technology. It is about the *theoretical framework „event-happened"* (German: „Ereignis-Ereignetes"). In this framework, technology gains its ontological justification through concepts and theories that show us what occurs in technology and what factors condition this constitutive process. A classic example could be the term „artificial intelligence" whose epistemic-ontological claims are measured in the context of „artificial consciousness". The question is to what extent technology as artificial intelligence can enter the ontological region of artificial consciousness. Let´s now try to sketch a cognitive science boundary between these two entities, starting from the *„virtual world"*.

Due to the developments in the last decades, the border to the field of artificial consciousness has been crossed. This opened up access to a virtual world that differs fundamentally from the real world of physical objects. This difference is based, on the one hand, on the form of creation of the virtual world and its existence, on the other hand, on defining *the realm of possibility* in which the creativity of the human mind is realized. The virtual world referred to here is made possible by technology and is considered as an indirect product of the culture of the human spirit. This means that the virtual world is neither „given" to the spirit by anyone (or passed on, such as the natural world) nor is it created directly by the spirit in the sense of an original intentionality, such as the world of its thoughts, i.e., the world of the mental. When creating the virtual world, certain technical

[10] Cf. L. Bruno Puntel, *Sein und Gott,* Tübingen 2010, p. 80f.

tools are used in a targeted manner, in particular various communication systems such as computers, the internet, television, radio, etc. The existence of the virtual world is, therefore, primarily linked to the *technically produced framework*: If there were no corresponding technology, there would also be no virtual simulated world. But if there is a virtual world, then, in principle, everything can be imagined and technically realized in it: We can encounter people flying on brooms, dinosaurs running, cats talking, etc. It is possible because the virtual world does not have to be fixed by the conventions of the real world, but is oriented towards the imaginative laws of the human mind. *And, actually, everything is imaginable!* In the case of the virtual world, then, the realm of the possible is defined as follows: „The possible has no limits"[11]. From a phenomenological point of view, we can also add that *the possible is essentially determined by the technical, or the essence of the virtual world by the essence of technology.*

The virtual world also represents an area where we can look for a technologically influenced interface between artificial intelligence and artificial consciousness. *Artificial intelligence* is – broadly speaking – the ability of machines to carry out functional (logical, mathematical, grammatical, translational, etc.) operations for which they are programmed. In this sense, the computer calculates just like the old calculating machine, only in far more complex manner. In doing so, we use a concept of intelligence, which, however, must be distinguished from philosophical concepts such as intellect, reason, and so on. If we now ask about the possibility of *artificial consciousness*, we want to know whether the complexity of machine-like artifacts can reach a level at which these artifacts develop *mental states (qualia).* The answer to this question always depends on the consciousness-philosophical point of view: (1) If we tend towards naturalistic reductionism, we physically reduce the qualia to the material brain processes. As a result, we have no particular problem attributing consciousness and mind to highly complex artificial systematic networks, because both terms are so reduced that their intuitive content is eliminated; (2) If, on the other hand, we stick to the independent irreducible meaning of these terms, we will consider artificial consciousness to be impossible, because conscious-spiritual experience lies on a fundamentally different level than all mechanical processes, no matter how complex, feedback or networked they may be.[12]

[11] Cf. K. Rynkiewicz, *Zur Begründung der „Kultur des Geistes". Eine Analyse zur Ontologie des Bewusstseins*, Kraków 2010, p. 291f.

[12] Cf. K. Rynkiewicz, *Zur Begründung der „Kultur des Geistes*, p. 303. See too A. Anzenba-

It should be obvious that being-intelligent does not automatically mean being-conscious. When an intelligent machine (e.g., computer) „thinks" by running a program, it cannot know or feel anything like a human knows and feels anything. *In short, this machine lacks the qualia, and, therefore, the consciousness.* In other words: Since technical devices have no mental states, they only have artificial intelligence, not artificial consciousness. With John Searle we can distinguish between *weak* and *strong artificial intelligence*. While the former aims to explore the mind using computer simulations without attempting to create it, the latter claims that a properly programmed computer not only simulates the mind, but literally has it.[13] *This also raises the Kantian question as to whether artificial consciousness is absolutely possible on the basis of current technology.*

As is well known, Kant asked whether metaphysics as a science is possible. The metaphysics criticized by Kant is a system of a priori propositions about reality, i.e. a system of synthetic a priori statements. It deals with what lies beyond sensory experience, i.e. with the transcendent objects (i.e. the existence of God, the immortality of the soul, and human freedom). Then Kant asserts that metaphysics as a science is not possible in this form. *But it is possible as a transcendental philosophy, and, therefore, as a system of principles according to which our cognitive apparatus works.* What is meant are the principles of pure perception (space, time) and the principles of pure reason (categories). The task of metaphysics as transcendental philosophy is thus to turn to the knowing subject itself in order to examine the a priori structures that underlie knowing and are themselves not sensory.[14] If we now want to ask *whether artificial consciousness can pass the „Kantian test", we unfortunately have to say no.* Since the artificial consciousness is not considered as a product of nature, but as that of technical culture, not all processes can be explained transcendentally. Today, (still?) there is no artificial consciousness that would be absolutely capable of going beyond the technical framework that is determined by concrete processes in the process of adapting to existing conditions. In other words: Today we do not yet have an artificial consciousness that can qualitatively and unrestrictedly absorb new conceptual categories on its own. In this respect, we could only talk about „artificial consciousness in the broader sense", which can at best be linked to cybernetic functions. This would obviously cover regulation,

cher, *Einführung in die Philosophie***,** Freiburg-Basel-Wien [8]2002, p. 159f.

[13] Cf. J. Searle, *Geist,* Frankfurt am Main 2006, pp. 75, 98f.

[14] Cf. I. Kant, *Kritik der reinen Vernunft,* Riga [2]1787, p. XVIIIf.

control, and message transmission not only conceptually and theoretically in living beings, but also in machines.[15]

3. The need for concepts, theories and science in technology

Even if technology contributes significantly to the emergence of new ontological areas (e.g. the virtual world) through its intentionally conditioned achievements, it is not yet able to fulfil the fundamental phenomenological-transcendental expectations of human subjects with the available concepts and theories. While we do not know today what the future will bring us in this regard, *we must recognize the need for concepts, theories and science* in order for technology to be able to fulfil its claims of being useful. This means that an epistemological perspective of technology must also be taken into account.

The epistemic coexistence between theory and knowledge can be determined through the epistemological approach. This is important for any kind of technology. Because technology cannot ensure its performance in the "present-past-future" mode without concepts, theories, and knowledge. Knowledge based on technology must always be systematized with the help of conceptual theories. This happens methodically within the framework of science or the theory of science.

Aristotle begins his *Metaphysics* with the sentence: „All human beings naturally strive for knowledge".[16] In the „*Posterior Analytics*" he asserts that the object of knowledge must be objective.[17] However, objectivity of knowledge is essential for any human progress in technology. The technical knowledge must be scientifically processed and passed on with the help of terms and theories. That is why science must also be recognized. Fichte speaks here of the „science of knowledge" (German: „Wissenschaftslehre"), which has to establish the principles of all sciences, including *technical sciences.* Moreover, this teaching has to establish itself from its first principle[18]. Fichte´s project continues to be discussed in the *philosophy of science* today. Today´s philosophy of science is not concerned with the content of sciences, *but with the problem of their systematization.* This also affects all technical sciences whose

[15] Cf. K. Rynkiewicz, *Zur Begründung der „Kultur des Geistes"*, pp. 302f, 319f.

[16] Cf. Aristotle, *Metaphysics,* 980a21.

[17] Cf. Aristotle, *Posterior Analytics*, book 1, chapter 2.

[18] Cf. J. G. Fichte, *Werke 1791-1794,* in: Idem, *Gesamtausgabe der Bayerischen Akademie der Wissenschaften,* Band I/1, ed. by Reinhard Lauth/Hans Jacob, Stuttgart 1964, p. 47f.

knowledge has to be systematized. Otherwise their practical realization is unthinkable. Then it must be emphasized that technology as such covers an area in which technical knowledge can be verified or falsified. A methodologically successful systematization can then eliminate scientific chaos. It also becomes clear that every technology needs a *theoretical framework* that has to be formed by conceptual theories, sciences and philosophy of science as fundamental entities. But how can this happen?

First, technology needs various well-founded theories for the development of technical systems. It is true that every theory is the form in which reflection can be organized when it is freed from the constraints of everyday practice in order to then acquire a professional and differentiated character. Theory therefore focuses on itself, develops its own structures and criteria and distances itself from everyday thinking, talking, and doing. A theory also requires clear concepts. That is why Heidegger talks about understanding and interpretation in his work *„Being and Time".* All interpretation is the business of science, in which things of the world are conceptualized. Heidegger emphasizes the relevance of the concepts that arise when dealing with what is available in the world (table, door, car, etc.). The result of understanding is then characterized by *„disclosure"* (German: „Erschlossenheit") and *„accessibility"* (German: „Zugänglichkeit")[19]. Finally, Heidegger asserts that science cannot think, but rather only makes thinking hermeneutically possible. If science as such considered itself, as is the case with epistemic subjects, then it would have to interrupt its research endeavors. But it is not allowed to do that.[20] Technology would also logically suffer from this, because it cannot exist without constant further research.

In doing so, we have further refined the theoretical framework for considering technology. The result is that technology cannot think, but is dependent on thinking. With Ludwig Wittgenstein we can say *that pure thinking shows itself in technology, based on science*.[21] It follows that technology absolutely needs good science in order to be able to substantiate complex fundamental theories efficiently. *But science is a systematically ordered structure of theories.* However, a theory enables us to formulate scientific connections by methodically bringing together different systems and structures that tech-

[19] Cf. M. Heidegger, *Sein und Zeit*, §§32, 149.

[20] Cf. M. Heidegger, *Was heißt Denken?* Tübingen 1954, p. 4.

[21] Cf. L. Wittgenstein, *Tractatus logico-philosophicus,* in: Idem, *Werkausgabe in 8 Bänden,* Vol. 1, Frankfurt am Main 1984, 4.1212.

nology cannot do without. Donald Davidson, for example, claims that the task of a theory is to relate the known truth conditions of each sentence to the words in the sentence that also appear in other sentences and to which the same roles can be assigned in other sentences.[22] This is also reflected in all current technical processes: (1) data are processed; (2) hypotheses are formed; (3) approximation apparatus is used; and (4) justification is sought.[23] In this context, it would make sense to paradigmatically bring Husserl´s thesis about „*phenomenology as a strict science*" into play. According to Husserl, the safe course of science that Kant had considered necessary for philosophy, had not been achieved. That is why philosophy as transcendental world science must be taken in a completely different sense than profane sciences; it should not only justify their knowledge in a different and more profound way than can be done with the resources of sciences, but it also has to give itself a justification and to justify it critically as self-justification. Only in this way can philosophy be regarded as a guarantor for ultimate knowledge of absolute subjectivity, in which lies the source of all objectivity, i.e. both the source of objects of all kinds of experiences of consciousness and all knowledge related to these objects, hence the source of all sciences. For Husserl, science means above all a constant beginning at the origins of all philosophizing, i.e. a suspension of immediate intuition, which provides the ultimate meaning of all original concepts and all principles and thus creates the foundation for philosophical thinking in general. By introducing „philosophy as a strict science", Husserl intends to establish a firm footing in philosophy. Formulated epistemologically, he is concerned with achieving a knowledge in philosophy that can in no way be doubted and is, therefore, „absolute" in its validity and certainty.[24]

Husserl´s ideal of „philosophy as a strict science" also affects the formulation of epistemic claims of contemporary technology. It is about various *self-control processes* that represent the core of artificial intelligence and may also represent the core of artificial consciousness. But the nature of every intelligence and every consciousness includes the internal ability to automatically justify the pursued epistemic goals. This means that artificial intelligence and artificial consciousness – as two main pillars of current

[22] Cf. D. Davidson, *Wahrheit und Bedeutung*, in: Idem, *Wahrheit und Interpretation,* Frankfurt am Main 1986, p. 50f.

[23] Cf. K. Rynkiewicz, *Die epistemische Koexistenz von Wissen und Theorie. Zur Wissenschaftstheorie im Zeitalter postmoderner Erwartungen*, Hamburg 2016, p. 100f.

[24] Cf. K. Rynkiewicz, *Zwischen Realismus und Idealismus*, p. 47f.

and future technology – should cover the epistemic goals in such a way that the answer to the *why question* is always given. With regard to René Descartes, we can say here that clarity and distinctness are always to be seen as necessary criteria of knowledge[25]. In order to establish this constellation epistemically, today´s technology requires systematized knowledge, which, however, can only be guaranteed by the theory of science. The philosophy of science deals with the problem of systematizing the knowledge that is gained theoretically by the sciences and practically implemented in technology. From this it follows that technology is dependent on epistemic cooperation with the theory of science. Since the philosophy of science is not concerned with the content of the sciences, but rather with the problem of their systematization, it asks about the how of knowledge and ultimately about the *how of technology.* Thus, there are two perspectives that are fundamental to technology, which we can explain somewhat with Immanuel Kant.

After Kant had determined in the first part of the *„Transcendental Deduction"* the range of the indispensability of the pure intellectual concepts for all objective knowledge, he sets out the limit of their use in the second part. The limit reads: *There is no use of the categories beyond the objects of possible experience. Categories can only meaningfully be related to items of experience. Categories are completely empty regardless of experience.* According to Kant, objects of experience are given to us in empirical intuition. The cognition a priori of mathematics is – strictly speaking – no cognition, because in the pure intuition only the form of the objects is given, not their empirical, material content, i.e., not the sensations that an object triggers in the cognitive subject and through which it only becomes an object of experience. Real knowledge is empirical knowledge, i.e., knowledge that relates to empirical perception. Mathematics can, therefore, only be regarded as knowledge insofar as it is applied to the empirically given objects; taken by itself, however, it lacks the material of perception. The consequence of this is that mathematics is only knowledge of the form.[26] For Kant, there is a clear constellation: Only when concepts are related to experience does knowledge acquire objective reality. There is no epistemological use of the term independent of experience. Without experience no object would be given to us, and without understanding none could be

[25] Cf. R. Descartes, *Prinzipien der Philosophie. Bemerkungen über ein gewisses Programm,* trans. and ed. by Artur Buchenau, Hamburg 1965, p. 45.

[26] Cf. I. Kant, *Kritik der reinen Vernunft*, 147f.

thought. This is how Kant writes his famous sentence: *„Thoughts without content are empty, perceptions without concepts are blind".*[27]

When Kant claims that all knowledge requires experience as well as pure intuition and a priori concepts of the understanding, he takes a middle position between rationalism and empiricism, or he „overcomes" these two positions. Kant agrees with empiricism that human knowledge is radically dependent on experience in the sense that all knowledge necessarily begins with it. However, not all knowledge comes from experience. For there are, at the same time, a priori forms of understanding and of sensibility to which empirical intuitions are subjected. The scientific knowledge that is fundamental to technology is therefore only given if experience with necessary structures comes together before all experience. These two entities, in which both empirical and rationalistic content appear, contribute to the fact that not only the philosophy of science can pursue its task of systematization, but that technology can also come about in various forms. *There is no technology without scientific basis, and there is no modern science without technical claims.* And philosophy as a universal science can and must show today on the methodical-critical path how technical unity, efficient globalization, rational criticism and humane success are to be thought of together. The „network of paradigms" model of philosophy of science plays a crucial role in this, because it inherently remains open to diverse fundamental and humane research programs.[28]

4. Critical perspective in dealing with the technology

If we want to ask the scientific-theoretical question about the how of technology, we must first have answered *what technology as such has to consider.* Wittgenstein writes in his *„Philosophical Investigations"* that everything fits into its own form. As an example, he brings the black spot and looks at it in its white surroundings. At the end of this passage it says: „Each color spot fits exactly into its surroundings".[29]

So, we can use this assertion of Wittgenstein´s if we want to plausibly describe the nature of technology in today´s world. So, first of all, we can say *that every technology has to fit into its environment.* It can then be guar-

[27] I. Kant, *Kritik der reinen Vernunft*, 75.

[28] Cf. K. Rynkiewicz, *Die Koexistenz von Wissen und Theorie*, pp. 216f, 298f.

[29] Cf. L. Wittgenstein, *Philosophische Untersuchungen*, in: Idem, *Werkausgabe in 8 Bänden,* Vol. I, Frankfurt am Main 1984, 216.

anteed that basic human expectations and demands can be brought together fairly. Philosophy would have a lot to say about it. Here I only briefly take up three entities paradigmatically, which every technology has to take into account: the *lifeworld, care* and *responsibility.*

Above all, Husserl emphasizes the term „lifeworld" in his writing *„The Crisis of European Sciences and Transcendental Phenomenology".* Generally speaking, this is about the attitude of human subjects to the existing reality, which should always be understood in a pre-scientific and scientific manner. In other words, if we want to understand the real world properly, we must always consider a pre-scientific and a scientific perspective. Any attempt to separate these perspectives leads to an epistemic and an ontological crisis. Husserl´s demand is obviously of Kantian origin and, therefore, encompasses the whole of reality, including tradition, norms and the applicable values. This results in at last the following epistemic-ontological warning for technology: *Technology must take into account the whole of reality, i.e., the pre-scientific und the scientific.* Although modern technology is scientifically based, it must not be forgotten that it is also in the service of man as such, who cannot achieve his fundamental goals without a pre-scientific perspective. Technology must, therefore, make this easier for him and not hinder him.[30]

The term „care", on the other hand, was coined by Heidegger in his work *„Being and Time".* Thus, he conceives the being of existence (German: Sein des Daseins) as care. In order to determine the goals pursued by technology, it is important that care and responsibility are closely linked. Responsibility can be subjective and intersubjective. The intersubjective configuration of responsibility is particularly relevant for determining the ontological perspective of care. Responsibility is usually perceived as a retrospective entity. Nevertheless, it also has a prospective character at the same time, *namely as an actively shaping force.* As this force, responsibility shows itself as care and comprehensively founds the lifeworld of human subjects. It can also be seen ontologically that people are in relationships of mutual care. Even when they worry about themselves, they always worry about other people as well, but also about things, technical developments, plans, living conditions, etc. As already mentioned, Heidegger speaks of *care as the structural whole of existence.* He does not mean inten-

[30] Cf. E. Husserl, *Die Krisis der europäischen Wissenschaften und die transzendentale Phänomenologie. Eine Einleitung in die transzendentale Philosophie,* ed. by Walter Biemel, in: Idem, *Husserliana: Gesammelte Werke,* Vol. VI, Den Haag 1976, §142f.

tional actions, nor mental states, but *„being-in-the-world"* (German: das „In-der-Welt-sein"). That is, caring is thought of ontologically and intersubjectively. Heidegger calls the ontological relationship to things *„caring" (as [German] „Besorgen"),* the relationship to the other people *„caring" (as [German] „Fürsorge").* Heidegger thus understands care as temporal, prospective and as condition of existence and free action. Care is therefore to be understood as *„being ahead of oneself"* (German: „vor-sich-weg-sein") and is considered an existential-ontological condition of the possibility of being free for actual existential possibilities.[31]

In Heidegger´s language we can then grasp technology ontologically. Since technology relates to the people and things and influences their ontological structures in each case, *its potential enhances both caring as „Fürsorge" and caring as „Besorgen".* In other words, thanks to technology, on the one hand, caring related to people („Fürsorge") can be improved, and on the other hand, caring related to various things („Besorgen") can also be guaranteed. Both entities, i.e. „Fürsorge" and „Besorgen", are responsible for the above-mentioned establishment of the lifeworld and existence. In the context, Ingarden strives to determine the *ontic bases of responsibility* by bringing into play the following four perspectives: (1) X is responsible for something; (2) X takes responsibility for something; (3) X is held responsible for something; and (4) X acts responsibly.[32]

5. Outlook

Ingarden thus shows that the ontological perspective of responsibility must be supplemented by an ontic perspective. These two perspectives of responsibility cannot be separated. The same applies to the nature of technology, which must be considered both ontologically and ontically. An ontological structure can only be understood in the mode of the ontic analysis. *So, it should be clear that today we not only need good technology, but we are also responsible for it.* In addition, it also means that we must take responsibility for the technology we have developed, we will be held responsible for this technology one day, and we must act responsibly when using the technology. This also creates the space for a human form of care.

[31] Cf. M. Heidegger, *Sein und Zeit*, §41f; see too W. Vossenkuhl, *Die Möglichkeit des Guten. Ethik im 21. Jahrhundert,* München 2006, p. 164f.

[32] Cf. R. Ingarden, *Książeczka o człowieku***,** Kraków 1972, p. 77f.

In his „*Philosophical Investigations*“ Wittgenstein feels addressed by Augustine´s thesis when he asks what time is.[33] Augustine´s answer calls on all thinkers – including those of technical nature – to be scientifically humble: „*Quid est ergo tempus? Si nemo ex me quaerat scio; si quaerenti explicare velim, nescio*“ (So, what is the time? If no one asks me about it, I know it; if I would like to answer someone asking, I don´t know).[34]

In order to better understand technology and its function today, we must also ask the question of the nature of technology. We know that we absolutely cannot answer this question. For we encounter the same epistemic-ontological problems as Augustine. We can only name a few factors that might help us to understand the nature of technology. That was the aim of this essay.

I know, and I think you know, that in the real world we can only live in time. But we cannot explain this time. But that time does exist. I think we can say with a clear conscience that *we can only live meaningfully in a world in which technology is used fairly.* However, the nature of technology remains metaphysically closed to us, like the nature of time. This is not due to the nature of technology itself, but – to put it in Kantian terms – to the cognitive abilities of human subjects. Bringing this constellation to consciousness, which Sartre understands as „for-itself“, is one of the first and probably most important steps towards a humane future, which must always be redesigned, also from a technical point of view.

Summary

The essay deals with the problem of contemporary technology in respect to consciousness and existence. The question of the nature of technology is examined from a semantic and phenomenological perspective. In this, an ontological balance between being and artificial intelligence is relevant. The hermeneutical handling of technology presupposes a theoretical framework with ethical implications. The nature of technology ultimately remains metaphysically closed, like the nature of time.

Keywords: *being, technology, phenomenology, science, theory, consciousness.*

[33] Cf. L. Wittgenstein, *Philosophische Untersuchungen*, 89.
[34] Cf. Augustinus, *Bekenntnisse,* Stuttgart 2003, XI 14.

Ontologische und wissenschaftlich-theoretische Herausforderungen der gegenwärtigen Technik. Eine kritische Perspektive

Der Aufsatz befasst sich mit dem Problem der gegenwärtigen Technik im Kontext des Bewusstseins und der Existenz. Die Frage nach der Natur der Technik wird aus semantischer und phänomenologischer Perspektive geprüft. Dabei ist eine ontologische Balance zwischen dem Sein und der künstlichen Intelligenz relevant. Der hermeneutische Umgang mit der Technik setzt einen theoretischen Rahmen mit ethischen Implikationen voraus. Natur der Technik bleibt letzten Endes metaphysisch verschlossen, wie die Natur der Zeit.

Schlüsselwörter: *Sein, Technik, Phänomenologie, Wissenschaft, Theorie, Bewusstsein.*

Ontologiczne i naukowo-teoretyczne wyzwania współczesnej techniki w kontekście świadomości i egzystencji. Analiza krytyczna

Artykuł podejmuje problem współczesnej techniki w kontekście świadomości i egzystencji. Pytanie dotyczące natury techniki weryfikowane jest z perspektywy semantycznej i fenomenologicznej. Znaczenie posiada przy tym równowaga ontologiczna między bytem i sztuczną inteligencją. Hermeneutyczne obcowanie z techniką zakłada pewną strukturę teeoretyczną jak też implikacje etyczne. Natura techniki pozostaje ostatecznie metafizycznie zamknięta, jak natura czasu.

Słowa kluczowe: *byt, technika, fenomenologia, nauka, teoria, świadomość.*

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