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## On the Ecology of Faith\*

### W kwestii ekologii wiary

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**Abstract:** Nowadays, we observe a progressive depreciation of faith together with the degradation of the social environment. It concerns faith in a broad sense here, not only religious but also faith in ideals, in ourselves, and the confidence to other people and to different social institutions. We should not permit the further deflation of faith regarding the role which it plays in the life of people, their thinking, and doing, in integrating them in a world community as a result of globalization. On the contrary, it is necessary to strengthen our faith to care for it. Therefore, it is necessary to create an ecology of faith and to develop large, deep, and many-sided study in this domain, because faith is a means for survival in the present endangered life environment.

**Keywords:** environmental crisis, faith, religion and ecology

**Streszczenie:** Obserwujemy obecnie postępującą deprecjację wiary, a wraz z nią degradację środowiska społecznego. Chodzi tutaj o szeroko rozumianą wiarę, nie tylko religijną, ale także wiarę w ideały, w siebie, zaufanie do innych ludzi i do różnych instytucji społecznych. Nie powinniśmy dopuścić do dalszej deflacji wiary w odniesieniu do roli, jaką odgrywa ona w życiu ludzi, ich myśleniu i działaniu, integrując ich ze wspólnotą światową w wyniku globalizacji. Wręcz przeciwnie, aby o nią dbać, trzeba wzmocnić naszą wiarę. Dlatego konieczne jest tworzenie ekologii wiary i rozwijanie szeroko zakrojonych, pogłębionych i wielostronnych studiów w tej dziedzinie, ponieważ wiara jest środkiem do przetrwania w zagrożonym współcześnie środowisku życia.

**Słowa kluczowe:** kryzys środowiskowy, wiara, religia i ekologia

#### Introduction: faith as an object of ecology

Broadly understood ecology is in fact “the science of dependencies, that is, of the mutual connections between various factors of a dynamical system” (Wojciechowski 2001, 1). The social environment, or socio-sphere, is undoubtedly one of the dynamical systems. Thus, the subject of environmental studies may be the dependencies or interrelationships between components of the social environment. In this sense, it functions as the so-called social ecology. In my opinion, the “ecology of faith” is a special subdomain of social ecology. It investigates the relations (connections, interactions) between people and the

structure of faith, where faith is a relatively autonomous component of the social environment that plays an essential and probably increasing role in the life of individuals and communities. I understand faith not only in a mystical or religious dimension, but more broadly, as self-confidence and trust, belief in righteousness

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and truthfulness, and as a conviction in someone or something. In this sense, faith is the foundation of community and it becomes instrumental: it is a tool for the true integration of social groups, and not only for the formation of particular communities. The faith itself seems to be a product of natural evolution connected with human corporeality and is probably primarily founded in the brain. Recent research in neurophysiology of the brain shows that faith, even faith in God, is a function of the corresponding parts of the brain lobes and that damage to those lobes can lead to the loss of faith. And there are still more scientists reducing our spiritual qualities to the functioning of neurons in the brain (neural faith correlates) and to biological corporeality (Kutschera 2002; Angel, and Krauss 2004; Gaschler, and Könneker 2002; Boyer 2004). It is not the case with the structure of faith. The structure of faith is undoubtedly a product of human history and social evolution, as are working tools, housing and the legal system. It changes and becomes more complicated with social progress. The structure of faith, its object, form and manifestation, being a kind of artefact or product of society, becomes alienated. At the basis of the ecology of faith is the assumption that the structure of faith is one thing, but the people who believe is quite another. The structure of faith, being a product of alienation, is an entity governed by its own laws, other than the laws governing the creators of faith. As a product of alienation, it exists in a sense objectively and is a component of the environment external to the individual with which it interacts. Therefore, the structure of faith is part of the social and cultural environment. It is an essential component of our living environment. It changes with the development of society and undergoes depreciation that progresses with the degradation of the social environment. It should be stressed that faith is as great a power as knowledge and that it plays an important role in people's lives - in their thinking and acting, and in particular in shaping their community and in the pro-

cesses of globalisation and integration. For this reason, modern civilization should not be allowed to weaken faith and contribute to its deflation. On the contrary, faith must be strengthened. Hence the need to protect faith and the need to create the ecology of faith.

It is reasonable to believe that faith is the foundation that supports the creation of social links and the formation of communities. It gives rise to all interactions that result in social integration. To unite into communities to achieve specific goals and integrate efforts to achieve them, one must believe either in ideas, or in experts or leaders. The stronger this faith is, the stronger the bonds that bind the community together, the more resistant its structure is to destructive actions. Conversely, a lack of mutual trust between members of the community and faith in the authority of a leader results, sooner or later, in the disintegration of a given social structure.

### **1. Depreciation of faith in the modern world**

Modern societies are characterized by a progressive decline of faith, not only in the religious dimension, but mainly in the secular one. This is a phenomenon that occurs primarily in highly developed countries, where there is a high standard and comfort of living. Own observations and sociological research prove that people are increasingly losing faith in what was most sacred and unquestionable for them: great ideas, authorities, values, science, flagship slogans, etc., and the capacity to act, the meaning of life and themselves.

We can see a correlation between the standard of living, the progress of technology and knowledge and the degradation of faith: the more civilised societies, the greater the loss of faith within them.

Signs of the decline of faith are found in various spheres of social life. It is expressed as a significant reduction in the degree of trust or even a complete lack of trust in people, as individuals, in various groups, organisations, institutions and social systems. It is impossible to describe all the instances of distrust that occur in all

areas of social life. I will, therefore, by way of example, point to just a few.

In the area of education in its broadest sense, there is a progressive decline in the trust of students (pupils) in teachers (educators), teachers in headmasters of educational institutions, as well as in local (municipal) and central (ministerial) educational authorities. This phenomenon is associated with the well-known erosion of authorities. This is also where the lack of trust and the deflation of authorities within the family - children to their parents - are located.

In the area of science, there is a decline in confidence in the results of scientific researches and in expert opinions, and thus in experts, especially in, but not limited to, the fields of humanities and social sciences. [This is caused by the increase in plagiarism, expert opinions prepared to a corrupt or political order, exploitation of scientists or actors playing them in advertisements, which by their very nature are excessive, failure of the power elite to take into account even the reliable expert opinions in making political and economic decisions].

In the political sphere, perhaps the most prevalent is the growing lack of trust of citizens in politicians, elites in power in various institutions (bodies) and in the state. This sharp decline in confidence in politicians and Government representatives was particularly visible in the third decade of the last century. This mainly stems from the fact that politicians and authorities are becoming increasingly more linked to the financial elite and corrupt, or at least at great risk of corruption.

In the legal sphere, there is a progressive lack of faith in the fairness of judgements and the independence of courts, in the selflessness of prosecutors and judges. Even in the religious sphere, faith in the words proclaimed by the clergy and trust in the hierarchy of the Church is declining.

There is widespread distrust in the political programmes that have been announced, especially the innovative and supposedly restorative ones, the economic plans promising wonders and the ideologies boasting visions of a better world and better people.

Trust is a function of many variables, of which two are the most important: a sense of certainty and security.

Trust is not something innate, but something acquired, something that is built, something that occurs as a result of a long process and life experience. From the moment of birth, all trust is placed in the mother, and then one gradually experiences frustration, trauma and disappointment. They cause us [to be distrustful of others. Life is a process of growing distrust because we are faced with more negative experiences and disappointments.

The opposite of believing in other people is distrust, and lack of faith gives rise to the fear of failure. A person who does not believe others is forced to defend oneself against them, to protect oneself and to live in constant tension and fear of being cheated, assaulted, robbed or murdered. The lack of faith in specific people and real existing beings (currently experienced with the senses) is compensated by faith in fictional characters, abstract beings, hypostases, supernatural forces, imponderabilia, etc. This is because faith and trust are the foundation of our lives. They are the basis for optimism, hope and expectation, the will to act and prospective thinking, the desire and sense of life. Without the belief that one could at least partially meet the expectations, implement a plan or achieve a goal, it would be ridiculous and unfounded to make any efforts, attempts or work, i.e. to do the very things that characterise human beings. Thus, the lack of widely understood faith reduces a human being to an animal, although even animals are instinctively oriented towards the future, i.e. they "believe" in subsequent states, and domesticated animals "believe", for example, in their owners or guardians. It is primarily believed that something bad can happen to everyone else, but not to ourselves. What we are dealing with here is the belief in one's own fortune and the avoidance of what is unfavourable, unwanted or undesirable. And this even goes against the rational, calculation-based and objective assessment of the situation and subjective possibilities, as we are willing



to resort to believing in illusions when there are no grounds to believe in reality. Living in a group - and we are social beings by nature - is associated with the need to coexist and cooperate with others. Both require interpersonal trust and confidence in mutual assistance within the group.

An important factor determining the nature and quality of human relations in the social system is the interpersonal trust. It increases people's sense of security and the expectation of receiving help when needed. Trust increases the frequency of communication and the ease with which people interact, reduces the need to control and impose external discipline, and facilitates compromises in conflict situations. This contributes to mental comfort. Trust in other people increases with positive experiences in interacting with them.

## **2. Globalisation, security and faith**

In the process of globalisation, the social environment is becoming increasingly more "dense" and social organisms become more complex and highly organised. It should be noted that an increase in the degree of organisation of a system does not necessarily lead to its perfection or better functioning. There is no doubt, however, that the higher the degree of organisation of society, the more people are involved in an extensive network of dependencies and are closer to each other, as they can communicate and meet with each other quickly (almost immediately) thanks to advances in transport and communications. Consequently, it would seem that the increase in the degree of organisation correlates with the increase in security and that life is safer in a highly organised society. Therefore, there is a fairly common belief that in a "dense" social environment, an individual feels safe and secure. It seems that one can then count on quicker, better and more comprehensive help or care from others. Such a conviction gives rise to a belief that highly organised and dense societies better fulfil the caring function towards an individual. There is some justification for this belief in finding support in others. After all, a highly or-

ganised group should provide an individual with care and thus greater confidence and security. An integrated society should provide even greater security. It also seems obvious that the merging of social groups and countries broadens the scope of protection for these groups and countries, and contributes to increased security as a result of compliance with conventions, treaties or unification agreements.

In our history to date, we have mostly been dealing with merging to defend ourselves against external enemies - possible invaders or aggressors. It was rightly believed, and the practice has confirmed, that larger and better organised communities can defend themselves better and more effectively than small ones. On the other hand, as if in response to this, warrior groups ("aggressors") also had to unite to be able to win. As a result, an increasing number of people have joined together to defend themselves, and to attack. This in turn caused both defensive and offensive systems to grow; they absorbed more and more countries and people. And with that, the number of such systems was reduced. In the second half of the twentieth century, there were basically two agreements of global importance - the North Atlantic Treaty Organization (NATO) and the Warsaw Pact. Nowadays, there is only one that is still expanding. It is possible that in the future there will be one global pact of a more defensive than offensive nature. For no reasonable person will commit acts of aggression knowing that in a globalised world even a minor local conflict can easily become global (the "butterfly effect"), i.e. worldwide, and in such a case there is the possibility of using weapons of mass destruction, which can result in the self-destruction of humanity. Furthermore, a world war seems to be pointless, as it does not provide a solution to the important problems of the modern world. Due to globalization, the number of "external enemies" will decrease, because humanity will form a type of "one family" or "one fold". However, this will not eliminate internal social conflicts (the family also argues) nor will it reduce the number of "internal enemies".

The basic internal conflicts will be related to the progressive degradation of the environment, which I believe will continue despite many “green” initiatives. Instead of wars on the economic grounds, for example, for the seizure of wealth or energy resources (primarily crude oil), environmental wars will begin to break out, for example, for habitable territories or access to drinking water. Because of the self-preservation instinct, people will be forced to join together and integrate to be able to resist destructive processes more effectively and pursue the most important goal in synergy: shaping the optimal conditions necessary for survival and for our species to survive as long as possible in conditions of increasing threats posed by the progress of civilization and (resulting therefrom) degradation of the natural and social environment. Thus, the realization of the need for the safe existence of all human beings in an integrated (and globalized) world can begin for the first time in history, and probably for the first time people will start to unite not AGAINST something or someone but FOR something or someone.

The main objective is to ensure a secure existence in an increasingly rapidly changing and dense global ecosystem. At first glance, it seems that existing in a globalized society - in the famous McLuhan’s “global village” - should provide people with the highest degree of certainty of survival, and the increasing density of social space-time should contribute to their security. It seems obvious that there is a relation between the degree of organisation of the social system, the growth of the network of various dependencies, i.e. “networking”, the shortening of distances and the pace of the information flow on the one hand, and the sense of certainty and security on the other. Unfortunately, this patency is rather based on mythical thinking and is probably just an illusion, as the reality is quite different. Despite all appearances, as the social density or condensation of the living space-time increases and as the adverse effects accompanying the processes of globalisation increase (multiply and intensify), the risk of survival increases and thus our security decreases. It is not clear whether

there is a proportional or a “stronger” relation. What I mean by security is social security in general. And when I refer to risk, I mean first of all the “objective uncertainty” inherent in the pattern of social evolution and the lives of individuals, governed by statistical or probabilistic determinism. It accompanies all activities, especially those of people who are living at an ever-increasing pace and in a growing hurry, as well as the functioning of technical devices which, as a result of advances in knowledge and technology, are becoming increasingly complex and prone to more frequent failures.

The social space-time condensation contributes to the increase of the degree of risk and the reduction of the level of risk awareness. People tend to think that living in a «tight» group is safer than living in a «loose» group, that they are more secure, and that they are less likely to fail and more likely to survive in a «tight» social group. This conviction stems from the fact that close and easier contact with other people seems to automatically ensure faster and more comprehensive help and care provided by them. This is yet another illusion, this time related to the belief that closeness begets friendship, and this, in turn, provides support and help. The unreliability of such reasoning was long ago pointed out by I. Krasicki in the fable entitled “Friends”, where he included an apt moral: “(...) among many friends, dogs ate a hare.” Living in a «tight» social group does not compel by itself (and it is not clear if even intentionally, e.g. through appropriate upbringing) to adopt altruistic, pro-social, friendly attitudes, readiness to care and help, or to give up egoism. On the contrary, and even paradoxically, the densification of the living environment - from a certain point on - encourages egoism and gives rise to attitudes of intolerance, aversion to others, and even overt hostility. As a result, a strange situation occurs where we feel more secure and less threatened when we are alone. For example, when we see a stranger on the street late in the evening, we start feeling afraid that he or she might attack us; we feel potentially threatened.

It's best if we don't see or meet anyone. It may be that in the sociosphere, as in nature, the long-established Bancroft principle is proven true, i.e. "the changes to the system are aimed at eliminating their causes (or at minimising the external disruption)" (Latil de 1958, 181-182). If there is a mechanism of homeostasis (unrecognized by historians and sociologists) in a society understood as a system, i.e. balance, then the processes of social space-time densification should be, at least from a certain level onwards, balanced by opposing processes, and the occurrence of phenomena accompanying condensation should be countered by the occurrence of radically different phenomena. This assumption seems to be confirmed by the observation of social life.

In the "dense" social space-time, areas of individual living space, areas of privacy, and thus the actual freedom of individuals and their subjective feeling of freedom are gradually being reduced. There is a threat to the freedom of individuals, which causes a natural defensive reflex in the form of rebellion and aversion to others. This has been mentioned before. As is the case with technical devices, where a greater number of elements increases the possibility of failure, so too in social systems: the more entities - people, institutions and organisations, and the dependencies and interactions between them (much more complex than in technical systems since these entities have free will, ambition to achieve their own goals and guided by their own interests), the greater the probability of "failure". Examples of such "failures" include conflicts, disagreements, acts of aggression, failure to observe moral norms, etc., that is everything that gives rise to the uncertainty of normal behaviour and harms pro-social attitudes (for the common good), and finally also poses a threat to the lives of individuals who are treated as potential (and often real) enemies who limit the individuality, privacy and freedom of others. These issues are known to social psychologists who study the behaviour of the crowd. After all, a 'crowd' is nothing more than a local peculiarity of social space-time - "a large

number of people gathered together in a limited space". It is usually dangerous and risky to be in a crowd because the behaviour of the crowd is uncertain and unpredictable. *Globalisation processes are gradually transforming the societies of individual countries not so much into a "global society" as into a "global crowd"*. Therefore, there seems to be a legitimate need to develop some kind of concept for the protection of the individual in the form of an "ecology of the individual", which would aim to protect the individual from the negative effects of living in a fast-changing environment, in a crowd and an overly cross-linked and dense living environment.

### 3. Risk environment

The concept of risk is defined and understood differently depending on whether it is examined at the theoretical level, e.g. in psychology, ethics, the theory of cognition, or at the practical level depending on different forms of activity, e.g. engineering, political, economic, etc. In both cases, I understand risk as an objective uncertainty, i.e. an uncertainty independent of subjective conditions, which is inherent in the existence or functioning of anything that exists in a changing environment, especially in human activity. This concerns both the uncertainty of the course of action and change itself as well as the uncertainty of its results. Based on a dynamic or evolutionary ontology (Śmajs 2000), which assumes the dynamics of the world and constructs the image of the world not based on the fact of existence but of becoming, there can be no doubt that the *risk is constantly present in the world, and that it is universal and objective*.

Risk does not only pertain to people's lives and actions, to the subjective sphere, or individuals taking cognitive or causal actions. It is also present in the subject matter sphere, in the "extra-human world", which is usually referred to as the "objective world". Here, the measure of risk is the number of real possible events or phenomena that may occur, although they do not have to occur under given conditions. All ways of becoming, i.e. actualization of

virtual future states, as well as the very existence of anything in the sensory world, are inherently risky. For the existence of something necessarily goes hand in hand with the possibility of the existence of something else, as well as the possibility of non-existence. I therefore argue *that risk is as immanent an attribute of the sensory world as variability, time and space*. It is directly and inextricably linked to the volatility of the world and thus to space and time, to the transformations taking place in nature and society as a result of various interactions, to the uncertainty and natural indefiniteness of future states, phenomena and events. And since this is the case, *we are in a way condemned to live in a world that is inherently full of risk and therefore our life, existence and action must also be risky and hazardous*.

Risk is related to uncertainty about future environmental conditions. It differs from the uncertainty in that it is “based on knowledge of the probability of the initial (baseline) state”<sup>1</sup>.

Risk is a gradual property, however, it never assumes zero or infinity for systems belonging to the sensory world. As a result of the evolution and complexity of systems, the degree of risk is unlikely to decrease. On the contrary, it seems to increase with evolution. By analogy to thermodynamics where the “principle of increasing entropy” has been formulated, one might also formulate the “principle of increasing risk”: *the degree of risk never diminishes as the world evolves*.

The degree of risk is a function of many variables. Determining the degree of risk

depends on the overall knowledge of whatever it is that we want to evaluate.

However, there is no simple relationship between the state of knowledge and the degree of risk. Therefore, the role of science should not be overestimated and we should not believe that the degree of risk will decrease as a result of scientific progress. The well-known thought of Socrates is still valid, and it can also be interpreted in such a way that the more we know, the more blind men there are. After all, it is known that scientific knowledge is not based on unshakeable or infallible foundations. Its concepts and assumptions often refer to agreements existing among scientists at a particular stage of scientific development. Experience, to which science refers in the last instance as a verifier of hypotheses, is categorially shaped, sometimes deformed by subjective views, suppositions and prejudices and therefore prone to mistakes. During the experiment, unknown or misleading factors may occur. While experimentation and logic enable the correction of scientific knowledge over a longer period, we do not really know whether this correction mechanism leads to a continuous approach to the truth, or rather to an endless spiral of increasingly complex world models. In any case, there is one thing science cannot do: achieve absolute certainty. Thus, since scientific theories are neither definitively verifiable nor falsified by experience, all predictions and technologies based there on may be false or unverifiable, and in the case of technology, there is an additional risk of failure. When dealing with objects with non-linear or chaotic processes, predictions beyond a certain time horizon are highly risky or even impossible. Even when there is complete information on the baseline available. This is explained to be a result of the fact that the minimal, unmeasurable small random deviations of the quantities defining the present states of such systems may under certain conditions (in principle, unforeseeable) increase to such an extent that they will result in subsequent states completely different from those which are

<sup>1</sup> See [www.quality.de/lexikon/risiko](http://www.quality.de/lexikon/risiko). The following risks are listed therein: natural (e.g. earthquake, tornado, flood), technical (e.g. machine failure, lack of raw material), social (e.g. fluctuations, infidelity, consequences of motivation), personal (e.g. death, illness, accident), political (e.g. coup, nationalization, customs barrier), market (e.g. economic collapse, competition, inflation). It is also pointed out that, according to empirical studies, the risk increases with the growth of the dynamics and complexity of the environment, with the size of the company and with new developments in production. Many of these risks are adequately hedged, e.g. market risks can be reasonably countered by conscious risk management.



anticipated, probable or expected. Such a phenomenon is present in many fields of natural and social sciences. For example, even with the best meteorological techniques and knowledge, it is impossible to accurately predict the weather for two weeks, and forecasts made by social science experts did not predict the collapse of the Soviet Union in 1991 or the attack on the World Trade Center in New York in 2001. Likewise, it is impossible to predict the exact consequences of a possible nuclear war, no matter which of the known climatological models is used. We are also unable to fully predict the consequences of ecological disasters for the Earth's biosphere based on the theory of microbial evolution. In the same way, it is difficult to make reliable forecasts for future states of complex natural or social systems where the study of the effects of interactions between their components exceeds the possibilities of computer processing information.

In the case of isolated quantities or parameters and near-perfect linear processes, as is the case with simple, uncomplicated systems, the degree of risk can be calculated with a fairly high degree of accuracy using a measurement error calculation. However, the limit of the possibilities for quantum systems in this regard is determined by the Heisenberg uncertainty principles (single and double): the measurement uncertainty is at least in the order of Planck's constant.<sup>2</sup> In other cases, however, where complex systems with synergistic effects are involved, the degree of risk can be determined more by estimation or quality than by quantity. Quantitative determination of the degree of risk requires formalisation of the description, i.e. presentation using an appropriate mathematical model consisting of specific symbols and operators. It is still important to remember that a purely quantitative description is not a fully adequate description of reality. It tries to determine the degree of risk despite these problems. Otherwise, we would not be able to plan anything, "manage

risk," create conditions for minimising risks or create awareness of risks, and our actions would produce completely random and unexpected results. The ability to manage risk is extremely important as it is impossible to eliminate it from our lives or minimise the "riskiness" of our living environment. Since we have to live with risk, we not only have to get used to it, get accustomed to it and not demonise it but also learn to use it for practical purposes, i.e. to learn about the risk and the ability to *manage* it in the sense of, for example, quality management in an organisation or marketing.<sup>3</sup>

We usually use the concept of risk to refer to actions taken deliberately, i.e., to those that are meant to cause an intended or expected state of affairs, and to decisions or choices that will result in something we want in the future. In such cases, the concept of risk is rather related to the consequences or effects of actions, decisions and choices. Therefore, *it would seem that the risk is only future-oriented*. However, risks can also be related to past events or states, for example, when trying to determine the causes, because the causes are usually located in the past. Therefore, *risk is also past-oriented*. Discovering the causes and the associated risk of real and reliable cognition is important for both cognitive (acquiring knowledge) and practical (causative activity) purposes. Being aware of the causes and past states enables and facilitates the creation, anticipation and realization of future effects and states, and has a significant impact on the formation of our hopes and expectations, and thus on our ideas about the future. This is where history has a role to play. Science is just as powerless in knowing the past as it is in knowing the future. Therefore, acquiring historical knowledge of what was and futurological knowledge of what will be is connected with making mistakes and errors, and thus with risk. Just as we are unable to predict events that are too distant

<sup>2</sup> Commonly known are Heisenberg's "double" principles:  $\Delta x \cdot \Delta p \geq h$ ,  $\Delta E \cdot \Delta t \geq h$ , etc. Less known are the "single" principles:  $\Delta x > h$ ,  $\Delta t \geq h$ ,  $\Delta E \geq h$  etc.

<sup>3</sup> "Risk management" refers to taking action to reduce risk, with risk being understood in this context as insufficient information on how to achieve objectives. On risk management see (Starr 1987; Simons 1996).

in the future because evolution is an open and bifurcation process, we are also unable to find out exactly what happened in the too distant past. When referring to the too distant past and future, I mean the absolute past and the absolute future. There is a principle in since that says: one you can comment on those events or states that can be controlled by means of theoretical analysis or experience. And such events or states are essentially found in the “relative past” and “relative future”<sup>4</sup>

I distinguish between the concept of risk and “risk awareness”. I understand it to be a *subjective perception and feeling of objective indefiniteness and uncertainty of the course of phenomena and processes taking place in the world in a given situation and experiencing unreliability of actions and their effects* (Sztumski 1994).

Awareness of risk involves sensing a risk situation and addressing it appropriately. *The willingness to take risks, i.e. the ability to take uncertain actions and make uncertain choices and decisions whose success is neither predetermined nor certain, depends on the awareness of risk.* This relates to the attitude towards the unknown, uncertain, unspecified (undefined) and unintended consequences of human activity. A person who is aware of risks and ready to take on risky action or challenges does not avoid them, even if he or she is aware of the risks arising from uncertainty or possible failure. They do not avoid risk because they know that *risk cannot be fully avoided*. Such a person takes risky actions without taking into account the possibility

<sup>4</sup> The “relative future” and “relative past” together with “currentness”, i.e. what an individual is now experiencing (interacting with), are occurring during the individual’s lifetime. The “lifetime” of an individual is the period from birth to death. “Relative past” includes everything that an individual has experienced or could have experienced (i.e. come into interaction with), and the “relative future” includes what an individual can experience in his or her life. However, what an individual could not have experienced, interact with prior to his or her birth and what they will never be able to experience after his or her death, is situated in “absolute past” and “absolute future” of that individual, respectively.

of adverse effects. The willingness to take risks *depends* on many factors: the characteristics of a given person, the analysis and assessment of the degree of risk, the willingness to defend accepted ethical, ideological, religious or other values, the desire to impress with courage, the fear of losing authority, the fear of failure and disappointment, etc. Some increase the readiness to take risks, others weaken it. Willingness to take risks, like other personality traits, can and should be shaped through upbringing and education process. All the more so since we are often said to be living in a “risk society” (Beck 1992). The idea is not to be afraid of risk, but to learn how to overcome the fear thereof (since fear is a poor advisor for any activity), how to handle and master the risk in order to manage and benefit therefrom (Bonß 2002). However, this is generally done sporadically and randomly. This is because attitudes towards risk and adequate willingness to take risks are not pursued among the educational goals; schools are unlikely to prepare for life in a risk environment. As a result, there are many mental breakdowns, neuroses, stress and frustration in young students who feel clumsy and lost when they start their own lives and come into contact with the realities of their social environment. This gives rise to a lack of self-confidence, a sense of meaninglessness, passive submission to fate or an escape into illusion or irrationality (alcoholism or drug addiction). Young people are not being brought up to live in a world of risk, even though studies confirm that they can tolerate personal risk and that they live in a “risk society”, which they actually co-create.

#### 4. Risk of choice and decision

Awareness of the risks raises the problem of decision making. *Survival under the conditions of risk depends on making the right life decisions.* A decision is an act of intent on the part of an individual or collective entity, through which only one possibility to act or behave is chosen, namely that which appears to be the most appropriate

for various reasons. However, the decision makes sense when, having many alternative options to choose from, you do not know exactly what the consequences will be. Thus, decision-making requires some degree of uncertainty. In a world where everything would be strictly and unequivocally determined, where everything could be precisely predicted, the decision would simply be empty and the act of will would be replaced by a logical inference process or a mathematical operation. But neither logical reasoning nor solving a mathematical task are decisions, although they can sometimes help and facilitate decisions. However, in a world where there would be no natural order, no conditionality and no regularity at all, the decision would simply be powerless, because the actions it initiated would not be able to produce any of the expected or planned effects (Shackle 1961). Thus, decisions cannot take place either in a strictly determined world (in the sense of classical determinism) or in a completely disordered world (indeterministic). *A decision can only be made sensibly in a hazardous situation*, that is, a situation involving opportunities and uncertainties.

Individual and collective choices, whether made by people or anything else, are always accompanied by uncertainty as to the processes (actions) that we set in motion and their effects. Therefore, choices always can be risky. They are also risk-generating, as the processes (actions) that we initiate, and especially their effects, imply further risky situations with probably an increasingly high degree of risk. And because we constantly have to make risky choices in our lives, we are continuously exposed to unavoidable coincidences, mistakes, errors, disappointments, disasters and stress.

A decision is a function of factors related to the specific situation, such as knowledge, indefiniteness, risk, responsibility and interest. The relationship between a decision and each of the influencing factors mentioned above requires a separate study, which is why I will not be addressing them herein. It should also be noted that many decisions are made spontaneously and on an ad hoc

basis, as if “in the spur of a moment”, or - due to the increasingly faster pace of life - in an ever shorter time (in extreme cases, almost in a so-called “click-time”). They are made almost without the involvement of reason, rather subconsciously, using learned and memorised algorithms for thinking and behaving in a given situation, as if impulsively or “instinctively”, often without reckoning gains and losses. Conscious decisions based on all known factors, taking into account benefits, expectations and satisfaction, usually require longer consideration. When the pace of life is accelerating, we have less and less time for such consideration. The fast-changing context of life forces us to make increasingly quick and rushed decisions as life speeds up, in most cases ill-considered and unbalanced, and consequently spontaneous and “flimsy”, not always good, random, which can be largely erroneous or wrong. That is why, among other things, *the decisions we make are often misguided and also less responsible*.

Given the need to make decisions quickly and the limited possibility of assessing the consequences, it is necessary to rely on the belief that the decisions that we make are good. Thus, the decision is also based on faith in its appropriateness and effectiveness.

The world we live in is potentially diverse and multifaceted, and in reality, it is unique and one-off. In reality, i.e. physically, there is only one world, and all the others are (“exist”) only in the sphere of thoughts, dreams, images or expectations. Some of them may even be realistically possible. The reduction of the multitude of possible worlds to the only real world is achieved as a result of the necessary natural selections, choices and more or less conscious decisions, which force action to be taken accordingly. The choices we make and the spontaneous selection are like a screen that allows only one out of many possible worlds to move from the area of possible existence to the area of real existence (i.e. making it real). When this selection screen is made up of choices made by people, the intended and expected world becomes real. However, the world

that emerges as a result of a spontaneous (natural) selection usually does not correspond to our wishes and ideas. It seems that the higher the levels of evolution, the greater the discrepancy between the real and the expected world. Paradoxically, this is despite increasing knowledge of the processes taking place in nature and society.

We are well aware that the changing world as a whole and its components are not thoroughly known or unequivocally determined, only roughly and statistically, and that chaotic phenomena are becoming more frequent and large-scale. The current state of a dynamical system (the type of system that exists in the sensory world) does not clearly define its future states, even in the relatively short term, but forms the basis for several possible future states, indeed potential states, of which only one can be actualized, i.e. actually occur. Therefore, there is a possibility of many potential (or virtual) states and the need for the actualization of only one of them, by way of choice<sup>5</sup>.

This choice may sometimes be conscious when it is made by people (directly or indirectly), or it may be made spontaneously in accordance with the rules of selection, principles, laws of science, etc., which exist in nature regardless of our will. At the same time, the rules of selection apply everywhere, although they vary at different levels of the world's structure and for different types of systems. Each choice is associated with risk. Firstly, we do not always know exactly how to choose or what to consider when making the choice. There is a risk involved in making the wrong choice. And secondly, in the case of a choice that is not made by ourselves (for

<sup>5</sup> I use the word "virtual" in a different sense than computer science, where "virtual" applies to everything that is related to computers. In my understanding, "virtual" is that which is not real, but what can become real. (Meanwhile, the representation of something in the computer is in every case real, because it is perceived through the senses. The term "virtual" is therefore rather conventional here.) "Virtual" is different from "potential" because "virtual" is only what is realistically possible, what can be implemented or actualised in the light of existing scientific regularities or laws, social norms, bans, etc. "Potential" refers to everything that is possible.

example, in an inanimate nature), we generally do not know and are unable to predict which of the possible states will be chosen and thus actually occur. Therefore, in most cases, the choice is random.

Dynamical systems are characterized by the fact that they contain many possible future (virtual) states and can unfold in many directions. And the more evolved and (thus) complex the system, the more possible future states and directions it contains. In the case of very complex systems<sup>6</sup>, the evolution takes place according to the bifurcation model. Therefore, future states, possibilities and trends in the further development of such systems are either completely unpredictable or can be predicted with a low degree of probability, and even then generally for a not very long period, provided that the regularities, mechanisms and various external and internal conditions of development of the system are known. The degree of predictability decreases as changes in the parameters (their numerical values) by which the state of the system is described lose their linear or regular character, and as new factors and parameters to describe the system need to be taken into account.

We have a fairly good knowledge of psychology and sociology relating to the mechanisms of choices and decisions made by people. However, we know far less about how "spontaneous choices", i.e. natural selection in nature without the participation of people, are made, and why this particular state is chosen from among many alternative virtual states, and why the choice falls on different states under the same conditions. Many errors in anticipating situations in non-human nature are simply due to anthropocentrism, i.e. the belief that it follows (or should follow) the same rules in making choices as people. Thus, for example, it is believed that evolution "chooses" the best (optimal) or most sensible or "wise" or fair solutions, although in practice this is rarely

<sup>6</sup> Very complex systems ("ultra complex" or "super large"), such as living organisms and human communities, are usually assumed to contain no less than  $10^8$  elements. Only such systems are able to evolve and self-organise (Bepr 1976, 168-169).



the *case*. Uncertainty about future states, trends of change and course (development) directions, uncertainty about the results of actions that produce only one, it is not entirely clear which, of the alternative solutions and only one of the possible worlds - that is what falls within the concept of risk, although it does not exhaust its content or scope.

### 5. Survival measure: faith

As events evolve and become more complex, there is an increase in randomness, uncertainty and fortuitousness. Therefore, *as society evolves, the risk associated with life and survival increases, as random events and coincidences in the lives of individuals and communities play an increasingly important role*. As a result of evolution and progress in civilisation, the dynamics of the social environment, the variability and activity of social systems and people are increasing. This, in turn, increases the risk to people's lives and normal functioning. Many people perceive and experience contemporary social reality - both individually and collectively - as highly opaque, mysterious and therefore incomprehensible, sometimes senseless or even irrational. For this reason, there is a growing conviction that nowadays an individual is only slightly able to realistically shape the social environment according to his or her own (individual) ideas, expectations and wishes, and that the realization of life's goals is more a work of luck than a desire, ambition and systematic effort. This is confirmed by the numerous television competitions in which winning large amounts of money is a result of chance and requires only "luck" and not work or sound knowledge. The functioning of the market is also unclear, policies and economic mechanisms are not very transparent, etc. There is an "invisible hand" behind *everything and everything seems to be governed by the mysterious mafia or quasi-mafia systems: cliques, clans, gangs, etc.* Under such conditions, people's life paths become incomprehensible, indefinite, uncertain and risky. It appears to be a sequence of coincidences and lucky chances rather than a process that

is relatively well-determined, logically structured and certain. We are unable to point to any rational reasons why, for example, one person easily gets into university and graduates, gets a good job, achieves happiness in love, makes a professional career, has a successful family life, etc., while another fails to succeed despite great efforts, well-considered decisions, sound endeavours and systematic work. This is probably because people's life paths are only marginally marked out according to objective dynamic regularities, and if they are, it generally applies to trivial relationships and matters. For the most part, they are determined by statistical laws, coincidences and subjective factors, often irrational, resulting from "free" will, as well as by random events. The fate of a human being, the shape and course of his or her life path and the achievement of his or her goals are to a large extent influenced by the willingness to take on risky ventures, associated with overcoming the fear of uncertainty and indefiniteness that accompanies an awareness of risk.

We are aware that *we live in a world of risk and that our lives are shaped by risk*. Our very existence and our whole life are inextricably linked to risk, and progress in the fields of knowledge and technology not only does not exclude or limit risk, but, on the contrary, and even paradoxically, increases it. The importance of risks and the expansion of its impact are increasingly experienced and felt. Risk areas are expanding and the degree of risk in various life situations is rising. Risk is becoming an increasingly relevant component of our living environment. Firstly, the number of risky areas of life is increasing, and secondly, the risk in those areas increases. Therefore, the fight against risk seems to become the proverbial tilting at windmills: it is both pointless and ridiculous. No one can protect themselves or anyone else from risk or prevent it. And since this is the case, there is nothing left to do but to take into account the increase in the share of the risk factor in our dreams, expectations, undertakings, forecasts and plans. Therefore, it is necessary simply to integrate risk into pre-designed scenarios

for future events and to develop appropriate strategies for action, which should include possible alternatives prepared beforehand. Above all, we need to be mentally resilient in the face of radical changes and the collapse of our plans, and in the face of the fact that we may not achieve the goal, of unexpected failures, but also of unexpected successes. Consequently, various situations should be envisaged in which, in addition to what is desirable, expected, planned, highly probable, reasonable and enjoyable, there would also be a place for the unplanned, unlikely, unreasonable and unpleasant. Awareness of risk can be both “negative” and “positive”. The former contains an idea of the dangers and troubles arising from a possible failure of undertaken actions or from the adverse effects of the decisions that have been made. Negative awareness cripples us and makes us passive. We are afraid to do anything, as we may either fail or our actions could unintentionally backfire. The latter contains the possibility of succeeding, meeting expectations and the beneficial effects of decisions taken in uncertain or unlikely situations. It is based on the belief in success. Survival requires the formation and increased popularisation of positive risk awareness. Thus promoting confidence in one’s abilities and strength as well as trust in the decisions made by oneself or others. Positive risk awareness plays a more important role in people’s lives than negative awareness, because it gives us a positive attitude towards life and encourages optimism, and further strengthens our belief in survival in a world of uncertainty and danger. This is why it makes us more active, more courageous and mobilises us in our efforts to achieve our survival plans.

*The art of living in a world of risk requires, on the one hand, a quick and accurate assessment of the degree of risk and, on the other hand, faith in the possibility of avoiding risks, based primarily on factual premises and personal life experience. This assessment is influenced by subjective and objective, rational and irrational factors. It would seem that in the “knowledge society” the most important role should be played*

by objective and rational factors, but this is not the case. As civilisation progresses, we evolve into less rational beings (Sztumski 2003). When assessing the degree of risk, there is often an asymmetry or imbalance between reliable knowledge about risk in a given situation and subjective perception of risk, between actual (objective) threats and imagining those threats. The asymmetry of risk assessment also exists between the fear of taking risks and the anticipated benefits resulting therefrom.

Successive generations grew up in fear of risk and inherited a rather negative awareness of risk, compounded by education based on the cultural message of various myths. The fear of risk in modern civilisation is greatly affected by the constant repetition and emphasizing the news about environmental disasters, nuclear power plant breakdowns, mass contamination of foodstuffs, exceeding permitted concentration standards for harmful chemicals, acid rainfall, ozone holes, mass poisoning and pandemics and more recently about acts of terrorism. It seems as if the mass media are geared towards fearmongering. People have always been threatened with all kinds of objects: devils, witches, wolves, policemen etc. The upbringing was generally based on fear. Nowadays, however, fearmongering has intensified to the point where it has become a kind of trend and obsession of the media. Children are being scared by fairy tales watched on television, and young people by computer games with various “monsters”, and adults by horror movies. Fear has become a commodity that sells well and generates huge profits. Interestingly, there is a great demand for fear: people like to be scared, they like to watch all sorts of horrors and listen or read about “chilling events”. We are living under pressure from ever-greater imaginary threats. However, they tend to be smaller than the actual ones that we face in everyday life and that are simply not paid attention to. We believe, for example, that more risk and more potential threats are posed by the nuclear war imagined by strategists than by living in peace, although the number of deaths as a result of

hunger, local and ethnic wars, various accidents, assaults, acts of banditry and terrorism, etc. in times of peace has long ago exceeded the number of victims of the Second World War.

Some people believe that globalisation and sustainable development will make our lives more secure. However, this does not seem realistic as long as a liberal system and an economy of profit maximisation prevails. Both are the main drivers of globalisation. A liberal system is characterised by a high degree of individual freedom, reduced interaction and weakened social bonds. But at the same time, there is a low degree of safety and security. And the weaker the conditions and interactions and less determined social system, the poorer the guarantee of social security in many respects. Therefore, *the increase in freedom goes hand in hand with the increase in the risk of survival*. This is one of the fundamental internal contradictions of liberalism. Where liberalism and competition are involved, the strongest (not necessarily the most valuable) and ruthless (completely selfish) individuals survive. The ideal living environment should provide people with a balance between freedom, risk, security and certainty. That is the balance that can be provided by faith.

## Conclusions

The modern world is in chaos, and most situations are governed by chance, indefiniteness and uncertainty. Therefore, our lives are associated with a relatively high degree of risk, much higher than the lives of previous generations. This stems from the fact that there are increasingly more dangers in our living environment and their degree is rising. *Through evolution and the progress of civilisation, life and living environment are becoming increasingly risky and risk-generating*. This is directly due to the increase in complexity as a result of evolution, the bifurcation model of evolution and the unprecedented progress of civilisation. Besides, the increase in risks and threats is proportional to the rate of change in the environment. And there is no doubt that one of the important features of our living envi-

ronment is the increasing pace of change. Being aware of this fact forces us to take action to prepare for life in such conditions. Of course, where possible, risks and threats must be minimised. However, we are aware that we can only reduce known risks as we improve countermeasures through advances in knowledge and technology. Yet, evolution entails new and unknown situations and threats. As a result, only a small part of the risk can be reduced compared to the one increasing in the course of evolution. Therefore, the fight against risks and threats does not hold much hope for victory. That being the case, it is more appropriate for us to come to terms with it and to adapt accordingly to coexist with the risks and dangers. This raises an extremely important question for practical philosophy: "How to deal with this situation?"

Firstly, preparing for life in the modern living environment requires improving risk awareness and better shaping people's readiness to take risks, i.e. the ability to function in a high-risk living environment. Secondly, it requires faith in the ability to survive despite the growing risks and threats. For faith helps to overcome the fear of risk and reduce negative risk awareness. Therefore, the fight for survival, together with the fight against risk, should not only take place in the objective area - knowledge and technology - but also in the area of personality formation. Here, education plays a key role.

Hence the demand for educational institutions and systems to pay more attention to the issue of risk and to educate children on how they should live in a risky living environment. They should familiarise children with the risks and teach them how to handle and evaluate them. All the more so since people are generally incapable of assessing risks, thus avoiding risks that actually do not threaten them much, and are willing to take risks that objectively involve a high degree of danger. It is also found that we are less afraid of environmental risks than of social risks, that we tolerate risks taken by our own choice better than those imposed on us, that the less we know about risks, the more afraid we are of them, that we tolerate risks that

are manageable and that we are less afraid of risks that accumulate gradually than those that emerge suddenly (surprises us as an incidental disaster). When the probability of some serious threat is even minimal, people tend to over-expose it, while even the high probability of some risk is ignored because we believe that we are exceptional and that it affects us less than other people, or we delude ourselves into thinking that we can deal with it better than others (Müller, and Stapf 1999, 199-200; Schneier 2001, 250).

Studies support the hypothesis that the approval or disapproval of risk depends little on the objective degree of risk and that potential risks do not affect the observed human behaviour that results from risk awareness. Overwhelmingly, attitudes towards risk are unreasonable, and the resulting willingness to take risks manifests itself either in nonchalance and the associated "heroism" or in excessive cowardice and the accompanying fear of making any decisions and taking any actions. A rational attitude should be based on the premise that risk is an inherent attribute of the sensory world and the living environment. Adopting this attitude requires knowledge of the real potential of the threat in a given situation, i.e. knowledge of the objective risk. However, it would be an illusion to demand a rational attitude when it is known that people are not only rational, but also irrational, and especially emotional. Therefore, awareness of risk should be shaped by rational and irrational factors, including feelings and thinking in terms of faith, myth and magic (Litwiniszyn 1998). It is only a matter of maintaining the right proportions, that is to say, a dynamic balance between them. Subjective rationality and emotionality superimpose on the objective background, which, in the macro-social dimension, is the general level of culture and knowledge, and in the micro-social dimension, the local "cultural niche" in which the individual lives.

Upbringing in a high-risk environment cannot be done without reference to faith or trust, and, above all, without self-confidence and trust in wise people. And for peo-

ple who believe in God, religious faith is also very important here. We have found that the modern living environment is highly insecure and dangerous, with no sustainable support and no clear directives of conduct for the entire global population. It is an arena of fierce and even brutal competition ("rat fight") in all areas of social life. Living in such an environment provides a legitimate argument to believe no one or in nothing. Nevertheless, the progressive decline of faith is pushing humanity towards self-destruction. Are we to give in to this process passively or should we still fight for survival? Instinct commands us to fight, although reason shows little chance of success. What should we then follow: a self-preservation instinct or reason-based pessimism? In my opinion, we should strive to be guided by what lies between instinct and mind, i.e. reason. If so, then the emotional sphere, which lies within reason alongside the rational sphere and is also the sphere where faith is paramount, must be restored to its significant importance. Above all, faith helps to overcome the fear of risk and reduces negative risk awareness.<sup>7</sup> It thus stimulates activity and fosters optimism, because it is the foundation of hope for the survival of the individual and the human species. Even if this hope cannot be verified. However, one usually believes in what cannot be experienced in any way.

In difficult life situations, faith equips people with the strength to survive, makes them extremely strong and resistant. In principle, it does not matter whether it is about faith in deities and supernatural forces, in the people who surround us and can help us, or, finally, in the belief that we will manage to avoid misfortune and get out of trouble unharmed. *Generally, everyone believes in something in the broadest sense of the word*, although there are those who, alternatively, do not believe either in God or in others, in ideas, or, finally, in themselves. However, the worst form of lack of faith is the lack of faith in survival.

<sup>7</sup> Pope John Paul II was right to recently call on the worshippers to overcome fear and make efforts to change the world for the better with the words "Do not be afraid!"



Anyone who has lost that faith is passively submitting to the course of matters does not take action to survive, falls into apathy and fear of failure or ends in suicide. Such a person usually has little chance of survival, although some people manage to do so despite inaction and lack of commitment.

In my opinion, the decline of faith – no matter how it is understood and whatever its form is – is the cause of the disintegration of social systems, the destruction (degradation) of the social environment, the senselessness of life and existence. Moreover, loss of faith gives rise to alienation and associated attitudes of xenophobia, aversion and hostility.

If faith is a fairly well-proven (in the centuries-long historical experience of mankind) means of survival, it should become an object of care and protection as one of the essential components of the environment of life – the cultural and spiritual environment – because of the desire for life and the survival instinct of both individuals and humanity. There can therefore be no doubt that it should become the subject of a sui generis ecology – the *ecology of faith*.

## Bibliography

- Angel, Hans-Ferdinand, and Andreas Krauss. 2004. "Der interdisziplinäre Gott." *Gehirn & Geist: das Magazin für Psychologie und Hirnforschung* 4: 68-72.
- Beck, Ulrich. 1992. *Risk Society: Towards a New Modernity*. London: Sage.
- Берг, Аксель Иванович. 1976. *Управление, информация, интеллект*. Москва: Издательство Наука. (Berg, Akseľ Ivanovich. 1976. *Upravleniye, informatsiya, intellekt*. Moskva: Izdatel'stvo Nauka).
- Bonß, Wolfgang. 2002. "Riskantes Wissen? Zur Rolle der Wissenschaft in der Risikogesellschaft." In *Gut zu Wissen. Links zur Weltgesellschaft*, Hrsg. Heinrich-Böll-Stiftung, 114-130. Münster: Westfälisches Dampfboot.
- Boyer, Pascal. 2004. *Und Mensch schuf Gott*. Stuttgart: Klett-Cotta Verlag.
- Gaschler, Katja, und Carsten Könneker. 2002. "Die Kopflastigkeit der Religion." *Gehirn & Geist: das Magazin für Psychologie und Hirnforschung* 2: 14-17.
- Kutschera, Franz von. 2002. "Vom Himmel gefallen." *Gehirn & Geist: das Magazin für Psychologie und Hirnforschung* 4: 56-61.
- Latil, Pierre de. 1958. *Sztuczne myślenie. Wstęp do cybernetyki*. Warszawa: Polskie Wydawnictwo Techniczne.
- Litwiniszyn, Aldona. 1998. *Magia magii*. Kraków: Drukrol.
- Müller, Günter, und Kurt-Herrmann Stapf. 1999. *Mehrseitige Sicherheit in der Kommunikationstechnik*. Bonn: Addison-Wesley-Longman.
- Schneier, Bruce. 2001. *Secrets & Lies - Digital Security in a Networked World*. New York: Wiley.
- Shackle, George L. S. 1961. *Decision, Order & Time in Human Affairs*. Cambridge: Cambridge University Press.
- Simons, Katerine V. 1996. "Value and Risk? New Approach to Risk Management." *New England Economic Review* 5: 3-14.
- Šmajš, Josef. 2000. *Drama evoluće. Fragment Evolncni ontologie*. Praha: Hynek.
- Starr, Chauncey. 1987. "Risk Management Assessment and Risk Acceptability." *Risk Analysis* 5(2): 97-102.
- Sztumski, Wiesław. 1994. „Rzyzko i świadość rzyzka." *Spółczeństwo a rzyzko*, red. Lech Zacher, i Andrzej Kiepas, 10-19. Warszawa - Katowice: Wydawnictwo Transformacje.
- Sztumski, Wiesław. 2003. "Are We Really More Rational?" *World Affairs - The Journal of International Issues* 7(3): 84-96.
- Wojciechowski, Jerzy A. 2001. *Ecology of Knowledge*. Washington, D.C: The Council for Research in Values and Philosophy.