



MAKSIM SHMELOV/SHUTTERSTOCK

NEO-BARBARISM UPON US?

Remarks on the chronology
of stages
in scientific development.



Prof. Leszek Zasztowt

is a historian, a former director of the PAS Institute for the History of Science, and a Professor at the Centre for East European Studies, University of Warsaw. He specializes in the study of the history of Central and Eastern Europe and Russia in the eighteenth to twentieth centuries, including the history of science and scientific contacts. He has authored several monographs and edited collective publications, including *Historia nauki polskiej 1945–1989* [History of Polish Science 1945–1989], vol. X: Parts I–III (2015, together with Joanna Schiller-Walicka). He has served as the Co-Chair of the Commission of Historians of Poland and Russia (since 2007). The incumbent Chairman of the PAS Committee on History of Science and Technology, President of the Józef Mianowski Fund – the Foundation for the Promotion of Science (since 2010), and Vice-President of the Warsaw Scientific Society (since 2020). zasztowtles@gmail.com

Leszek Zasztowt

Centre for East European Studies
Faculty of Oriental Studies
University of Warsaw

Marxism, which was among the dominant intellectual currents of the twentieth century, accustomed many of us in Eastern Europe to dividing human history up into traditional eras, using criteria generally based on the nature of human relations, especially economic ties: the pre-historic era (primitive communism) was followed by antiquity (slavery), next by the Middle Ages (feudalism), then by the early modern period. The late modern / contemporary times, in turn, were seen as divided into a period of capitalism, followed by the time of socialism and communism. The latter were held up – at least in the Eastern bloc – as the crowning achievement of human development. The division

into historical eras thus overlapped with classifications based on types of economic relations, namely primitive communism, slavery, feudalism, capitalism, and finally communism.

The legacy of the past

This traditional division of historical periods was also employed to define the stages of development of science. We still continue to talk about science in antiquity (Greek, Hellenistic, and Roman science), about medieval science, Renaissance science, and Enlightenment-era science. At the same time, other terms taken from general history are also widely applied to the history of science, such as romanticism and positivism. Interestingly, our Eurocentric approach forgets about other cultures to such an extent that although we are aware of the amazing achievements of Arab science in the Middle Ages and the incredible and even older accomplishments of Chinese science, none of those non-European cultures are actually reflected in the European classifications. Consequently, our previous framework, adopted to characterize the eras of human

ACADEMIA PART III The Current Threats

development, was dominated by European political and economic divisions dating from the nineteenth century.

It turned out, however, that neither socialism nor the never-truly-realized communism actually became the final stages in the development of human civilization. Therefore, capitalism returned to being considered the “most perfect” stage. Not everyone knows that this is probably because socialism proved itself to be viable in just one country, namely Sweden, while communism has never been implemented in its full form in any place in the world. Capitalism, on the other hand, raised the prosperity of many countries, especially in Western Europe and on the Northern Hemisphere. However, the growing dislike for the word “capitalism” (which we owe mainly to Marx and the communists, who copied him ineptly) shifted the focus from economic matters to – above all – the political organization of this system. As a result of those negative connotations, people were less likely to talk about capitalism as such and instead more frequently discussed Western parliamentary democracy or liberal

however, himself soon withdrew from his original idea. This is because it turned out that humanity was indeed very capable of creating new social solutions that refuted the idea that we had entered such a final stage.

The Anthropocene

It likewise came to be noticed that, over the past 200 years or so, humans have disrupted the Earth’s environment to such an extent that we in fact need to define a new epoch – a period in which the planet has become thoroughly dominated by humans, with a decisive role being played by their impact on the natural environment and the entire biosphere. The name given to this epoch is the “Anthropocene” – the human epoch. The Anthropocene, in turn, can be broken down into “sub-epochs.” Importantly, some geologists consider it to be the most recent stage within the Holocene, the youngest and ongoing epoch, which started about 11,500 years before present (in geology, the present time means 1950).

On the other hand, various scholars, especially those in the social sciences and humanities, are describing the present time as a “post-liberal” era. Sometimes, we can also encounter the notion of neoliberalism as a system glorifying capitalism and representing the apotheosis of the free market. Just as the Renaissance broke with the Middle Ages, seeking instead the restoration of the ideals of antiquity, the post-liberal era in a sense departs from the liberalism of the previous period.

The term “post-liberalism” appears understandable and useful to describe this situation, including in the context of the history of science. On the one hand, it entails – as mentioned earlier – a departure from the classical concepts of liberalism. On the other hand, it may mean the abandonment of liberalism in general, or a complete withdrawal from any liberal concepts and ideas. The latter option is more conspicuous and definitely more popular. The term “post-liberalism” carries negative connotations, which result from disillusionment with liberalism. In science, however, it has limited significance, because what matters most in science is precisely the freedom of research.

The same holds true of the term “neoliberalism.” It also has negative connotations, but these are related to a greater extent to the adoption of certain liberal assumptions of a philosophical, economic, and social nature, to the exploitation and manipulation of people to accumulate or maintain wealth. In the human sciences, neoliberalism functions within the scope of management theory, among other fields.

However, if we look at the present stage of development from the perspective of the characteristics that played a dominant role in a specific period, we could notice certain regularities that were already evident

Humans have disrupted the Earth’s environment to such a great extent that we need to define a new era: the Anthropocene.

society, which was soon replaced by the term “civil society.” Therefore, science came to be viewed as being divided into “capitalist science” or “socialist science” (at least until the late 1980s). Scholars on either side of the Iron Curtain responded to this with understandable doubts or, at the very least, with sarcastic and indulging smiles.

Without analyzing whether those classifications were right or wrong, we should note that already in the nineteenth century and later, especially in the second half of the twentieth century, attempts were made to posit new divisions. That period saw the emergence of dichotomous terms, which emphasized the changes in development resulting from advances in science and technology, among other things. The division into pre- and postindustrial eras gained popularity, with the turning point for those eras coming in the nineteenth century. It witnessed technological advances and numerous discoveries and inventions in many fields, which were considered a phenomenon that also changed the face of science. Examples include the theory of evolution and Darwinism.

On the other hand, slogans such as “the end of history” appeared in the context of liberal society being regarded as the final stage of social development. The author of this particular concept (Francis Fukuyama),

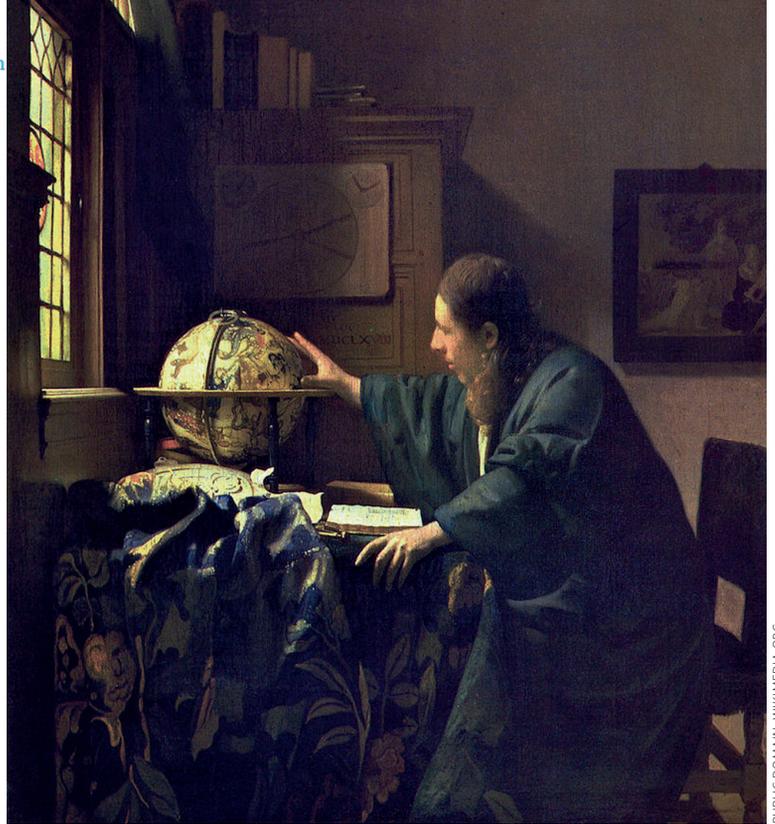
in previous eras and may help us to find a different solution in the present. Indeed, this does not undermine any of the above-mentioned terms that define new times.

Important characteristics of previous eras include the notions of advancement and regression – which distinguished individual eras from one another at different times and to different degrees. If we adopt the classifications present in the history of art and literature, the Middle Ages, which followed antiquity, could be described as an era of regression. After the Middle Ages, synonymous with backwardness and ignorance (at least in the stereotypical view, since the medieval era also had its “renaissances,” such as the Carolingian Renaissance), the Renaissance came as a period of rebirth and flourishing in human development. In the early modern era, according to the categories used in the history of literature and art, the Renaissance was followed by the Baroque, considered to be a period of returning of mysticism, spiritism, and belief in the supernatural, even though this was also when European science started to rise to new heights. In the history of science, the seventeenth century is regarded as the beginning of modern science. The Enlightenment marked a further return to rationalism and sober thinking, to the study of phenomena in an experimental manner, and to the abandonment of the reliance on feelings and divine inspiration. But the Enlightenment was followed by Romanticism, mystical and primarily guided by feelings. Positivism later moved away from romantic sentimentality and towards science, especially the exact and natural sciences (scientism). However, it was succeeded by modernism, which could be described as a neo-romanticism and another return to faith in the supernatural and revelation.

Likewise, it was denied that progress provided the basis for prosperity and successful development of humanity. In the conservative approach, the primary value is the preservation of traditions and old and “better” ideals – in this view, progress may pose, and indeed poses, a serious threat.

The role of science

In fact, much of at least the second half of the nineteenth century and the whole of the twentieth century were a period of the absolute dominance of science and belief in science. This happened independently of trends in literature and arts, in economics and sociology. Those worlds functioned in a sense on their own and without links to the interpretation that was current in the exact sciences. Neither existentialism, nor expressionism, nor abstraction and formism in art affected the general – rational – assessment of reality based on certain assumptions present in science at that time. Similarly (though conversely), economics and sociology (and the human sciences in general) were



PUBLIC DOMAIN, WIKIMEDIA.ORG

nonetheless believed to provide some scientific basis for interpreting the world and reality, at least in its social fabric. That was when such works as Gustave Le Bon’s seminal book *The Crowd: A Study of the Popular Mind* (1895) were written.

In the period of positivism, in the second half of the nineteenth century, great hopes were pinned on science and human knowledge was glorified in a special way. In some circles, science began to be regarded as equivalent to religion, as a domain of human activity that could successfully take the place of religion. It turned out that such a conviction, too, often entailed disastrous consequences. Half-baked theories on the fringes of science, especially in psychiatry, medicine, and the treatment of mental disorders, led to many horrible practices in the “field” of eugenics.

As experience and the history of humanity teach us, however, every age of reason is followed by an age of ignorance, characterized by a dearth of reason and actions that are not guided by common sense.

Twentieth-century rationalism, largely influenced by positivism (including neo-positivism), had to have its special culminating point, followed by a return to sentimentality, emotions, and disbelief – including in science. This means that we must be about to enter a new Middle Ages, or a new barbaric stage of development – a new barbaric era (*neobarbaricum*). What will be the place of science in this new era?

Neo-barbarism

In this ongoing debate, I wish to popularize the term “neo-barbarism,” harking back to the history of ancient Rome. The Romans saw themselves as the keepers of high culture and advanced civilization, in opposition to the onslaught of barbarism, the unrefined culture of the barbarians – who as we remember, ultimately

Johannes Vermeer,
The Astronomer
(ca. 1668)

ACADĒMIA PART III The Current Threats



PUBLIC DOMAIN, WIKIMEDIA.ORG

Joseph-Noël Sylvestre,
*Sack of Rome by
 the Visigoths on
 24 August 410* (1890)

managed to overrun that glorious city. The proposed term “neo-barbarism” appears more fortuitous here than a potential alternative, “new Middle Ages”: tempting as it is, the latter would presuppose the existence of some universally accepted ideal (such as Christianity) that might serve as a kind of cement holding together all aspects of the new era. In reality, there is no ideological and cultural binding force in the form of a single prevailing religion or philosophy, even if some form of shared ideology does exist.

Also, it should be noted that the term “neo-barbarism” already has some currency. In 2015, it was used in an article that Mark Garavan, an Irish sociologist deeply interested in human-ecological relations, posted on his blog. There he argued perversely that neo-liberalism had evolved into neo-barbarism, and the main goal of the latter consists in “controlling the very mechanisms of thought, primarily in the media and education.”

From the perspective of human behavior, the current epoch can be therefore defined as *neobarbaricum tempora* – new barbaric times. Let us now try to list its most striking and evident characteristics. First of all, although the current epoch has little in common with traditional religion or philosophy in the existing sense, it does nevertheless appear to have its own distinct philosophy of sorts, with its own set of tenets and principles.

Central themes of neo-barbarism

The main characteristic of the epoch of new barbarism is the belief that despite all the various advances made in science, we have nevertheless been unable to get at the truth, including the absolute truth sought by philosophers, and so we must assume that no absolute truth exists. Such an assumption changes everything about how humanity has so far approached our earthly affairs. Besides, it also violently rejects and departs from traditional religion, which has its own ethics and, above all, harbors the belief that absolute truth exists, and that such truth means God.

Since absolute truth cannot be gotten at or reached, today’s heralds of the new barbaric era conclude that what we are interested in is not truth, but merely power. In other words, what matters is not whether our claims accurately reflect the truth, but rather, how many other people come to believe in them. This is the underlying assumption of the now popular social-engineering methods, regarded as science-based ways of influencing society. For this reason, the ultimate outcome of our actions involves not reaching any truth, but merely attaining and holding onto political power. Consequently, the question of whether what we claim is true or false is not relevant, or even taken into consideration. It now becomes perfectly clear that this assumption stands in stark conflict with the principles of science, which always seeks to get to the very bottom of whatever it studies.

A question of power

In this respect, the heralds of *neobarbaricum* are extremely rational, and so is their quasi-philosophy or ideology. Their main and only goal is to attain and hold onto political power using any and all means. Consequently, people in power or those who aspire to rise to power use limitless methods to convince people that their arguments are correct (while in fact the game is not really about the strength of arguments at all, but about real power). There are no boundaries on one’s actions, stemming from religion, morality, philosophical and ethical beliefs, and so on. Rather, the objective is to defeat one’s opponents and gain power – not to prove to anyone that there is any real absolute truth, only to persuade them that we are the ones who are in the right.

Post-truth

A certain concept has been developed that is extremely useful in this debate: the concept of “post-truth,” as opposed to truth, with “fake news” as one of its offshoots. Viewed in this way, the main characteristic of the new barbaric era is the manipulation of people without any constraints stemming from morality, integrity, and religious or agnostic ethics. In simple terms, we can say that, like in Niccolò Machiavelli’s treatise *The Prince*, attaining and holding onto power is an end that justifies all means. We are interested not in truth, but only in power. This has already impacted significantly on the situation of science and scientific research, where, as we have said, the primary goal has always been to get to the bottom of things, to uncover the truth.

Importantly, the worst misfortune associated with the post-truth concept is that there is not actually any such thing as a “post-truth.” Rather, post-truth simply refers to falsehoods and untruths, presented as if they were true (or: just as true as anything else). The very word “post-truth” dangerously softens and hides, or masks, the fact that what we are talking about are simply lies. In literary terms, we could add: disgusting lies used deliberately to spread disinformation.

Fake news and post-truth have a long tradition in history. In ancient times, however, they were used to create certain false artifacts to lend credibility to the power people gained, privileges they held, and lands and properties they seized – and sometimes also to turn others into targets of negative sentiment. In the study of history, such false sources were called *apocrypha* (from the Greek for hidden, secret). Although the term was associated with non-canonical scriptures, it was used in pre-Christian antiquity to describe sources of dubious or uncertain origin. There were plenty of such apocrypha, and they also existed in science. Perhaps the best-known apocryphal text to this day is the famous *Protocols of the Elders of Zion*, a hoax created by the political police in Tzarist Russia, the Okhrana, to stoke up resentment against the Jews.

In today’s world, the Internet is a special platform for the transmission of information in an almost unlimited manner, so fake news stories (modern-day apocrypha) can be spread and replicated in unlimited quantities and forms. Such activity results in disinformation, which is now a widespread phenomenon.

Scientific theories and the manipulation of society

Importantly, this situation was also fostered by the growing popularity of various theories that are false but not completely unfounded, that do have a certain and often important context and scientific underpinnings resulting from, or referring to, various math-

ematical solutions, especially those based on basic probability theory and game theory. We could also list here disaster theory, Laplace’s analytical theory of probability (holding that nature and its laws can be described using certain mathematical solutions), determinism (if A, then B), chaos theory (everything is chaotic, there are no rules; chaos breeds more chaos), and the butterfly effect, a neatly formulated theory demonstrating that seemingly irrelevant and unrelated phenomena, regardless of where they happen, may trigger incalculable effects, including catastrophes.

All these theories, along with my favorite – “black swan theory,” posited by Nassim Nicholas Taleb, an American economist of Lebanese origin – have served to reinforce the general belief that impossible things are possible after all. In a word, questioning the truths previously regarded as absolute became in a sense the main motivation for scientific inquiry, not only in the social sciences.

In his theory, which was popular a few years ago, Taleb argues that humans are unable to predict certain kinds of events simply because it is commonly believed that such things cannot happen. But when they do nevertheless happen, theories get formulated

Unrestricted manipulation of people has become a key characteristic of the new barbaric era.

after the fact to explain these events. The term “black swan” here reflects the fact that in the Middle Ages people did not believe that black swans existed, and yet they do exist, although they are very rare and not as common as white swans.

Taleb’s theory refers back to a concept developed by Thomas S. Kuhn in the 1960s. Kuhn argued that progress in science was achieved through scientific revolutions in defiance of the traditional accumulation of information. His concept assumes that information accumulation expands our knowledge and understanding of the world (as described in his book *The Structure of Scientific Revolutions*). According to Kuhn, science changes through scientific revolutions, which introduce a new vision of the world. A scientific revolution is followed by a paradigm shift and the introduction of new interpretations. Examples of such revolutions include the Copernican Revolution, Charles Darwin’s theory of evolution, Albert Einstein’s theory of relativity, and quantum physics.

Studies into the unpredictability of events led to the development of certain techniques that may facilitate the management of large groups of people in what are

ACADEMIA PART III The Current Threats

called unstable systems – ones in which it is impossible to determine all the elements that influence a given situation or when at least one element is indeterminate. (Incidentally, unstable systems are studied in a field known as continuous-time control theory.)

Let us assume the following: if we believe that the world is governed by chaos, then it would be useful to develop a method for managing it, for example in the form of a theory. If the world is governed by the principles of catastrophe theory, then it would be useful to create a method for managing those catastrophes, or at least for managing people during the threat of cataclysmic events. If it is true that the world is governed by revolutions (or at least they occur cyclically) and each period of stability is followed by an inevitable upheaval, then it would be worth developing a theory about how such periods should be predicted and how people should be managed once a revolution starts.

In short, social scientists began to formulate new theories by drawing extensively on economic, natural, and mathematical sciences. And despite expecta-

to eliminate the old threats. On the contrary, they have made those threats stronger, expanded them on an unprecedented scale, and spread new fictions.

Fake news is nowadays used in unlimited ways. It is frightening that fake news is used not only in good faith, or to fight against the deliberate misleading of people, but above all in bad faith, or when someone cares not about the truth, but only about getting people to believe him or her, not others. Truth is needed, surely but on the other hand, the truth must also always be on my side – or so the logic goes.

All these things could be treated examples of human idiocy, human folly. This phenomenon could be explained in a relatively banal way. We simply have so much information that it is no longer under our control. So we begin to believe even the most ridiculous news if someone or something convinces us that it reflects the absolute truth. An excellent example is the currently popular concept of “information noise,” which can end up undermining the credibility of almost any piece of information.

The new humanities and populism

The end of the twentieth century was characterized by postmodernism. Now, we often talk about post-postmodernism in literature and in the arts. This minimalist philosophy assumes that it is not possible to establish, for example, the truthfulness of particular sources, because sources are always being processed via the historians’ own views, knowledge, and beliefs. Consequently, we are always only dealing with an approximation of the truth, and never with its reconstruction. When it comes to science, postmodernism was based on the assumption that all sources and all methods of studying them are acceptable. Formulating whole new general theories to explain the world was not only allowed, but even recommended. In this way, postmodernism made its own small contribution to the development of theoretical inquiry characterized by a great deal of leeway and the freedom to make methodological and theoretical assumptions.

What are the implications of this for politics, for contemporary society, and for our interpretation of the past? Does this situation also affect the shape of today’s scientific research?

Disappointment with the old morality and longstanding ethical principles have resulted in the emergence of populist, or people-oriented, groups and politicians in world politics. However, it would be a mistake to think that this populism is somehow aimed at improving the collective social situation.

What does it involve, then? Promising people whatever they want most, so that the people making these promises can attain and hold onto power.

Technological progress and science have failed to eliminate the old threats. On the contrary, they have made those threats stronger, expanded them on an unprecedented scale, and spread new fictions.

tions to the contrary, those theories came to be put into practice almost immediately. It quickly became apparent that they could have practical importance for the management of people in various situations: emergencies, democratic elections, political crises, and social revolutions.

Superstitions and prejudices in the world of information technology

So what has happened (in the twentieth century and the times in which we live)? In spite of amazing advances in technology and science, humans are now just as susceptible to all sorts of superstitions and unfounded beliefs as they were back in the barbaric period and in the proverbial Middle Ages. The old superstitions have remained, and new obsessions (such as conspiracy theories) have also emerged, although the methods of their dissemination changed quite a bit. Technological progress and science have failed



FRAN_KIE/SHUTTERSTOCK.COM

These things may include a bigger childcare allowance from the government, additional pension benefits, tax cuts, lower bills, better health, appreciation of difficult living conditions, and a higher minimum wage. But them may also involve directing public resentment against foreigners, outgroupers, emigrants, refugees, people with preferences other than the dominant ones in society (such as members of the LGBT+ community), Jews, Arabs, Kurds, and people from the Caucasus region (this never gets old). Against people who are different in any respect: the lame, blind, stupid, disabled, the “pseudo-elites.” The pseudo-elites are the most vulnerable to attacks as they are not precisely defined (we do not really know who belongs to this group), and everyone envies them all their wealth and power (if they have neither, this does not change anything – the pseudo-elites are certainly bad, and we should remember that university professors are also pseudo-elites!). Briefly put, all the oldest human faults – such as xenophobia, racism, jealousy of other people’s status, education, and wealth, envy, and perception of others as the source of one’s own misfortune or poverty – have not only resurfaced, just as they did in previous eras, but are now also being deliberately exploited by populist politicians. It is impossible to resist an analogy between this situation and the early days of

fascism in Italy under Benito Mussolini and the Third Reich under Adolf Hitler. Back then, all these faults of human nature were also being harnessed in order to pull society together and instill a universal hatred of the purported enemy.

Unfortunately, these policies and such populist propaganda have enjoyed scientific and technological support both from private companies and from governmental bodies – including not just authoritarian regimes but also parliamentary groups in democratic systems.

Such phenomena as Cambridge Analytica (CA) in the UK, Internet troll farms in the Russian Federation, and government use of Pegasus spyware (in countries including Poland, as it turns out) are the realities of modern politics in times of burgeoning populism and attempts to control society. Simultaneously, it has become clear that even democratic governments use IT tools to control their own societies, as demonstrated by the story of Edward Snowden.

In this new epoch of the Anthropocene and its present sub-epoch, which here we have been calling the time of “neo-barbarism,” is it possible to temper the all-pervasive power of the propaganda and social engineering techniques used to manage and manipulate society?

ACADEMIA PART III The Current Threats



CASTLESKI/SHUTTERSTOCK.COM

In my opinion, the only solution may involve returning to the traditional ideals of humanism and treating democracy and its open political system in a very thorough and literal way. Not giving in to easy slogans and seemingly obvious solutions, and above all, feeling obliged to keep a careful and watchful eye on those who wield power and those running for office.

Science is now more important than ever

Scientific research has always been based in an indisputable way on the freedom of research, on the autonomy of universities and scientific institutions, and on the independence of academia from government institutions. Ensuring the latter appears to be the most difficult, given that state research needs to be financed chiefly from public funds. The current situation also entails additional tasks incumbent upon the scholarly community, academies of sciences, and scientific societies. In addition to fulfilling their traditional role, which involves drawing together top-level academics, they are forced to take positions and speak out on important political and social issues. In Poland, good examples include the Interdisciplinary COVID-19 Advisory Team to the President of the Polish Academy of Sciences.

It is also worth remembering that today's world is experiencing a number of processes that cannot be considered favorable or positive – and this applies not only to Poland, Europe, and Russia, but above all to the United States. On the one hand, environmental threats (the greenhouse effect) could soon bring humanity to the brink of vast tragedy. On the other, there are widening disparities between a small group of rich individuals and countries vs. a growing group of poor people and countries that are only becoming poorer. This widening economic disparity poses the greatest danger to modern times, one that is equal in force to the environmental threat. In the past, such situations

have triggered disasters, wars, and revolutions, claiming millions of lives.

And so what can be done by an average person who lives in the early 2020s?

Most importantly, we must continually strive to distinguish between true and false information. We must not let others manipulate us. In particular, however, we must pursue the values and ideals that have been crucially important for humanity as a whole – and also for each individual human. Examples include solidarity, empathy, sensitivity to the situations and problems of others, and the rejection of prejudice and bias. But the most important thing is to maintain and promote the conviction that a single, indisputable truth is indeed out there somewhere. We may never fully understand it, never actually arrive at the absolute truth, but we must strive to draw ever closer to it, while continually checking if we have been exposed to lies disguised as truth, if we are being manipulated by the system or by others. In this era of neo-barbarism, people should be especially vigilant so that they cannot be easily misled. In a word, the greatest virtue lies in questioning all unproven facts and opinions. “I doubt, therefore I am” – one way of understanding René Descartes's *cogito ergo sum* – returns with redoubled energy and significance.

Undoubtedly, tolerance is an important virtue to cultivate. We should bear in mind, though, that it is a value that in its extreme form can result in misfortune. According to Karl Popper's famous paradox of tolerance, a tolerant society can become the victim of the intolerance of others, and its freedoms can be restricted by others. Popper stressed: “We should therefore claim, in the name of tolerance, the right not to tolerate the intolerant.”

In order not to end on such a pessimistic note, we should stress that groundbreaking eras have always resulted in the birth of new, positive phenomena, not just tragedies and misfortunes. We could refer here to the excellent book *Barbarzyńska Europa* [Barbarian Europe], authored by the recently deceased Prof. Karol Modzelewski. In it, he argued that although barbarians destroyed the traditional Roman civilization, they also took a lot from it and even enriched it with new laws and new solutions, which we still make use of today.

Let us hope that in the Anthropocene – and its current sub-epoch of neo-barbarism – humanity manages to learn some positive lessons from this situation that will allow us to survive, to persevere. Perhaps we will again revisit formerly cherished ideals, or perhaps we will opt for completely new solutions. One thing appears indisputable: integrity in science and the professionalization of scientific research can be and are extremely helpful in the struggle against populism and fake news. And so perhaps it is indeed in science, in research freedom, that the very last hope of humanity now lies? ■

Further reading:

- Crutzen P.J. (2006). The “Anthropocene.” In: Ehlers E., Krafft T. (eds.) *Earth System Science in the Anthropocene*. Springer. https://doi.org/10.1007/3-540-26590-2_3
- Fukuyama F., (1992). *The End of History and the Last Man*. Free Press.
- Fukuyama F., (2014). *Political Order and Political Decay: From the Industrial Revolution to the Present Day*. Farrar, Straus and Giroux.
- Garavan M., (June 26, 2015). *From neo-liberalism to neo-barbarism*, <https://markgar.wordpress.com/2015/06/26/from-neo-liberalism-to-neo-barbarism/>.
- Gray J., (1993). *Postliberalism: Studies in Political Thought*. Routledge.
- Kuhn T.S., (1962). *Structure of Scientific Revolutions*. Chicago.
- Modzelewski K., (2011). *Barbarzyńska Europa* [Barbarian Europe], Warsaw.
- Pinker S., (2018). *Enlightenment Now: The Case for Reason, Science, Humanism, and Progress*, Lawrance.
- Popper K. (2012). *The Open Society and Its Enemies*, Vol. I: *The Spell of Plato*. Routledge.
- Taleb N., (2007). *Black Swan: The Impact of the Highly Improbable*. Random House
- Williams M., Haywood A., Ellis M., (2011). The Anthropocene: A new Epoch of Geological Time?, *Philosophical Transactions of the Royal Society*, 369A.
- Zalasiewicz J., Will S., Crutzen P.J., McNeill J.R., (2007). *The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?*, *AMBIO: A Journal of the Human Environment*, 36.