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THE CULTURE OF TECHNOLOGY AND THE PROBLEM OF RATIONALITY

> The equipments are not "means" but "pre-decisions," that is, decisions that affect us and are made before it is our turn. *Günther Anders*

Third culture - fact or postulate? In the 1950s, on the terrain of the English language, after the literary scholar and physicist C.P. Snow published *The Two Cultures*, people began to seriously talk and write about "two cultures," the culture associated with the technical and natural sciences, and the culture of literature, the arts and the humanities. This corresponds more or less *to the* division into *Science* and *the Arts,* which is connected with the very well-known in the philosophy of science suspicious treatment of all the humanities as less developed or less valuable than the natural sciences, which are supposedly legitimate sciences, or sciences in the strict sense. The idea of two cultures was seized upon in Western Europe, and in the second edition of *The Two Cultures*, Snow himself prophesied the emergence of a third culture in which humanists would become spokesmen for the sciences and natural sciences. In 1995, the collection *The Third Culture* was published in English and a year later in Polish. *Beyond the Scientific Revolution,* the introduction of which stated that the predictions[1] of Snow admittedly did not come true in slightest, and the opposite happened, "representatives of the sciences began to communicate with the general public"[2], that is, they took over the role intended traditionally, for humanist. It also said that the "third culture" that exists, however, or at least is forming at the moment, is related to the fact that what used to be called "science" now belongs to the world of culture. Contrary to Snow's prediction, the humanities have not become scientific at all; it is the naturalists who have begun to speak in a language understood by non-specialists. It must be said that Brockman's diagnosis is accurate that, in fact, in recent years, naturalists, in front of the sometimes delighted eyes of humanists, have increasingly spoken with gusto about consciousness, philosophy or ways to heal social relations. What generally escapes notice is that some (though definitely not all) of the philosophizing naturalists show serious gaps in their philosophical training in the process, not to mention other humanities disciplines; often gaps without the existence of which their popular "third-culture" theories could not have been developed[3].

[1] John Brockman: *The Third Culture*. CIS Publishing House, Warsaw 1995/1996.

[2] Ibid, p. 17.

What is most disturbing in the discussion of the three cultures are the attitudes of the representatives of the humanities, who either shift to a position of militant scientism themselves, as has happened in the circle of *cognitive science*, or, as the hermeneutics once did and the postmodernists have been doing more recently, begin to write sensible and necessary works in a language that cannot be understood either by naturalists or by anyone outside their field and their current of thought. Metaphorically speaking, under the pressure of scientism and positivism, the humanities, which is full of complexes, is either denying itself or falling into something that can be compared to autism.

All these are quite familiar matters, but this text is written with the conviction that recent world events (I will still point them) suggest quite strongly that the problem of the "third culture" has long since gone beyond not only fiction and journalism, but also beyond any purely theoretical activity, including the methodology and philosophy of science.

It is necessary to start by saying that although the designator of the name "third culture" does not yet fully exist, it is an extremely aptly chosen term. For the clash between the "first" and "second culture" is not just a confrontation of worldviews, models of science or currents of philosophy; with these theories or concepts are quite closely linked antagonistic value systems and realized, or only postulated, ways of organizing relations between people and social groups. The two "cultures" are hostile to each other not only theoretically, and the struggle between them has long since gone beyond journalism, although even in the territory of the latter it has ceased to itself and apply the principle of *fair play.* An example of the exacerbation of relations is the attempt to compromise postmodernism made by physicist Alan Sokal in the *pages* of the journal Social Text in late 1994 and early 1995, who submitted to the journal's editorial board a text entitled *Transgressing Boundaries: Toward a Trans formative Hermeneutics of Quantum Gravity*, which, as can be seen from the title itself, was nonsense written in language reminiscent *of* that of postmodernists. The text was published because the reviewers and editors did not realize its value, much less Sokala's intentions. It was perceived as an embarrassment to postmodernism, although in fact it was merely evidence of careless or unprofessional work by the journal's editors[4].

[3] J. Bobryk: *Nobel laureate as a victim of marketing.* "New Books" No. 12/946, 1997, p . 64.

[4] From what I know of Sokal's text, it seems that even a degree in physics was not necessary for its actual evaluation, because it was enough to look up in professional dictionaries the meaning of some of the more exotic terms to see that they used, for example, homonyms suggesting connections between things and phenomena that have no connection at all, just as there is no connection between a zipper and a castle in Malbork.

As I mentioned, the enmity between the "two cultures" is not only verbal, both represent modes of life and patterns of social relations that are clashing right before our eyes, patterns that, in my opinion, also include religious or at least para-religious elements. If this is the case, then there is indeed a need for a "third culture" capable of reconciling the other two.

Outline of the history of the relationship between the "first" and "second culture". The so-called "first culture" is not only dominant ("second", like the humanities that are a part of it, is still scattered and on the defensive), but also chronologically earlier. Many authors believe[5] that its history begins with the scientific and technological revolution. Although the term "third culture" is not always used, it is generally believed that from the moment of this revolution dates not only the coupling of science and technology, but also, and perhaps most importantly, the intense action of so-called technological determinism, the phenomenon of the subordination of social relations and individual human consciousness to technology. It is also argued that, more recently, electronic technology, through its own means of mass communication, has led to the strengthening and acceleration of the pace of de- termination of consciousness and social relations by technology[6].

The mechanisms that shape the characteristics of the "first culture," which I will call the culture of technology, are complex and are not limited to the unilateral influence of technology on humans. Although technology determines thinking and social relations, but they also reciprocally influence the direction and pace of development of technology. Connected to all this is still the relationship of man to nature. Technology imposes not only instrumental treatment of man, but also exploitation and destruction of nature. This is what the environmental movements have recently recognized and expressed. The unfortunate thing, however, is that modern ecology is once combined with quite irrational thinking (examples are, some at least, theories and "philosophies" created under the banner of the *New Age* movement*),* at other times it leads to acts of terror undertaken by defenders of natural environment. These examples, however, provoked by the aggressive expansion of technical culture, acts of both

[5] J. Baudrillard: *Conversations before the end.* Warsaw l997/2001; G. Böhme: *Philosophical Anthropology.* Warsaw 1985/1998; J. Habermas: *The philosophical discourse of modernity.* Cracow 1985/2000; M. Heidegger: *The question of technique,* in M. Heidegger: *To build, to live, to think. Selected essays.* Warszawal954/1977; N. Postman: *Technopoly. The Surrender of Culture to Technology.* Vintage Books, New York l993; E. Schütz (ed): *Culture of Technology. Studies and Sketches.* Poznan 2001.

[6] K. Loska: *McLuhan's legacy. Between modernity and postmodernity.* Kraków 2001;
M. H. McLuhan: *The Gutenberg Galaxy,* Univ. of Toronto Press. Toronto 1966/1997; the same: *A Selection of Texts, Poznań 2001; M. A. Moos: Marshall McLuhan Essays. Media Research, Technology, Art., Communication,* G+B Arts, Amsterdam 1997; E. Schütz (ed): *Culture of Technology. Studies and sketches.* Poznan 2001.

irrational thinking and irrational behavior do not exhaust the forms of opposition to the "first culture." Adding to the complicated relationship between humanistic thought and the culture of technology is the fact that, although the culture of technology and the associated worldview are more often than not linked to rationality than their opposition, is, especially recently, a rather specific rationality.

The rationality of the "first culture" embodied in action is best known by its fruits, and they are, metaphorically and literally speaking, not very tasty. In the modern world, which is subordinated to advanced technology, there is an "irrationality of rationality"[7], that is, the rationality still indicated by Max Weber, which boils down to efficiency, calculability, predictability and manipulability. The perfect embodiment of this rationality is McDonald's restaurants, but many authors (above all, George Ritzer and Benjamin R. Bar bera should be mentioned here) write about the mcdonaldization of social relations and almost all modern institutions. Mcdonaldization is to be subjected not only to services, including medical services, but also to education and even scientific research. All of these are today subordinated to or ultimately lead to efficiency, calculability, predictability and manipulability. It might seem that there is nothing wrong with the calculability or predictability of scientific research activities. However, if the McDonald's pattern applies to science, then scientists, like restaurant employees, perform increasingly simple and stereotypical activities, performing them in a team routine without embracing not only the purpose or effect of their activities, but also without reflecting on their meaning and place in the whole. Specialization, the dispersion of scientific disciplines, the inability of not only the humanities to communicate the natural sciences, but also, for example, clinical psychology with cognitive psychology, are perhaps good examples of the effects of scientific mcdonaldization. McWorld[8] is nowadays associated with Americanization, but a culture subordinated to technology is not an American thought, nor can it be said that the United States of America of the North is solely or primarily responsible for it. This culture, for example, had very good conditions for development in National Socialist Germany, but to associate it too closely with hitlerism would be another simplification.

One must recall here the crazy German plans to drain the Middle Sea and irrigate the Sahara and the fact that it was in Hitler's Germany that the importance of technology, engineers and technocrats increased. There, too, the attitude toward

[7] G. Ritzer: *Mcdonaldization of society*. Warsaw 1997/1999, p. 39.

[8] B. R. Barber: *Jihad versus McWorld.* Warsaw 1997/2000.

technique was at the same time an expression of the concept (insane in this case) of social relations: "There is a special kind of technique: the technique of the national-socialist, which is fundamentally different from technique we knew before 1933. [...] Let's take the example of the volkswagen, the design of which resulted from the identical results reached by the artist Adolf Hitler and the car designer Prof. Dr. Porsche. The design of the volkswagen is very unpolished, and yet it is a harmonious combination of the best technical sub-solutions [...] A glance at the development of aviation and the airborne armed forces over the past ten years since their leader Hermann Göring will lead us to similar conclusions. [...] In this field we note a special flowering of the interaction of man and machine, the result of which is the creation of a whole..."[9]. ”Jews at the wheel of a motor vehicle traveling on a German road, or even using roads built by Adolf Hitler with the efforts of the hands of German workers, have long signified to the German citizenry a provocation and a danger in public life”[10].

Perhaps because of the experience of the Nazi period, awareness of the dangers posed by technical culture is, as the scholarly literature cited here indicates, well developed in contemporary Germany. In addition to works from the Frankfurt School or Martin Heiegger himself[11], the analyses of Günther Anders[12] are noteworthy. The latter wrote as early as the 1950s about the characteristic divergence in technical culture between the ability to produce and the ability to foresee consequences. Anders, before Marshall H. McLuhan and often more insightfully than he, showed the dangers of the spread of mass communication media and the dehumanization of mass culture. He also preached how exploitation is built into the commercialized mass media, writing: "Every consumer is an unpaid laborer working at home, producing the mass man [...] A type of mass hermit has been born, who, duplicated in millions of copies, sits alone in his shell [...] Everyone is in a sense employed in the character of working at home, admittedly in a very unusual way. For he performs his work, that is, he transforms himself into a mass man through the consumption of a mass commodity, that is, in his free time" . Described repeatedly in the sociological literature, "the mass human”

[9] W. Ostwald: *National Socialist Technique,* in E. Schütz (ed): *Culture of Technique.* Poznan 1943/2001, s. 355.

[10] E. Schütz (ed): *Culture of Technology,* ed. cit. p. 89.

[11] M. Heidegger: *The question of technique,* ed. cit.

[12] G. Anders: *The Oldness of Man,* in E. Schütz (ed): *The Culture of Technology,* ed. cit.

[13] Ibid, pp. 422-424.

seems to be a product of technology and mass communication. In the age of mass culture, it is already clear how unrealistic Marxist hopes for the revolt of the conscious proletariat were. "Mass man" will not revolt for two reasons. First, he does not constitute any intellectual elite of humanity and is not even aware that he is being exploited and treated instrumentally; second, those who create and mass culture do not constitute any group or organized social structure, they are atoms, attached to their televisions and personal computers. Social communication here is either one-sided or apparent. As shown, not only by representatives of the Frankfurt School, but also by almost all theorists of mass culture[14].

Even before the rise of the Frankfurt School and with no connection to Marxist thought, the close and two-way interactions between economic relationships and worldview were shown. It was Walter Benjamin who, in his 1921 work *Capitalism and Religion,* based on and at the same time going beyond the connections presented by Max Weber between Protestant ethics and the development of capitalism, showed the links between guilt, religiously motivated sensations and hopes associated with the development of technology. In short, the scientific and technological revolution, which initially created acute social exploitation and a proletariat organized against it, eventually entered a phase of mild exploitation of mass. The proletarian was starving, his other natural needs were frustrated. The mass man of Western society lives in relative , while mass culture tends to be geared toward wringing within him and satisfying entirely new needs, needs that of course sustain the "mass character" of society.

The Frankfurt School, distinguishing between instrumental and communicative actions, seeks in the latter a remedy for the emancipation of man, that is, to liberate him from false consciousness, from instrumental treating of self and others, from apparent understanding of self and false understanding of the nature of social relations. Hermeneutics, following Wilhelm Dilthey seek correct "understanding," distinguishing it from "explaining," and leaving the latter to the natural sciences. Edmund Husserl and his successors[15] have attempted and are attempting to reach the world of values, a world that was lost when reason, possessed of a technical and naturalist attitude, began to misconceive itself[16]. Existentialists somewhat

[14] D. Strinati: *Introduction to popular culture.* Poznan 1995/1998.

[15] V. Galewicz (ed): *From the phenomenolog ii of values.* Cracow 1988.

[16] E. Husserl: *The crisis of European sciences and transcendental phenomenology.* Cracow 1936/1987, pp. 78.

differently than the representatives of the Frankfurt School tried to save the freedom of man and protect him from false consciousness.

The history of critical reflection on technical culture is, of course, much longer and more complex than what I wrote above would suggest. However, this critical reflection has not created a unified system of thought, let alone any systematic or institutionalized action. "Second culture" is still in dispersion, being mostly a series of re-started and little-coordinated protests. These protests are mostly history now. The philosophy of life seems to be history, existentialism does not exist, phenomenology as a philosophical direction is doing well, but generally does not find a practical sound a long time. The latter can be shown by the history of the rise and fall, based primarily on phenomenology and existentialism, of humanistic psychology. In the 1960s, humanist psychology was linked to rather radical social movements, the extremes of which came in 1968 and the so-called student revolts. This psycho logy had quite utopian ideas for the healing of social life, and the ultimate relatively lasting successful practical effect of these ideas, was a revolution in psychiatry. Humanistic psychology and so-called "anti-psychiatry" led to the eventual granting of certain rights to the mentally ill and an understanding of the value of psychotherapy[17], especially group therapy. At that time, much was written about the transition from biological to humanistic psychiatry and the abandonment of theories seeking the causes of psychiatric illness exclusively in organic changes. Today, biological psychiatry is once again dominant, while the methods promoted by humanistic psychology are rarely based on group therapy. Rather, therapeutic treatment is based on variety of **individual** relaxation techniques. Other theoretical ideas of the former humanistic psychology have now de- generated to many theories of a parapsychological[18] or paramedical nature, or at best to a "theory" and practice of so-called neurolinguistic programming, which is a distant echo after the ideas of Alfred Korzybski.

Nor is it best for contemporary opponents of technology culture.... Postmodernism, uneven and difficult to evaluate in its entirety, has ardent supporters and opponents. However, I get the impression that an excellent percentage of some as well as others do not understand postmodern thought. Its understanding is not facilitated by its creators themselves. Contemporary postmodernists, poststructuralists and

[17] V. E. Frankl: *Psychotherapy and Existentialism. Selected Papers on Logotherapy,* Penguin Books, New York 1967/1978; R. Boyer, R. Orrill (eds.): *R.D. Laing and Anti-Psychiatry.* Harper, New York 1971.

[18] W. Walker: *An adventure in communication.* Gdansk 2001.

deconstructionists most often do not go beyond the trenches of their zealotry, which makes it superbly easy to both practically ignore them and judge them for writing silly things.

Reflecting on the state of technical culture, one may ask: If the opponent of this culture is so weak and without chance, if the "second culture", as history has shown, does not threaten the "first", then why create a "third culture", supposedly having the function of reconciling the (unequal after all) struggle between the first two? All the more so since technical culture seems to be entering a better and better period. Ecological consciousness has strengthened, communism once tossing between the theory of Marxian humanism and practical totalitarianism has collapsed, the danger of nuclear catastrophe has receded (perhaps only seemingly not). Even if there is some grain of truth in the allegations of post-modernists stating that the love of organization and order characteristic of technical culture gave birth to, or at least supported, Hitler's concentration camps, after all, we are long that. All the more so since the "end of history"[19] has been proclaimed, thus the end of wars and the beginning of the widespread reign of the mildly coercive liberalism knitted together by modern mass communication and its technology.

Nevertheless, I think there is realistically a need for a "third culture," a certain pattern of social relations that avoids the dangers of technological determinism (including media determinism), and an integrated humanist worldview, as well as a model of science that avoids, on the one hand, the flaws of scientism, and on the other, the autism of humanist philosophy or even the schizophrenia of pseudohumanists.

I think that technical culture, currently caught up in the poli tical and social transformations known as globalization, is only seemingly doing well. This culture itself breeds its own enemies, although there are no more communists, there are anti-globalists, there are environmental terrorists and inter net criminals, there are eager and mindless consumers of virtual reality and products of the so-called "low New *Age*" movement embedded in commercialized mass culture[20], and finally there is the metaphorically understood [21] Jihad. There is, moreover, also Jihad in the proper sense, whose

[19] F. Fukuyama: *The end of history.* Poznan 1992/1996.

[20] A. Brzezinska, Krzysztof Bondyra, Jowita Wycisk (eds): *New Age - new enlightenment?* Poznan 1999.

[21] B. R. Barber refers to European and non-European, past and present, reactions to the scientific and technological revolution and capitalism as "jihad." These are various, and generally combined with active aggression, forms of combating the effects of industrialization and the antisocial inequalities associated with it. Jihad proper, of course, is Islamic fundamentalists.

existence and activities is not explained by the label "religious fanaticism," because it is necessary to understand and say where this fanaticism comes from.

Technical culture today. Regardless of whether we say that there is a real problem of confrontation between the "first" and "second culture," whether we consider that there are only real contradictions and antinomies of the Enlightenment reason, which gave birth to a science born of technology and social relations almost completely subordinated to technology, it is worth considering all the dangers inherent in technical culture. But let's start by listing its characteristics.

1. The first is that it focuses on the means, assuming that the ends are either the same for everyone, obvious, or long ago agreed upon and widely accepted.
2. The second feature is overconfidence in technology, the belief that it solves all problems, which, among other things, results, indicated by Günther Anders, in the myopia of the creators of technology and the inability to predict the consequences of technical development.
3. The culture of technology is combined with an emphasis on perfect organization and efficiency, which in itself is not a bad thing, but can be taken to extremes and obscure the purpose of activities and distort the system. The value system that "technical reason" consciously or unconsciously adopts turns out, sooner or later, to be a system that turns against man. The best, albeit extreme, example of such perversion of the value system were the bureaucrats who organized and supervised the concentration camps, bureaucrats whose efficiency was supported, as it turns out today, by the inventions of the IBM corporation....
4. The instrumental treatment of man (more precisely, the instrumental treatment of other people as well as of), and the exploitation of nature are extreme in technical culture, and go as far as the danger of complete destruction of the natural environment and the total subordination of man to technology. An example of this is the idea of cloning humans, i.e., producing people like commodities on demand. This production, if it eventually becomes a reality, will not initially go beyond manufactory methods, but it is possible to develop it on an industrial scale.
5. The development of technology drives itself, cars require highways, highways provide opportunities for the development of automotive technology, improved transportation requires facilities, technical facilities, gas stations, hote li, etc. In this way, many fields of technology are integrated, further technology **autonomizes,** becomes a system that regulates itself
6. **With the advent of information technology comes new** insecurities, and there are many of them, but the biggest one is that machines are taking over many human intellectual functions and almost all of the

control functions. This **delegation of intellect** deepens the expansion and autonomy of technology. In addition, advances in information and computer technology are developing and strengthening mass culture and brilliantly facilitating globalization (of the economy and other areas).

7. Electronic technology popularized and placed in the hands of directors of mass communication causes, or at least enables, the **regression of many human abilities and skills.** Contrary to appearances, advanced can be used, and indeed is used, by people who are poorly trained and cognitively underdeveloped.

These are only some of the features of technical culture, and even so I may be accused of considerable exaggeration, so I must refer to a number of concrete examples to illustrate what I have written. I will focus on the features mentioned at the end, since the others (obscuring of means by ce le, excessive emphasis on organization, autonomy of technology) are well described in the literature I cited above[22].

There is a belief that advanced technology quite relatively requires some particularly skilled, gifted or trained user. In reality, however, quite the opposite is true. Let us first look at information technology, which reveals very well the actual relationship between the degree of sophistication of the technology and the characteristics of most of its users. I am not referring to the creation of this technology (and therefore the creation of *software* and *hardware),* but to its use.

Almost everyone can use a calculator, but the ability to count on a logarithmic slide rule is now disappearing even among engineers. To use a computer and the Internet, you do need practice, mainly the exercise of certain psychomotor skills, but beyond that, you don't need any special abilities (not counting sensorimotor intelligence, of which children have the most) or special intellectual development. Advanced computer programs themselves explain how they should be used. They do this better than a teacher because they are "impartial" and "patient." Websites have already been prepared for children who can neither read nor write yet. It should also be recalled that the personal computer market is based primarily on consumers who are at most a dozen years old, and adapts constantly to their mental level. Therefore, all computer users, willingly or unwillingly, have moved from DOS to Windows[23]. Anyway, it is enough to

[22] See footnotes 5 and 6.

[23] It should be clarified here that the classical psychology of intellectual development assumes that concrete visual-spatial intelligence (on which the WINDOWS environment is based) comes before intelligence, formal or symbolic (its use was required by DOS).

see what foolishness appears on many to see what is the average or prevailing intellectual level of its users[24]. The moral level of Internet users is also not the best, as evidenced by the not-so-picky jokes that appeared on websites related to the attack on the Pentagon and the WTC in New York.

The above principle is not limited to computer technology. It takes a long time to learn how to use a bow and javelin, a self-targeting bullet will fire at vet an untrained chimpanzee. Selective shooters became unnecessary (except for some exceptional situations) with the introduction of machine guns. And anyway, the most trained sharpshooter could not kill as many people as one mentally limited terrorist can. Besides, killing can be completely entrusted to automatons. Someone who once learned to wield a sword or a sword, learned for a very long time and grew into a certain ethos at the same time, had to adhere to a certain ethic ty and a strict code of honor. The ethics of combat died during the First World War, machine guns and battle gases killed it. If rules are sometimes observed in modern war, it is not as a result of the moral qualities of the combatants, but as a consequence of international agreements and sanctions. This shows how little the qualifications and qualities of individuals matter in modern times. **A feature of advanced technology is the ability of full interchangeability of its users, their individual good or bad qualities do not generally matter much.**

The assumption of various cognitive and control functions by machines can only seem like a positive thing. Computers react faster than humans, make fewer mistakes, etc. Today, it is difficult to imagine space flights or even ordinary aircraft flights without computer technology. However, this causes an overconfidence in technology, a belief that, as the philosopher of technology Jacques Ellul said, it will solve all problems, even those it causes itself.

Until some time ago, it seemed that electronic technology was indispensable at least in collecting and processing information, meanwhile, on September 11, 2001, the technique of global electronic surveillance, *Echelon*, failed completely. This electronic surveillance system designed to combat terrorism developed by the US and Britain failed to protect New York and the Pentagon. Besides, a similar attack would have been impossible in a country without such large aircraft and skyscrapers. However, this glaring disaster did not undermine confidence in technology one bit,

[24] There is information about alien conspiracies threatening the Earth, real Existing and effective sorcerers and spells, exploding heads, not to mention the secret dreams of "adult magazine" models.

One of the first reactions the US president was a promise to develop electronic missile warning systems and rebuild New York's skyscrapers.

Marshall McLuhan wrote about media bewilderment, and electronic technology is no less bewildering. The bewilderment does not even escape the scientific community. The human brain has about 10^{10} neurons, and each of them some 10^4 synaptic inputs. From this it follows that the number of possible settings of such a complex system, that is, the number of possible distinct human brains is the so-called immeasurable number (Walter Elasser's term[25]), a number greater than 10^{110} (ten to the power of one hundred and ten, or one and 110 zeros). The mass of the universe measured in mass units based on the hydrogen atom is 10^{80}. There is not and will not be such a computer (there would be a shortage of atoms in the universe), which would have a memory that could store an "immeasurable" number of items. All this does not prevent serious scientists from trying to simulate, as they believe, the workings of the brain on computers. Anyway, most often these are simulations of the work of a few hundred neurons. Nor did confidence in technology bother to seriously discuss, fifty or twenty years ago, comparable to human thinking machines[26]. Of course, theoretically at least, it is possible to create a system as complex as the human brain is complex (complexity here depends not only on the number of parts, but also on the number of possible connections between them). Such a system, however, will not be able to reflect and describe itself (or any other similar system) definitively, and therefore to know, as cognition is understood in the natural and technical sciences. (This is known from the fact that such systems already exist, they are our brains, which function effectively without knowing their structure or principles of operation).

However, these are not the fundamental mistakes of scholars who want to replace psychology with artificial intelligence theory[27], the most significant ones consist of something entirely different. These are errors, one might say, purely logical. First of all, it is wrong to believe that mental activities are performed by the brain, or, to be more precise, that such activities can be performed by the brain itself and its actions in isolation from the rest of the body and the environment. Psychological thinking is dominated by a reductionist identification of neurophysiological activities with mental activities. World-renowned opponents of such

[25] A. Scott: *Stairway to the mind.* Warsaw 1995/1999, pp. 21 and 229.

[26] In 1957, H. Simon expressed his belief that in 10 years or so, research in the field of artificial intelligence would lead to the construction of an "artificial brain" that would discover and prove some new and important , mathematical theorem. A little later, Marvin Minsky, another artificial intelligence theorist, taught that soon silicon brains, will treat us as we treat our pets.

[27] W. Z. Pylyshyn [1984/1986]: *Computation and cognition.* The MIT Press, Cambridge, MA.

reductionism [28]were unlikely to convince most proponents of the theory of artificial intelligence, perhaps because their arguments were based overwhelmingly on a phenomenological tradition that is little known in the culture of technology. I will therefore refer here to the citation of an argument developed within the Lviv-Warsaw school. Of course, this is not an argument against artificial intelligence, but against identifying brain activities with mental activities.

At the end of the 19th century, Kazimierz Twardowski[29] wrote: "Well, calling the activities of the mind functions of the brain, one can either be right or wrong, according to the meaning one gives to the word "function". For the word is ambiguous. In mathematics we call a function a quantity, be it quantitative or spatial, which according to a certain law depends on another, so that it changes its value accordingly [...] The second meaning of the word "function" is completely different. We say, for example, that teaching children is the function of the teacher, that secreting bile is the function of the liver. In latter case, the word "function" means the activity that a person or thing performs. Well, the mental activity is certainly a function of the brain in the first sense of the word, for certain changes occurring in the brain entail changes in mental activity. Mental activity cannot be called a function of brain in the second sense. For there is no evidence at all that mental activity is performed completely and exclusively by the brain."

The above passage reveals a basic feature of the Polish method of analytical philosophy based on carefully analyzing the meanings of the words and linguistic phrases we use, and drawing conclusions from these analyses. The fact of the homonymy of the word "function," theoretically well known, is as if unknown or neglected in modern *cognitive science,* cognitive psychology and artificial intelligence theory.

In mathematics, a variable y is called a function of a variable x (called *an independent variable)* if for every value of *x* (taken from some set Z) there corresponds to one labeled value of *y.* A function can be defined by various means: by means of function tables, by means of graphs, by means of one or more formulas. Needless to say, when we talk about psychics as a function of the brain, and understand the word "function" to mean "mathematic function" (rather than "physiological activity or process"), we are at best talking about indefinite functions. **There are no**

[28] E.g. H. L. Dreyfus: *What Comuters Can't Do. The Limits of Artificial Intelligence.* Harper, New York; J. R. Searle [1984/1995]: *Mind, brain, and science.* Warsaw 1972/1979.

[29] K. Twardowski: *Psychology vis-à-vis physiology and philosophy,* in T. Rzepa (ed.): *Psychology in the Lviv-Warsaw School. Warsaw* 1897/1997, pp. 90-91.

formulas, tables or diagrams showing the relationship between brain states and states of mind or psyche. Thus, the knowledge that the psyche is a function of the brain has no practical utility, and the phrase will only seem to be something to suggest to the inattentive reader the scientific nature and accuracy of psychological knowledge. The suggestion, however, is succumbed to by many, including **some** proponents of neuropsychiatry.

The undoubted existing, but rather not precisely known, relationships between changes in the nervous system and changes in the psyche are interpreted in psychology as evidence that mental activities are performed exclusively by the brain, or central nervous system. We confuse the cause with the sufficient cause and imperceptibly and unconsciously jump from one meaning of the word "function" to the other. The resulting anthropomorphization of the brain[30] is based here on the unconscious use of a rhetorical figure called synecdoche. Synecdoche involves the use of the name of the parts instead of the whole, or vice versa. Although Sienkiewicz wrote that Volodyjowski, was the first saber of the Republic, this does not mean that he was convinced that Volodyjowski could have consisted of a hilt, handle and head made of Damascus steel. Meanwhile, psychologists are sometimes convinced that it is the brain that thinks and performs various other activities that are actually performed by a person, and sometimes a person using a variety of tools[31]. Here, too, the influence of the media reveals itself, because the image of an independently thinking brain we know from science-fiction horror movies, it is a brain in a vat kept artificially alive[32]. For normal mental life it is not only necessary to keep the brain alive, it is not even enough to provide it with some sensory stimulation. It is also necessary to integrate these sensory stimuli with the external activity of the human being, because this is what mental activities are in essence. This is what Kazimierz Twardowski and other theorists" of intentional acts noted.

> Why Twardowski, educated in the 19th century, easily noticed something that escapes the attention of many people equally eminent and educated at the end of the 20th century ? In my opinion, this is because he has not yet grown as firmly into what I call here "first culture" as contemporary scholars. Besides, as a disciple of Franz Brentan, and at the same time an enthusiast of Moritz Schlick's philosophy, he belonged, if one may say so, to "two cultures" at the same time.

[30] W. H. Calvin: *How the brain thinks.* Warsaw 1996; A. Moir, David Jessel: *Gender of the brain*. Warsaw 2000.

[31] J. Bobryk: *Cognitive science the science of artifacts.* "Polish Psychological Bulletin " vol 20, no. 1, 1989, pp. 3-14; of *the* same: *Modem and postmodern visions of the human mind.* "Polish Psychological Bulletin " vol 31, no. 2, 2000, pp. 93-100.

[32] H. Dreyfus, John S. Searle, as in note 28.

A cure for technical culture? In the end, it is necessary to say straight out how the consideration of the "three cultures", attacks by terrorists and the troubles of cognitive psychology based on the theory of artificial intelligence relate to each other....

I wrote that technical culture ("first culture") is now a do mining system of values, a way of thinking, that it is fused with do mining social and economic relations in the world, which is why the world is ironically but aptly called McWorld. I also said that successive attempts to create and strengthen the so-called second culture (e.g., philosophy of life and hermeneutics, existentialism, humanistic psychology, and, more recently, postmodernism) most often failed before they developed into a mature system of thought, or were unable to prevent the misfortunes resulting from the one-sided development of culture and technical civilization (one exception to this is phenomenology in particular, but I will return to it.) In this situation, the synthesis of the two cultures, that is, the attempt to create "third culture," is undertaken by representatives of technical culture. This happened in the current of *cognitive science,* this current, as I tried to show, does not actually go beyond the "first culture." At the same time, being in the phase of globalization, technical culture has many enemies who, unfortunately, perfectly (for example, the tragic attack on the WTC) exploit its weaknesses and contradictions. Besides, without justifying terrorism, it must be said that these enemies have, in a sense, been created or are provoked by the globalized and dominant system of social and economic relations.

I have also tried to show, using examples, the weakening of rationality within the technical culture. The weakness of this rationality is visible, in my opinion[33] , not only as a feature of everyday thinking, as it sometimes characterizes scientific thinking. Similar criticisms are now being made postmodernists, many of whom, however, linguistically and conceptually undermine the very idea of rationality. Among former and current critics of technical civilization, the best, as I mentioned, are the successors of Edmund Husserl, but not those who continue him in an orthodox manner. I see perspective primarily for representatives of existential phenomenology (e.g., Hubert Dreyfus) and those who combine the tradition of analytic philosophy and phenomenology (e.g., John R. Searle). We had a synthesis of analytic philosophy and theory of intentionality in Poland during the development of the Lviv-Warsaw school. Perhaps it is worth revisiting this synthesis?

As it seems, we face the problem of salvaging the good qualities of both spheres: **the intellectual discipline of** natural sciences and **the non-instrumental**

[33] J. Bobryk: *Representation, intentionality, self-awareness*. Warsaw 1996.

treatment of the human **being** proposed by various humanist orientations. **This is not a purely philosophical problem, because it is a practical problem.** If we do not solve it, we may soon begin to seriously with totalitarianism and/or pseudo-humanist irrationalism.