CAN THERE BE A CONSTRUCTIVE ETHICAL ASPECT IN THE DEVELOPMENT OF NEW TECHNOLOGIES?

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Purpose: For the future of Europe it is important how its inhabitants can use data and new technologies. Artificial intelligence can make big changes in their lives, both positive and negative. Therefore, it must be thoroughly regulated and monitored.

Design/methodology/approach: One of the possible tools to achieve this in the widest possible range is qualitative research with a case study, which is part of the contribution.

Findings: To a small extent, moral fails are taken into account simultaneously with the development of new technologies, and therefore we recommend to put big emphasis on ethical issues right from the beginning of artificial intelligence research.

Social implications: In June 2023, the EU Parliament adopted a negotiating position on the Artificial Intelligence Act – the first comprehensive rules governing the risks associated with the artificial intelligence. According to EU members, the focus of the new rules should be on people and their quality of life.

Originality/value: A return to the moral aspects of artificial intelligence research, which should become an integral part of this research.

Keywords: applied ethics, artificial intelligence, ethical aspect of research, case study, health, quality of life.

1. Introduction

The implementation ambition of applied ethics is to enter the discourse on the latest innovative activities with an ethical point of view. The wide spectrum of the application of ethics offers us the possibility to specify problems and solutions in a complex portfolio of the current problems, to look for solutions for ethical support of intentions even in the field of new technologies.

We can agree with the founder of applied ethics, P. Singer, that "a moral judgment that is unusable in practice must also have some theoretical weakness, because the purpose of moral judgments is to show us the way in practical life". In principle, every person has the ability to distinguish between the good and the bad, but he is not always able to assess questionable and problematic situations without some preparation. This affects not only humans but also the programming and behavior of artificial intelligence. It is a challenge that needs to be responded to and discussed. In the intentions of our considerations, it is also necessary to develop the opinion that a new generation of IT experts is needed, who would be participants in the discourse on the ethical nature of problems and risks of new technologies, as well as in the creation of ethical mechanisms in this area. They already fulfill this important role in many other areas (medicine, scientific projects, academic institutions, environmental studies, etc.). It turned out that many problems are not visible at first glance or do not sound like that in the initial stages.

In principle, it is necessary that, even in this environment, the development and design of these tools respect the requirement of ethical caution and consideration of risks. It is not an acceptable trend that we first develop technologies and only then think about their possible impacts or risks.

2. Ethics and new technologies – main trends and problems

The ambition to respond to the current problems was demonstrated by ethics also in relation to the information technology. Similar to other applied ethics, a new type of professional discourse was presented in connection with the progress of information technologies as well as the solution of urgent ethical problems in the given field. Although the beginnings are associated with the work of Don Parker (Communications of the ACM, 1968, pp. 198-201), its narrower application-ethical presentation is presented 20 years later by Robert Hauptman and Rafael Capurro with their article "Information Ethos and Information Ethics" (Froehlych, 1988). Later, Deborah Johnson (Johnson, 1985) clarifies the role and mission of computer ethics, linking it to the analysis of new moral problems and dilemmas and the effort to solve them in new ways. The views of T.W. Bynum (Bynum, 1997) deserve attention in connection with the development and establishment of information ethics in this context, which defines the preference of information ethics in relation to computer ethics. The overall goal is to integrate information technology and human values in such a way that technology supports and protects human values, rather than harming them. The term "information ethics" is gradually becoming a generally accepted term for the field of applied ethics. Gradually, the discourse acquires a relatively wide spectrum of specific problem areas. Such problems as, for example, specific questions of information technology in relation to the cultural-value environment (Janoš, 1993;

Capurro, 2000), macroethical and microethical approach to information technology (Capurro, 2000; Buchanan, Henderson, 2009; Steinerová, 2014), the question of the moral agent and moral act (Floridi, 2008) and so on.

In recent years, a number of initiatives have been created that focused on the issue of the ethics of artificial intelligence AI (Asilomar AI Principles – Future of Life, Montréal Declaration for Responsible Development of Artificial Intelligence, Model AI Governance Framework, Responsible Research and Innovation, Ethical Aligned Design and many others). Among the most significant is the Ethical Guidelines for Trusted Artificial Intelligence initiative from the European Commission's High Level Expert Group on AI Workshop (AI HLEG). These guidelines declare a view of AI that will be human-oriented in order to ensure the respect of human rights and the pursuit of the social interest in terms of the principle of the good life. An important part of this initiative is also a pilot program that offers a series of practical requirements on which AI developers can verify their own solutions and in which Slovak technology companies can also participate. The recommendations are based on four ethical principles (respect for human autonomy, prevention of harm, justice and explainability) and seven key requirements, or areas to which we should pay increased attention when developing AI (human factor and supervision, technical resistance and security, privacy and data management, transparency, diversity, non-discrimination and fairness, social and environmental well-being, responsibility). This proposal is also remarkable for the professional community of ethicists and their more intensive cooperation.

For example, a number of specific but important questions also arise regarding the creation of an ethical infrastructure, i.e. how this model of ethical supervision will work, the professional competence of these subjects, or their institutional status. Should it be an internal or external entity, an ethics commission? Should it be an engineer who develops the technology, a senior manager or a government institution? In other areas of the institutionalization of ethics, certain forms have already established themselves, and it is possible to draw on these experiences and inspirations. If the system is to be set ethically (ethical regime), it should serve not only as a control or monitoring system but also as a preventive (if not dominant) system. This puts questions and considerations on a different level. Ethics-application recommendations should not fulfill a formal function but rather as a process with a longer-term focus and an active tool of building and confidence-building efforts. In principle, we have available analyzes of the current situation in each EU country, and it is up to the individual member countries to take them into account in their national strategies and procedures.

It is positive that, in connection with these recommendations and considerations, Slovak experts in the field of artificial intelligence are aware of this implementation problem. The initiative of Slovak experts M. Pikus and R. Hrabovský and their publication "Artificial intelligence in Slovakia: use, impact on the labor market and ethical aspects" can also serve as inspiration.

A certain self-reflection of European countries and Slovakia in the given area is also provided by the digital economy and society index (DESI), which the European Commission evaluates the digital progress of member states and provides in its reports since 2014. According to current data[1], in 2021 Slovakia ranked in the digital economy index and companies (DESI) 22nd place among 27 EU member states. In principle, our country remains in the same position as in 2020. According to the data provided, Slovakia is just below the EU average or around it in terms of indicators in the area of human capital. 54% of Slovaks have at least basic digital skills and 27% have above-average digital skills, compared to the EU average of 56% and 31%, respectively. The number of businesses providing ICT training in 2020 was 16%, which is 4 percentage points below the EU average of 20%. The share of ICT specialists in the total employment also increased and almost reached the EU average. The overall use of fixed broadband in Slovakia steadily increased from 72% in 2019 to 78% in 2020. Slovakia has significantly improved the rollout of superfast internet and progressed with very high capacity network coverage. At the same time, the fact that 15% of companies used at least two artificial intelligence (AI) technologies in 2020, compared to 25% in the EU, as well as the fact that Slovakia ranks 19th among the 27 EU countries in terms of human capital, is also something to think about and is thus below the EU average. In this context, it can be concluded that many key measures are delayed in the digital transformation. It is necessary to adapt the educational system to new trends and focus on the skills required in employment. It is also evident that it is necessary to develop soft skills and competences for more intensive involvement in the functioning of the digital society (digital citizenship). In principle, it is clear that the focus on supporting ethics in development, as well as its implementation, is compatible with European initiatives and will be part of digitization and transformation processes in Slovakia as well.

In this context, we must realize that we are rather in the phase of searching for these effective tools. It is important that ethical expertise and experience is used. The point is that formally adopting models of ethical functioning may not be effective enough either. The question of how to make the right ethical decisions in the complex dilemma situations, how to adopt decision-making procedures, what is ethically acceptable, etc., becomes central again. It is the case method that could be an important tool for creating ethical availability and ethical counseling as an important part of external or internal assistance.

All areas will already require sensitively thought out steps, procedures, help from specialists and rationally justified procedures in the field of ethics in specific conditions.

In the portfolio of the current initiatives and institutional activities aimed at the implementation of ethics, the release of a preliminary summary report under the title *Artificial Intelligence Governance and Ethics: Global Perspectives (2019). In another one authors Angela Daly, Thilo Hagendorff, LiHui, Monique Mann, Vidushi Marda, Ben Wagner, Wei Wang a Saskia Witteborn)* which discusses the need to implement ethics, ethical standards into

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[1] Index of digital economy and society 2021 Slovakia (DESI).

the global system of artificial intelligence, whether it is a state or private sector. With the advent and development of new technologies, the issue is gaining strength and experiencing not only extensive development but also a deeper penetration into specific areas of contemporary society. Therefore, we can conclude that this is an important area of ethical interest and it is necessary to enter this discourse also from the point of view of the latest experiences of applied ethics, the use of its tools.

Certainly, in the given case, the question arises not only about the creation and implementation of ethical standards (ethical norms), but mainly about the mechanisms of ethical prevention, ethical audit, ethically responsible and evaluating entity (internal or external) as an effective advisory ethical service, etc. An active ethical service could already be offered during the selection of employees, acceptance and implementation of projects, mechanisms for strengthening ethical behavior and informing about ethical failure, creation of ethical programs, etc. (such as how to set up an ethics commission and how it should work). Experts in ethics and ethical expert work can be helpful in this area and participate in risk minimization, specifications in the creation of ethical policies from the point of view of individual departments, institutions and vision. This is also why we perceive case law and its function in the field of new technologies as an important, if not central, part of minimizing ethical risks, a tool for increasing ethical profile and credibility, a tool for ethical prevention and ethical protection, or a means of ethical revitalization.

From a relatively wide range of tools for ethical expert activity and implementation procedures, the case method, which finds a universal nature in ethical implementation policy, deserves special attention. Our goal is to point out its importance in the context of the latest application-ethical requirements and at the same time to present its optimal variant on a concrete demonstration. We see it as an important part of critical reflection on some similar initiatives, which often do not take into account these current ethical-theoretical parameters and application intent.

It is important that it fulfills the normative-prescriptive side of applied ethics as well as its other requirements. We will try to present the optimal variant of the case study model in terms of fulfilling these application-ethical requirements.

Case studies and narrative approaches are an effective tool for understanding moral problems, their illustration and suggestive means of mediating ethics in the aspect of practice. In this form, ethics is better perceived by people from practice. It is an effort to get closer to practice, but also to examine how the ethical issue manifests itself, or how the moral dilemma sounds in real life. This is a certain retreat from the presentation of ethics in a purely theoretical form or the presentation of principles, which are difficult for people in practice to understand anyway or rather put off by their abstractness. "From our point of view, it is a retreat from principialism as a method of making ethical judgments and rather an approach to contextualism.... We are supporters of coherence and balance of reasoning, or reflective balance in moral reasoning I mentioned in an earlier publication where I discuss the role of applied

ethics in practice. The creation of case studies is associated with qualitative research and therefore cultivates the research potential of researchers as well as its practical usefulness. "For applied ethics, the narrative approach appears to be a promising tool for the institutionalization of ethics... the creation of stories and the use of storytelling in ethics are the most suitable form of institutionalization of ethics... writes the founder of applied ethics in Slovakia, Pavel Fobel (Fobel, 2009, pp. 7-32).

3. Case study – Health status of Roman and his diagnosis possibilities

Few patients realize that healthcare is a very strong financial sector. He can callously calculate the value of health, the cost of which increases unsustainably from year to year and therefore requires specific solutions. This is also the approach from the position of applied ethics - bioethics.

It would be possible to improve and streamline access to the patient as well as management in the healthcare sector with the help of artificial intelligence. Even the doctors themselves point to some specific functions for the use of artificial intelligence (Meško, 2017) such as efficiency in disease diagnostics, the use of auxiliary medical robots and devices as well as increasing productivity through automation.

Diagnostic errors quite often and seriously threaten the quality and safety of health care. There are statistical data that estimate that the rate of outpatient diagnostic errors is e.g. in the USA 5.08% of the total number of examinations (it is approximately 12 million people annually) (Esteva et al., 2018). Moss and colleagues used an automated rhythm classification methodology to analyze continuous electrocardiograms (ECGs) in critically ill patients and concluded that the AI technology was able to generate additional information and insights about the data that doctors might have missed (Moss, 2017).

Thirty-year-old Roman comes from a small district town, in which the regional hospital, where he has been going regularly since puberty, should be closed. He was then diagnosed with heart disease, for which he is being treated in a traditional conservative way. This year, doctors proposed to him the possibility of a new heart diagnosis using artificial intelligence in order to reveal possible deviations of the heart in even more detail. Roman has undergone regular check-ups for half of his life and trusts the doctors. However, he is too conservative and does not want to do anything extra as a patient.

Hypothesis: Roman, after thorough communication with doctors and studying the possibilities of artificial intelligence in diagnostics, decides to undergo modern heart diagnostics despite possible negative prognoses, which, although rare, are possible.

Possible alternatives of solution

a) Roman has been satisfied with the treatment so far.
b) Roman decides on a new diagnosis of his heart.
c) Roman chooses a waiting position, in such a way that when his condition worsens, he proceeds to the diagnosis with artificial intelligence.

Moral consequences of the individual alternatives

From the aspect of the first alternative according to individual normative ethical theories, Roman behaved conservatively. In the spirit of virtue ethics, he acted carefully and responsibly only for the moment now and here. The ethics of duty suggested to him that he acts for the preservation of health by default as he has done for the future, perhaps not. Even the ethical theory of responsibility is only partially fulfilled: (who?) Roman as a subject and patient (before whom?) in front of the doctors, who are also convinced of another possibility (for what?) for Roman's health, i.e. diagnosing (according to what criteria?) the latest knowledge and possibilities of science.

The second alternative in the description of normative ethical theories is more positive. According to virtue ethics, Roman acts responsibly and judiciously not only for the present but also for the future. In accordance with the ethics of utilitarianism, this approach would benefit not only Roman, but also medical science or the doctors treating him. Over the years of caring for doctors, this approach could be described as responsible towards themselves, doctors, the institution as a whole society. From the ethical aspect of duty, he would behave not indifferently to his health, but also to the care of doctors and society, which cares about the health of citizens.

The third alternative is calculated and, from a medical point of view, also undesirable. You often hear words spoken by doctors if you had come earlier. According to virtue ethics, this is an indecisive and irresponsible solution. Even the ethics of duty would not evaluate this approach to Romano's health positively. It would be difficult for us to assess from the standpoint of utilitarian ethics what benefit (contribution) such an attitude of Roman would bring for him, doctors and society if it were concluded that intervention is no longer possible.

Solving the moral dilemma

The most optimal alternative for Roman is the second option. Even considering the fact that it is not an operation or any other intervention in the body, but artificial intelligence will be used, which is supposed to evaluate Roman's state of health based on other comparisons from studies and possibly propose a new diagnosis, it is an appropriate decision. The positive aspect is related from the position of virtue ethics, which evaluates such an attitude responsibly, judiciously and carefully. The ethics of duty evaluates such a choice as positive in relation to one's health. Roman took a responsible attitude to himself (who?), but also to the institution, i.e. the hospital and healthcare (before whom?) towards his health condition (for what?) before

society, i.e. also by financing his health (according to what criteria?). It will benefit not only Roman, but also the entire society of doctors, medical science in the spirit of utilitarian ethics.

The hypothesis we outlined at the beginning was fulfilled positively, as indicated by the resolution of Roman's moral dilemma.

4. Conclusion

One of the important goals of case studies is to increase the ethical sensitivity of people in solving moral dilemmas through alternatives with moral reasoning, where as the basis of this reasoning we should take balanced (coherent) reasoning from some generally recognized ethical approaches - normative ethical theories. It is positive that applied ethics continue to develop not only on a theoretical level, but also gain practical strength and are enriched by new experiences. Workplaces are trying to expand their professional portfolio, to enrich with new experiences from the institutionalization of ethics. It depends on the individual skills and activities of the experts how they manage to manage institutionalization. How will they manage to convince companies and institutions that avoiding ethical risks and collisions saves internal economic resources, increases work comfort and thus performance, and reduces conflict in the work environment. As a result, investment in ethics becomes a competitive advantage but also a societal necessity. An expert in ethics can thus become an actor of social change and a beneficial profession.

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