

Iulian Boldea, Dumitru-Mircea Buda (Editors)

CONVERGENT DISCOURSES. Exploring the Contexts of Communication

Arhipelag XXI Press, Tîrgu Mureş, 2016

ISBN: 978-606-8624-17-4

THEORETICAL CONSIDERATIONS ON THE ETHICAL ACCEPTABILITY OF THE TECHNOLOGICAL DEVELOPMENT

Mihaela Boboc; Roxana Ionela Achiricesei

PhD Student; PhD Student – "Ștefan cel Mare" University of Suceava

Abstract: The industrial revolution, the scientific and technological development - to the level of genetic manipulation, nanotechnologies and neurotechnologies - brings today's society in the face of unprecedented ethical challenges. The impact and the consequences of the technological development have become an issue of significant political, social and scientific importance since the sixties¹. And the assumption that the technological development provides social and human progress is no longer supported², thus the ambivalence of technology has become a topic of public, philosophical and scientific interest³.

The debates on this theme should appeal to philosophy, moral philosophy, ethical principles that should be observed and to the acquiring of responsibilities regarding the use of technologies. But how can we integrate ethics in technological development?

Studies have given us the answer by developing an ethical checklist of the development and use of the new technologies.

Keywords : the technological evaluation, the ethical evaluation of technologies, ethical implications, ethical acceptability, responsibility

Introduction

The paper proposes an exposure of the conflicts, the implications and the reflections generated by the technological progress. This progress has shaped the today's industrial society, a society that is in a position to find a solution to problems caused by itself. Because, „as we all know, technology can do harm by using it wrong , or by using technologies which are inherently harmful”⁴.

In the first part of the paper the need for ethics and morals in the use of technologies was argued.

¹Armin Grunwald, Technology assessment or ethics of technology? Reflections on technology development between social sciences and philosophy, Ethical Perspect. 6 (2) (1999) 171–182 (p. 176).

²Ibidem

³Care Mitcham, Thinking through Technology: The Path between Engineering and Philosophy. London.(1994)

⁴Mario Bunge, Știință și filozofie, Editura politică.(1984)p 420

Iulian Boldea, Dumitru-Mircea Buda (Editors)

CONVERGENT DISCOURSES. Exploring the Contexts of Communication

Arhipelag XXI Press, Tîrgu Mureş, 2016

ISBN: 978-606-8624-17-4

The second part presents the threats and the issues generated by the use of technologies. These issues which may have implications on the people's fundamental rights, for example, like the right to life, the right to spiritual and cultural development, the right to privacy or the right to enjoy the same resources as their predecessors.

All these moral implications have drew concerns about the prevention and relief of negative effects. Thus, the last part presents possible solutions to control technologies. Studies argue that an early assessment of technologies could avoid some adverse effects, or, at least, the potential threats could become known.

The completion of the technological assessment with the ethical assessment of technologies seemed to be, up until the present, the best method of control technologies. As the philosopher Bunge states: „Technology must be kept under control and not be allowed to develop without limits in the interests of any group who can afford it.”⁵. And how can we control better the technological development if not by appealing to the ethics and the moral responsibility? It is not possible that the ethical acceptability of technologies be a guarantee that it is used for the human development and evolution?

Ethical foundations

„Ethics is philosophy in the best sense of the word: a philosophy that attempts by the reflection upon the good to establish the place and role of the human being in the sensible world”⁶. Ethics has the status of moral philosophy, a status that is owed to Socrates. We can also owe to Socrates the distinction between theoretical and practical philosophy⁷ „Philosophy becomes practical because the knowledge by the human being of his moral needs is conditional on his moral self-realization, of the right and correct behavior.”⁸. The purpose of ethics is to cause an ethical conduct that does not diverge, regardless of the situation, from virtues such as justice, truth, kindness, honesty, good. "Ethics doesn't teach us directly what should happen here and now in a given situation, but what should generally be done. Etica gives us a general basis, an overall basis of which the actual fact can be viewed objectively”⁹.

In a society characterized by a rapid pace of the technological development and an unprecedented thirst for knowledge, the ethical approaches are essential. The ethical approaches inform and sensitize the society on fundamental values like freedom, solidarity, tolerance and common responsibility¹⁰. Also, ”ethics managed through truths of great

⁵Idem p 421

⁶ Sorin Tudor Maxim, *Peripatethice*, Ed. Qim, Iaşi (2010). p 111

⁷ Ioan Grigoraş, *Probleme de etică*, Ed. Universităţii, Al. I.Cuza”, Iaşi, (1999).p 4

⁸Ibidem

⁹Citat din N. Hartmann de Ioan Grigoraş în cartea *Probleme de etică*, Ed. Universităţii, Al. I.Cuza”, Iaşi, (1999).p 21

¹⁰Mary Rundle and Chris Conley, *Ethical Implications of Emerging Technologies: A Survey*, UNESCO, (2007).

Iulian Boldea, Dumitru-Mircea Buda (Editors)

CONVERGENT DISCOURSES. Exploring the Contexts of Communication

Arhipelag XXI Press, Tîrgu Mureş, 2016

ISBN: 978-606-8624-17-4

theoretical value to focus the sublimation of moral energies toward the moral elevation of man and underlining the importance of moral education”¹¹.

We could state that the approach to technologies makes man responsible for his actions. Today, more than ever, it takes a set of ethical principles to sensitize the society so that the human actions aim at the social welfare, „a welfare that can be reflected upon the cultural, economic, psychological, spiritual, social level and in terms of the natural environment”¹².

„A fair balance between people” and between people and the environment should be found¹³, how else if not using the ethical principles? Our actions and „our judgments should be based on moral principles”¹⁴. „A first consequence of this is the social awareness of the need to always submit the progress of the scientific knowledge and the increased powers of the technique to systematic judgements of moral value; so, the bioethics, the business ethics, the environmental ethics, the technoethics have occurred precisely because of this need,¹⁵. But „the ethics of technologies is a complicated subject”¹⁶ as well as controversial.

Issues and threats of the technological development

Egbert Schuurman argues that, especially now that technology has global character, it takes discernment when it comes to the phenomenon of emerging technologies. Because most times, people are „fascinated and interested in modern technologies”¹⁷ that they forget to consider the negative consequences of this phenomenon or rather "its possible devastating consequences”¹⁸. It is enough to take the example of the nuclear energy and to think about the devastating consequences on mankind of the Chernobyl and Fukushima plants.

However, the issues and threats of modern technologies do not stop to the nuclear power. The modern technology will leave its mark on society, culture and the environment. The final result will translate in a dependence upon technology, because it will turn into a ”world-embracing system”¹⁹. The modern technology begins to penetrate the culture and the culture will become dependent on technology; this dependency connected with the economy will provide to culture a one-dimensional character²⁰. Moreover, the human development becomes one-sided and society begins to disintegrate²¹.

¹¹ Ioan Grigoraş, Probleme de etică, Ed. Universităţii, Al. I.Cuza”, Iaşi, (1999), p 2

¹² Lee M.Stapleton and Guy D.Garrod, Policy Preceding Possibility? Examining Headline Composite Sustainability Indicators in the United Kingdom, Social Indicators Research, (2008)87:495–502

¹³ Adrian Miroiu, Teorii ale dreptăţii, Ed. Alternative, Bucureşti (1996) p 76

¹⁴ Adrian Miroiu, Etica aplicată, Ed. Alternative, Bucureşti, (1995) p 7

¹⁵ Sorin Tudor Maxim, Peripatethice, Ed. Qim, Iaşi (2010) p 24

¹⁶ Mary Rundle and Chris Conley, Ethical Implications of Emerging Technologies: A Survey, UNESCO, (2007).

¹⁷ Egbert Schuurman, Responsible Ethics for Global Technology, (Netherlands: Axiomathes 2010) 20:107-127.

¹⁸ Ibidem

¹⁹ Ibidem

²⁰ Egbert Schuurman, Responsible Ethics for Global Technology, (Netherlands: Axiomathes 2010) 20:107-127.

²¹ Ibidem

Iulian Boldea, Dumitru-Mircea Buda (Editors)

CONVERGENT DISCOURSES. Exploring the Contexts of Communication

Arhipelag XXI Press, Tîrgu Mureş, 2016

ISBN: 978-606-8624-17-4

It is not difficult to notice that the technological development threatens the environment, and therefore the natural resources. The increase of the living standards (due mostly to the technological development) begins to put pressure on the natural resources which leads to the "exhaustion of raw materials needed to produce energy, the extinction of many species of plants and animals, the loss of the usable arable land and the loss of woodlands"²². This will further generate other consequences upon the climate, and life in general.

Amongst the main threats that are increasingly discussed today globally there is the ozone depletion and the increase of the greenhouse gas emissions and the reduction of the biodiversity^{23,24}. Then there are the increased threats arising from the genetic manipulation techniques techniques, the emergence of nanotechnology, and neurotechnologies respectively. These technologies provide us the opportunity to create "new bodies, new environments and even new minds"²⁵.

We cannot forget when it comes to technological development the communication technologies which in recent years have had a rapid pace of development. Although they allow communication without limits and geographical barriers, the new communication technologies can negatively impact upon the human relationships, affecting the "face to face" communication and bringing "a mutual alienation, loneliness and social disintegration"²⁶.

These are questions to which we should reflect taking into account social, economic and environmental indicators, but above all indicators which are based upon moral and ethical principles. This is because most times the acceptance of a new technology is guided by the cost / benefice assessment or worse by "the desire of control and power"²⁷.

Or, such an approach ignores the moral values, values that can not be converted into monetary values²⁸. Is it obvious to all technologists that the use of new technologies should also be acceptable in terms of ethics? If we think that moral values are now little used in assessing the sustainability of technologies, it is possible to find technologists and technologies deprived of ethics.

Then, it is increasingly evident that "the emergence of a variety of new technologies should arouse a sense of responsibility and an ethical thought"²⁹, before the technology comes to dominate and control nature and society (if not it already does!).

²²Ibidem

²³ Antoine Bouët et al., Modeling the global trade and environmental impacts of biofuel policies. IFPRI discussion paper 01018. The International Food Policy Research Institute (IFPRI), 2010.

²⁴Elizabeth Cushion et al., Bioenergy development: Issues and impacts for poverty and natural resource management. Washington, DC: The International Bank for Reconstruction and Development/The World Bank, 2010.

²⁵ James H. Moor, Why we need better ethics for emerging technologies, *Ethics and Information Technology* (2005) 7:111–119

²⁶ Egbert Schuurman, Responsible Ethics for Global Technology, (Netherlands:Axiomathes 2010) 20:107-127.

²⁷Ibidem

²⁸ James H. Moor, Why we need better ethics for emerging technologies, *Ethics and Information Technology* (2005) 7:111–119

²⁹ Ibidem

Iulian Boldea, Dumitru-Mircea Buda (Editors)

CONVERGENT DISCOURSES. Exploring the Contexts of Communication

Arhipelag XXI Press, Tîrgu Mureş, 2016

ISBN: 978-606-8624-17-4

The need for ethical foundations in the technological field is more than necessary, because today most "discussions regarding the ethics of technologies are limited to precautions and risk reduction"³⁰. Or, the use technology involves issues exceeding the limit of the material, leading perhaps to a cultural and spiritual destructuring of the human being.

The need for an ethical acceptability of technologies

It is increasingly evident that the technological progress has a significant social impact³¹ and that is a source of conflict and ethical issues³², while responsibility becomes complicated as the technology becomes complex³³.

The ethical issues cause by the technological evolution have not left without an echo. Recent studies point to the need to involve ethical principles in technology assessment.

The term *technology assessment* was first used in 1966 by Philip Yeager³⁴ but the concerns for the ethical evaluation of technologies are more recent. So far little research has focused on the study of the ethics of emerging technologies³⁵, (the ethical evaluation of emerging technologies requires the reflection upon what is good and what is bad in their use³⁶).

But the involvement of ethics in the technological process seems to be a necessity. The ethics acceptability of the new technologies could be a safety / warranty of the responsibility of all the elements involved. But how can one analyze the ethical acceptability of technologies? One may argue that, precisely, the ethical evaluation of technologies reflects upon these questions.

Today, beginning from the technology assessment, significant studies (e.g. Palm and Hansson in 2006 - *The case for ethical technology assessment (eTA)*; respectively Brey in 2012 - *Anticipatory Ethics for Emerging Technologies*) addresses the issue of the ethical evaluation of technologies, trying to develop a technology ethics checklist. Among the few researchers who have tried to integrate ethical principles in the evaluation process there is Günther Ropohl³⁷.

³⁰ Egbert Schuurman, Responsible Ethics for Global Technology, (Netherlands:Axiomathes 2010) 20:107-127.

³¹ James H. Moor, Why we need better ethics for emerging technologies, Ethics and Information Technology (2005) 7:111–119

³² Jozef Keulartz et al., Ethics in Technological Culture: A Programmatic Proposal for a Pragmatist Approach, Science, Technology, & Human Values,(2004) 29: 3-29

³³ Hans Lenk, Ethics of responsibilities distributions in a technological culture, Journal of Knowledge, Culture and Communication,(2015) 31:1-13

³⁴ Elin Palm and Sven Ove Hansson, The case for ethical technology assessment (eTA), Technological Forecasting & Social Change 73 (2006) 543–558

³⁵ Philip A.E. Brey, Anticipatory Ethics for Emerging Technologies, Nanoethics (2012) 6:1–13

³⁶ Ibidem

³⁷ Elin Palm and Sven Ove Hansson, The case for ethical technology assessment (eTA), Technological Forecasting & Social Change 73 (2006) 543–558

Iulian Boldea, Dumitru-Mircea Buda (Editors)

CONVERGENT DISCOURSES. Exploring the Contexts of Communication

Arhipelag XXI Press, Tîrgu Mureş, 2016

ISBN: 978-606-8624-17-4

Although the need for an ethical approach is increasingly obvious, they are researchers who consider that such an approach is not a "panacea".

For example, Armin Grunwald recognizes that the development of technology needs ethical reflection, but also emphasizes that ethics is not *a heal-all*³⁸. The same author believes that „ethics has become a fashionable concept and that it is perceived as a guarantee of social acceptability and sustainability of new technologies”³⁹.

Although it seems to be a delicate and controversial subject, the ethics involvement in the process can only bring benefits because the development and the use of technologies generates negative effects on society and generating damages, violating rights and affecting individual and collective welfare.

Palm and Hansson (2006) identify a list of ethical implications resulting from the use of new technologies.

They are as follows:

1. Privacy
2. Sustainability
3. Control issues
4. Influence and power
5. Issues of gender, minority and justice

To this list Brey (2012) adds ethical implications related to:

1. Autonomy
2. Human dignity
3. Consentment
4. Distributive justice.

The translating of these issues in a technologies ethics checklist will be a real help in designing technologies „so that moral challenges can be avoided, moreover, it can be used as the basis for making decisions concerning the acceptance of technology”⁴⁰, or can be a support for an appropriate legislative framework.

The checklist can serve as an early warning and, at the same time, it emphasizes the need for an assessment of the technological development in an early stage⁴¹, moreover it identifies the main features of technologies likely to have a negative impact on values and morals⁴², and on society as a whole.

³⁸Armin Grunwald, Technology assessment or ethics of technology? Reflections on technology development between socialsciences and philosophy, *Ethical Perspect.* 6 (2) (1999) 171–182 (p. 176).

³⁹ Armin Grunwald, Against over-estimating the role of ethics in technology development, *Sci. Eng. Ethics* 6 (2) (2000), 181–196.

⁴⁰ Elin Palm and Sven Ove Hansson, The case for ethical technology assessment (eTA), *Technological Forecasting & Social Change* 73 (2006) 543–558

⁴¹Ibidem

⁴² Philip A.E. Brey, Anticipatory Ethics for Emerging Technologies, *Nanoethics* (2012) 6:1–13

Iulian Boldea, Dumitru-Mircea Buda (Editors)

CONVERGENT DISCOURSES. Exploring the Contexts of Communication

Arhipelag XXI Press, Tîrgu Mureş, 2016

ISBN: 978-606-8624-17-4

We believe that the ethical acceptability of new technologies depends on the extent to which the requirements of ethical presented in such a checklist are met.

With the support of the possible ethical implications of new technologies, Brey (2012) proposes the following ethical checklist:

Table 1 The anticipatory technology ethics checklist

<p>1. Harms and risks</p> <ul style="list-style-type: none"> ○ Health and bodily harm ○ Pain and suffering ○ Psychological harm ○ Harm to human capabilities ○ Environmental harm ○ Harms to society 	<p>2. Rights</p> <ul style="list-style-type: none"> ○ Freedom <ul style="list-style-type: none"> - Freedom of movement - Freedom of speech and expression - Freedom of assembly ○ Autonomy <ul style="list-style-type: none"> - Ability to think one's own thoughts and form one's own opinions - Ability to make one's own choices - Responsibility and accountability - Informed consent ○ Human dignity ○ Privacy <ul style="list-style-type: none"> - Information privacy - Bodily privacy - Relational privacy ○ Property <ul style="list-style-type: none"> - Right to property - Intellectual property rights ○ Other basic human rights as specified in human rights declarations (e.g., to life, to have a fair trial, to vote, to receive an education, to pursue happiness, to seek asylum, to engage in peaceful protest, to practice one's religion, to work for anyone, to have a family, etc.) ○ Animal rights and animal welfare
<p>3. Justice (distributive)</p> <ul style="list-style-type: none"> ○ Just distribution of primary goods, capabilities, risks and 	<p>4. Well-being and the common good</p>

Iulian Boldea, Dumitru-Mircea Buda (Editors)

CONVERGENT DISCOURSES. Exploring the Contexts of Communication

Arhipelag XXI Press, Tîrgu Mureş, 2016

ISBN: 978-606-8624-17-4

<p>hazards</p> <ul style="list-style-type: none"> ○ Nondiscrimination and equal treatment relative to age, gender, sexual orientation, social class, race, ethnicity, religion, disability, etc. ○ North–south justice ○ Intergenerational justice ○ Social inclusion 	<ul style="list-style-type: none"> ○ Supportive of happiness, health, knowledge, wisdom, virtue, friendship, trust, achievement, desire-fulfillment, and transcendent meaning ○ Supportive of vital social institutions and structures ○ Supportive of democracy and democratic institutions ○ Supportive of culture and cultural diversity
---	---

Source: Philip A.E. Brey, Anticipatory Ethics for Emerging Technologies, *Nanoethics* (2012) 6:1–13

All these categories of ethical issues can be regarded as indicators of the ethical acceptability of new technologies. The observing and fulfilling thereof together with the social sustainability indicators provide a better assessment of new technologies, and they especially anticipate and prevent adverse or even devastating effects upon humanity.

The ethical approaches will help the decision-makers to make warnings about future threats and about the implications of unforeseen consequences on the use of new technologies⁴³.

Such an approach on technology requires „the cooperation among ethicists, scientists, technologists”⁴⁴; a „Collaboration between engineers and ethicists”⁴⁵.

Conclusions

We could state that the technological advancement is no longer regarded with so much enthusiasm. The consequences on society (which are reflected on the cultural, economic, psychological, spiritual, social and environmental level), attract criticism from different fields. Since the possibility that the use of sustainable technologies may not be sustainable but even to affect the welfare and even life is quite high. The implications on the individual can have destructive effects, leading right up to the cultural and spiritual deconstruction of the human being.

Thus, the economists, ecologists, ethicists and researchers should examine and reflect on the issues originating in the technological process. Apparently, however, it seems that the

⁴³Rainer Paslack et al., *Etica Mediului*, Carte realizată în cadrul proiectului Leonardo da Vinci nr. 2008-1-TR-LEO05-03203, Bucureşti, 2010.

⁴⁴James H. Moor, Why we need better ethics for emerging technologies, *Ethics and Information Technology* (2005) 7:111–119

⁴⁵ Philip A.E. Brey, Anticipatory Ethics for Emerging Technologies, *Nanoethics* (2012) 6:1–13

Iulian Boldea, Dumitru-Mircea Buda (Editors)

CONVERGENT DISCOURSES. Exploring the Contexts of Communication

Arhipelag XXI Press, Tîrgu Mureş, 2016

ISBN: 978-606-8624-17-4

consequences have not gone unnoticed, and thus arises the concept of technology assessment (in the 1960s), followed by ethical assessment of technologies.

Such an approach of technologies could empower the stakeholders involved and could be a real support in decision-making; it can also be a basis for an appropriate legislative framework.

It would also empower the technologist in his actions, and perhaps it would provide the guarantee that technologies are developed in the benefit of mankind, helping it to evolve and develop.

Bibliography

1. Adrian Miroiu, *Etica Aplicată*, Ed. Alternative, Bucureşti (1995)
2. Adrian Miroiu, *Teorii ale dreptăţii*, Ed. Alternative, Bucureşti (1996)
3. Antoine Bouët et al., *Modeling the global trade and environmental impacts of biofuel policies*. IFPRI discussion paper 01018. The International Food Policy Research Institute (IFPRI), 2010.
4. Armin Grunwald, *Against over-estimating the role of ethics in technology development*, *Science and Engineering Ethics* 6 (2) (2000), 181–196.
5. Armin Grunwald, *Technology assessment or ethics of technology? Reflections on technology development between social sciences and philosophy*, *Ethical Perspect.* 6 (2) (1999) 171–182
6. Care Mitcham, *Thinking through Technology: The Path between Engineering and Philosophy*. London.(1994)
7. Egbert Schuurman, *Responsible Ethics for Global Technology*, *Netherlands:Axiomathes* (2010) 20:107-127.
8. Elin Palm and Sven Ove Hansson, *The case for ethical technology assessment (eTA)*, *Technological Forecasting & Social Change* 73 (2006) 543–558
9. Elizabeth Cushion et al., *Bioenergy development: Issues and impacts for poverty and natural resource management*. Washington, DC: The International Bank for Reconstruction and Development/The World Bank, 2010.
10. Hans Lenk, *Ethics of responsibilities distributions in a technological culture*, *Journal of Knowledge, Culture and Communication*,(2015) 31:1-13
11. Ioan Grigoraş, *Probleme de etică*, Ed. Universităţii,, Al. I.Cuza”, Iaşi, (1999).CARTE
12. James H. Moor, *Why we need better ethics for emerging technologies*, *Ethics and Information Technology* (2005) 7:111–119

Iulian Boldea, Dumitru-Mircea Buda (Editors)

CONVERGENT DISCOURSES. Exploring the Contexts of Communication

Arhipelag XXI Press, Tîrgu Mureș, 2016

ISBN: 978-606-8624-17-4

13. Jozef Keulartz et al., Ethics in Technological Culture: A Programmatic Proposal for a Pragmatist Approach, *Science, Technology, & Human Values*,(2004) 29: 3-29
14. Lee M.Stapleton and Guy D.Garrod, Policy Preceding Possibility? Examining Headline Composite Sustainability Indicators in the United Kingdom, *Social Indicators Research*, (2008)87:495–502
15. Mario Bunge, 1984, *Știință și filozofie*, Editura politică,(1984)
16. Mary Rundle and Chris Conley, *Ethical Implications of Emerging Technologies: A Survey*, Paris : UNESCO, (2007).
17. Philip A.E. Brey, *Anticipatory Ethics for Emerging Technologies*, *Nanoethics* (2012) 6:1–13
18. Rainer Paslack R et al., *Etica Mediului*, Carte realizată în cadrul proiectului Leonardo da Vinci nr. 2008-1-TR-LEO05-03203, București, 2010.
19. Sorin Tudor Maxim, *Peripatethice*, Ed. Qim, Iași (2010)