

## EDITORIAL

### *Global and local challenges of the interaction of natural and human sciences*

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Ethical aspects of development and application of new technologies in the context of seemingly omnipresent globalization processes as well as numerous global and local challenges of the interaction of natural and human sciences present both a daunting challenge and an enticing opportunity. In fact, the challenge becomes the opportunity when researchers in the academia embrace the idea of always being in search of not only the ‘facts’ and ‘truths’ about this material world but also of a deeper wisdom related to the question: ‘how do we thrive (not merely survive) in this complex and ever-changing world?’.

Thriving in the environment of unforeseen technologies and fast-paced lifestyles of globalized human communities entails our being intentionally focused on promoting an interdisciplinary approach to ethical questions that arise in relation to contemporary scientific research and the application of its results (especially in the area of natural and technical sciences) in the lives of individuals and societies. Scholars across disciplines (natural and technical sciences, as well as social sciences and humanities) need to explore the intricate connections and interdependences of scientific disciplines, real life scenarios, and ethical challenges that we face as humans in our globalized world. To make this endeavour viable, a rich variety of the participating scientific disciplines, diversity of methodological approaches and perspectives, as well as openness to new solutions must be employed.

This is what most authors of the articles published in EJST have been trying to do generally, and in this issue in particular. None of the authors would argue against the general hope that Science has significant potential to make human life safer, healthier, more comfortable and overall more enjoyable. However, bad science (i.e., scientific frauds and malpractices) as well as good advances in Science in the hands of bad people (researchers, politicians, military leaders, etc.) bring destruction and chaos. Thus, it is legitimate to ask questions concerning the applicability of ethical criteria on original scientific research and its subsequent implementation in the world of new technologies and innovations. We may agree with Professor Hajko that the “following questions have proved to be uniquely legitimate: Is such socio-ethical management (and guidance) of science at all possible and if so, in what shape and form? Isn’t it bound to negatively limit the freedom of scientific endeavour? What is the correlation between this freedom and the social or humanistic responsibility of science and scientists? Related to these, among other things, are also the issues of ethical

self-regulation of science. Is a strictly ethical self-regulation of science possible at all?" [1] Special attention should be paid to the possibilities and limits of socio-ethical management of research pertaining directly to humans (such as the human genome or human embryos). Research that is potentially harmful to human individuals, communities, or the natural environment, should either be put on hold or done with care and at a very slow pace in order to provide enough time for critical analyses of short-term and long-term effects. For this to happen, however, another aspect of scientific research may need to be explored first: the question of motivation. What motivates scientists to burden themselves with moral issues or adverse social and environmental implications of their research? Are there any particular narratives, schools of thought, competing visions of reality or paradigms that promote such motives? Are there institutions established to provide an external impetus for scholars and scientists to keep these questions on their radar screens, so to speak? What kind of regulatory mechanisms can be or should be put in place to deal with the 'rogue scientists' who decide to push these issues aside and do science in spite of the foreseeable detrimental consequences?

More and more scientists, even those from the area of natural sciences, realize today that there is no such thing as an ethically neutral science or scientific research. As Professor Luby pointed out at a recent conference related to this topic (Zilina, 2016), "Today we re-evaluate the traditional view that scientific work and technologies are impartial (ethically neutral) and only their application, for which the society and politicians hold responsibility, should be reviewed from the perspective of morality. Science and technology become direct objects of ethical reflection. This is reinforced by the fact that a scientist usually cannot put self-imposed limits on his scientific work in order to eliminate its possible negative consequences." [2] Science always has ethical connotations, moral underpinnings that must be taken into account for Science to achieve its full potential and purpose – that of advancing human knowledge and helping humans live more fulfilled life in sustainable ways within the existing ecosystems and social environments.

Authors in this issue would gravitate to the position that it was precisely a certain set of values which constituted a specific 'ethos' that had eventually given rise to a 'scientifically curious spirit', free to explore the world of the natural environment as well as the world of the human psyche and social interactions. This ethos of freedom embraced nature as a gift and a work of art that needs to be appreciated, not only analysed. There is more to Science than numbers and detached observations. It is rather a way of life, a way of 'seeing' and 'perceiving' reality around us that does not divest nature of its beauty; that does not strip human life of its poetic beauty and mystery; that searches for a purpose behind our curious minds.

It is crucial to emphasize and re-emphasize these complementary aspects of human scientific endeavours to confront what appears to be a new ideology spreading across the higher academia, the ideology of 'scientism'. As a relatively recent phenomenon in history, 'Scientism' is a bold yet

unsubstantiated conviction that natural science (and much of the modern science along with it) is the sole reliable source of knowledge, the only true knowledge in fact. This reductionist vision of reality claims that anything that cannot be directly verified or falsified by scientific methodology, does not constitute ‘real knowledge’, and should ultimately be discarded. Such an *a priori* assumption, however, does not constitute scientific knowledge but is rather an unrecognized reflection of a scientist’s fundamental bias toward an exclusively materialistic account of reality. It is not a scientific but rather a metaphysical statement that can be neither verified nor falsified by scientific methodology. We should ever be mindful of Thomas Kuhn’s incisive ideas about the power of one’s metanarrative framework to influence how one thinks and conducts his research. If it is true that the metanarrative framework within which we exercise our epistemological activities determines much of their methodology, scope, and general character, including the nature and content of ensuing ethical deliberations – then we should set out to critically examine such metanarrative frameworks and the ensuing presuppositions we hold true (uncritically).

The authors of the individual articles in this issue “aspire to deal with the mentioned (and many other) problems, offering theoretic reflections within truly wide, multidisciplinary relationships, with one unequivocal goal – to create space for a rich dialogue at the end of which we might perhaps get a glimpse of a new model of the world, respecting the endeavours and needs of a radically changing globalized human society” [1, p. 6]. Most of them actively participated in conferences held around this topic recently, most notably the international scientific conference held at the University of Zilina in Zilina, Slovakia, on September 21-23, 2017 titled: ‘Global and Local Challenges of the Interaction of Natural and Human Sciences’. The conference was organized within the scientifically renowned series of conferences under the heading ‘Physics, Technology, Ethics’ as the 12<sup>th</sup> annual event of the series by the Faculty of Humanities, University of Žilina in Žilina and the Faculty of Arts, Constantine the Philosopher University in Nitra and their partners. The academically and intellectually stimulating environment of the conference contributed to a further development of the topic and provided a stimulus for further research and scholarly interactions.

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## **References**

- [1] D. Hajko, *Foreword*, in *Physics, Technology, Ethics: Ethical Aspects of Development and Application of New Technologies in the Context of Globalization Processes*, EDIS. University of Zilina in Zilina, Zilina, 2016, 5.
- [2] S. Luby, *Foreword (II)*, in *Physics, Technology, Ethics: Ethical Aspects of Development and Application of New Technologies in the Context of Globalization Processes*, EDIS. University of Zilina in Zilina, Zilina, 2016, 9.