

BASIC ETHICAL PROBLEMS RELATED TO THE DEVELOPMENT OF ARTIFICIAL INTELLIGENCE AS A MANAGEMENT TOOL

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Purpose: The aim of this article is to show the most important ethical problems related to the development of artificial intelligence as a tool used to an increasing extent in the management process.

Design/methodology/approach: The article analyzes selected available literature on artificial intelligence. The authors are particularly interested in the ethical aspect of the use of artificial intelligence as a tool in the management process. In addition to the literature review, the authors use the method of analysis and logical construction.

Findings: The article presents the issue of artificial intelligence as a technological project that is becoming an increasingly important tool used in a manager's work. The use of AI is also an effective means of improving business operations. However, this raises a number of ethical problems and they are the main subject of the analyzes undertaken in this article.

Research limitations/implications: The text refers to a limited number of studies. Further research should be conducted to verify the real impact of AI application in management processes, especially when it comes to the human-machine relationship.

Originality/value: The article points to the main ethical problems emerging from the use of AI-based technologies in management processes. The analyzes mainly refer to the latest literature in this field and focus on those ethical difficulties that most disturb human-AI interaction.

Keywords: Artificial intelligence (AI), ethics, ethics of AI, machine Ethics.

Category of the paper: Conceptual paper.

1. Introduction

Artificial intelligence (AI) is currently the most discussed technological project in scientific literature. It is also becoming an increasingly important tool in supporting business operations. Recent advances in this field make it possible to support managerial tasks and functions such

as strategy planning, marketing and customer service. AI is also becoming an effective tool for business performance and an effective tool for its improvement (Gil et al., 2020). Due to the great impact of AI on various areas of social life and technological progress, its development has sparked a broad debate on the principles and values that should guide its development and applications (Kazim, Koshiyama, 2021; Vayena et al., 2018).

The growing possibilities of using AI in the management process have attracted enormous attention of scientists, business managers, entrepreneurs and politicians. Despite the fact that AI is one of the main sources of innovation, so valuable in business, it also poses a threat because, for example, it can deprive people of their jobs (Huang, Rust, 2018). AI is a tool increasingly used in management practice. Due to the ongoing AI-human interactions and emerging real or anticipated ethical problems, these processes require deeper ethical reflection (Heyder et al., 2023).

AI systems are used, for example, in the area of human resources management (HRM). In the process of the so-called "algorithmic management" AI technology is used to evaluate and select candidates (Marr, 2018), recruitment and selection process (Guenole, Feinzig, 2018) and the end of employment (Kellogg et al., 2020). The use of AI in the HRM process raises ethical questions. One of them is the issue of justice arising in the context of decision-making.

Deep ethical consideration becomes all the more necessary because AI-based technologies are no longer always subordinated to people (Baird, Maruping, 2021). They take over responsibility for the tasks performed. A question arises: are technologies managed by AI and AI itself also burdened with moral responsibility? The most important ethical challenges related to the use of AI in management processes include, for example: the issue of distributive justice, discrimination and exclusion, or transparency resulting from people's helplessness in the face of the growing capabilities of AI.

AI-based technologies seem to lead to the disappearance of traditional forms of work, giving rise to its hybrid form in the human-machine system. To avoid unintended negative ethical consequences resulting from the changing nature of human-AI interactions and the increasing importance of AI in management processes, it is necessary to re-examine how we manage human-AI interactions in organizations (Rai et al., 2019).

The analysis of ethical problems related to the use of AI in management processes requires as stated above, first of all, the development of the issue of ethical management of human-AI interaction based on the principles of ethics (Alsheibani et al., 2020; Han et al., 2020). The condition for ethical behavior when designing and implementing AI into company management processes is the actions of employees based on ethical values (Flathmann et al., 2021).

The emergence and development of AI opens a new era in various areas of life. This also applies to management. At the same time, it also poses numerous challenges, including those of an ethical nature. Understanding them and being able to counteract possible negative ethical effects becomes a necessity. This is an interdisciplinary challenge. Meeting this challenge is only possible with the cooperation of representatives of various scientific disciplines.

2. Methodology

To achieve the research objectives of this article, the study used techniques such as literature review to collect, analyze and synthesize relevant information from a wide range of sources. The databases were searched based on the following keywords: artificial intelligence, ethics, AI ethics, AI tools in management. The literature review was performed using Google Scholar and Scopus browsers.

The aim was to conduct a theoretical review based on an extensive literature search and qualitative content analysis of relevant articles to develop and expand knowledge on the ethical management of human-AI interaction. The article attempts to answer the question about the main ethical problems emerging with the development of AI. Then, attempts are made to identify those problems that are characteristic of the use of AI-based tools in management processes.

3. Literature review

The development of AI-based technologies now allows to perform cognitive functions that characterize the human mind (Rai et al., 2019). These technologies differ from previous ones in their ability to operate (semi-)autonomously (Rieder et al., 2020). There is a problem resulting from the fact that technologies based on AI are no longer always subordinated to the human factor (Baird, Maruping, 2021). Does this mean that they become responsible for the actions they take? It seems that the answer to this question is still negative.

Starting in the early 1960s, thanks to the development of experimental social psychology, considerations on the nature of justice and other ethical concepts ceased to be purely theoretical (Reis, 1984). This allowed later for example to understand how people respond to being paid higher or lower than the going rate and what mechanisms govern the allocation of group rewards. However, this did not lead to the elimination of conflicts, especially regarding distributive justice. Some researchers also point to AI failures leading to customer dissatisfaction (Castillo et al., 2021).

In order to avoid potential negative ethical consequences resulting from the changing nature of human-AI interactions taking place in organizations, the way in which it is managed should be analyzed (Rai et al., 2019). This assumes the need to indicate the most important ethical threats related to the above-mentioned interaction. Ethical requirements for AI systems are requirements derived from ethical principles, norms and codes (Guizzardi et al., 2020). However, it is worth remembering that modern technologies also affect ethics (Orbik, 2023). We are therefore dealing with a feedback relationship.

The implementation of ethical principles in strategic management requires two perspectives. First, the management of human-AI interaction must incorporate ethics by establishing guidelines and developing policies that recommend appropriate ethical behavior understood as an obligation for employees and artificial intelligence (Alsheibani et al., 2020; Han et al., 2020). Second, organizational leadership must consider employee virtue ethics based on moral values that guide individuals' intrinsic motivation to behave ethically when implementing, designing, and using artificial intelligence (Flathmann et al., 2021). Therefore, in order to implement the ethical management of human-artificial intelligence interaction, it is important to combine both outlined ethical perspectives (Eitel-Porter, 2021).

Attempts to ethically organize the development and use of AI should seem to aim at creating a universal machine ethics. The basic principles of this ethics should, of course, be written into the algorithms that guide their operations. Decisions about which principles to choose should not be left solely to ethicists or engineers (Shariff et al., 2017). The morality accepted in a given culture should also be taken into account. Ethical principles that are not accepted in a given community become dead. If AI is applied to management processes, it may lead to various types of conflicts within the organization resulting from employees' lack of acceptance of these principles. This becomes particularly important when various types of moral dilemmas arise.

Analyzing the literature on AI ethics, it can be noticed that the debate is mainly conducted around five ethical issues: transparency, non-maleficence, justice and honesty, responsibility and privacy (Jobin et al., 2019). Ethical topics related to AI, manifested in the publication of guidelines and rules related to its development, occur on a global scale. Companies such as Google and SAP can be mentioned here. Various recommendations regarding the use of AI are also issued by non-profit organizations and professional associations such as the Association of Computing Machinery (ACM), Access Now and Amnesty International. The scale of this phenomenon indicates the importance of ethical issues related to the increasingly widespread use of AI technologies. Some of the most important concerns regarding AI are the threat to employees' jobs, its misuse by dishonest entities and undermining the principle of justice (Zou, Schiebinger, 2018).

The thesis that the rapid development of AI-based technologies is accompanied by the increasing interest in emerging ethical problems seems to be justified. Research shows that the vast majority (Jobin et al., 2019) of all ethical AI principles are issued in economically highly developed countries. It results, among other things, from social moods, which are caused in many cases by incorrect understanding of the principles of AI operation and the possibilities of its use. We can therefore say that the revolution caused by the emergence of AI is transforming both science and society (Etzioni, Etzioni, 2016).

In the context of decisions made in the management process using AI, the question of their fairness and justice becomes crucial. They can be assessed through the prism of organizational justice, which can be understood in a utilitarian way as a principle occurring in decision-making contexts (Colquitt, Rodell, 2015). There are many works that address the issue of justice in

companies. They can be divided into two categories: (1) regarding the answer to the question why justice is so important to employees (Folger, 2001; Lind, 2001; Tyler, Lind, 1992); (2) analyzing how the perception of justice influences the adopted attitudes and behaviors (Lind, 2001; Tyler, Blader, 2003).

One of the basic problems is measuring the degree of justice in an organization. However, this became necessary when the investigation on the concept of justice lost the status of only a philosophical reflection. Several stages of development of the methodology of research on the concept of justice in organizations can be distinguished. The former mainly used an ad hoc scale with a few items (e.g., Earley, Lind, 1987; Folger et al., 1979; Tyler et al., 1985). As research has developed, more comprehensive measures have been introduced (Moorman, 1991; Sweeney, McFarlin, 1993). As research progressed, scientists introduced additional scales, the use of which became necessary due to the development of theoretical concepts and related trends in the scientific literature (Ambrose, Schminke, 2009; Blader, Tyler, 2003; Colquitt, 2001; Rupp, Cropanzano, 2002).

Attempts to scientifically measure justice in organizations obviously encounter various difficulties. One of them is to properly construct the definition in such a way that there is correspondence between the definition and the measure (Schwab, 1980). It is also important that the definition of the concept can constitute a methodologically correct basis for the survey questionnaires (Hinkin, 1998).

In the scientific literature devoted to the issue of AI ethics, there is a noticeable tendency in the understanding of general ethical concepts in the context of their application in specific social situations. An example can be again the concept of justice, most often understood as the fairness of decision-making situations (Colquitt, 2012; Cropanzano, Greenberg, 1997; Greenberg, 2010). The consequence is, on the one hand, the possibility of quantitatively approaching moral phenomena, and, on the other hand, the blurring of the boundaries between closely related ethical concepts. For example, the terms "justice" and "fairness" are used interchangeably. Consequently, the same measure may refer to a measure that is intended to induce fairness (e.g., consistency, equality, respect, truthfulness), while another refers to the perception of fairness itself (Colquitt, Shaw, 2005). It is true that the interchangeability of some ethical concepts is not inappropriate due to their almost synonymous meaning, but more and more researchers point out that, for example, justice and honesty are completely separate concepts in meaning and distinguishing them affects the obtained research results (Choi, 2008; Kim, Leung, 2007; Rodell, Colquitt, 2009).

A certain degree of interchangeability of ethical concepts is even immutable (Greenberg, 2010). This enables to combine the measure and the research question with the operational theoretical perspective. Some researchers indicate that ethical concepts such as justice, fairness, trust, duty, commitment may refer both to people performing various functions in the organization, and to the organization itself (Blader, Tyler, 2003; Colquitt, 2001; Rupp, Cropanzano, 2002). It follows that organization-centered justice reflects the degree to which

a company or its management is perceived to act in a consistent, fair, respectful, and truthful, or, briefly, ethical manner in the context of decision-making. In contrast, fairness attributed to a manager reflects the degree to which the manager is perceived as honest.

The concept of justice is one of the most important ethical concepts analyzed since ancient times by such thinkers and advocates as Hammurabi, Moses, Aristotle and many others. Of course, our perception of justice has changed significantly since ancient times. For many centuries, the concept of justice was related to the concept of reciprocity. A significant change in the perception of justice occurred when the idea emerged that people are capable of shaping the social world so that it achieves their goals. This happened in ancient Greece thanks to the sophists. The second breakthrough idea was the thesis of the equality of all people in the light of the law of nature, proclaimed a little later by the Stoics (Johnston, 2011). It was not until the twentieth century that the concept of organizational justice emerged. "At its most general level, organizational justice is an area of psychological inquiry that focuses on perceptions of fairness in the workplace. It is the psychology of justice applied to organizational settings (Byrne, Cropanzano, 2001, p. 4). This approach points to the eclectic nature of justice as a research area. Most researchers agree that when it comes to justice understood as fairness, its two types can be distinguished: (1) distributive justice or the fairness of the outcomes received in a certain transaction, and (2) procedural justice understood as the fairness of the process leading to these outcomes (Törnblom, Vermunt, 1999).

Research on specific types of fairness in the context of machine learning programming seems particularly interesting. This is currently the fastest growing area of AI in which statistical methods allow the system to learn from data and make decisions without the need for direct programming. The ethical issue that arises here is the possibility of eliminating unfairness from algorithmic decision-making. The usefulness of machine learning for organizations is due to the fact that it reduces the errors potentially made by humans when making decisions (Pezzo, Beckstead, 2020). That is why currently, more and more managers are using machine learning in decision-making processes. The use of these methods brings new ethical challenges for society and organizations (Grenwood et al., 2020; Martin, 2019).

The desire to make AI tools fair has led to the development of various statistical techniques. They are referred to as fairness criteria and take the concept of fairness into account in the design of algorithms. The problem that arises here is not only the technical side of designing such algorithms but also the understanding of the concept of fairness. It should be consistent with people's feelings. This is a necessary condition for people working in the organization to recognize the actions of AI tools as fair (Newman et al., 2020). Unfortunately, the above-mentioned ethical issues have not yet been properly addressed by researchers.

In computer science, fairness is understood as the absence of "any prejudice or favoritism toward an individual or group based on their inherent or acquired characteristics" (Mehrabi et al., 2019, p. 1). Correctly determining the criteria of algorithmic fairness is of both theoretical and practical importance. In addition to the above-mentioned difficulties in defining ethical

concepts such as fairness, there are also practical problems. The main such problem is the lack of guidance for organizations that want to implement algorithmic criteria. This can lead to tensions between employees, customers and the business environment (Lee, 2018; Newman et al., 2020). The theory of justice in organizations mainly concerns the perception of distributive and procedural fairness by employees and customers (Goldman, Cropanzano, 2015; Khan et al., 2015). The emerging task for ethicists, managers and programmers alike would be to examine the importance of distributive and procedural fairness for algorithmic criteria.

The growing impact of AI technology on various areas of activity, including management processes, requires engineers and managers to be more committed and to incorporate knowledge of ethical principles into their managerial practice (Agbese et al., 2023). When attempting to assess the importance of ethics in management processes, including those based on AI tools, it should be stated that research indicates that ethical requirements are still rarely considered a priority at middle and higher management levels. This is due to the conviction that this type of research has little impact on human life and that it does not translate into financial value (Brendel et al., 2021).

Summarizing the development of literature on AI ethics, it can be said that to some extent a common terminology regarding this issue has been developed. Summarizing the development of literature on AI ethics, it can be said that to some extent a common terminology regarding this issue has been developed. Terms such as trust, transparency and privacy appear in various studies. Similar solutions to emerging problems are also often proposed (such as appropriate legislation). Similar main problems are identified, such as exploitation, disinformation and various types of prejudice. However, it is difficult to talk about an established, uniform canon of literature. There is also often a lack of a philosophical foundation.

All the above-mentioned ethical problems related to the development of AI also apply to its use in management practice. The digital era poses new challenges for business at all stages of its operation (Rustholkarhu et al., 2021). AI technologies are expected to transform and improve especially marketing and sales processes (Davenport et al., 2020; Iansiti, Lakhani, 2020). AI in management literature is most often described through its management applications (Rustholkarhu et al., 2022). All these areas require ethical considerations.

The literature analysis shows how complex and still only partially developed the topic of AI ethics as a management tool is (Baker-Brunnbauer, 2021). However, due to the fact that the development and use of AI-based technology is the future of management, both in-depth reflection on its ethical consequences and the implementation of solutions that eliminate potential threats, including those of an ethical nature, are necessary.

4. Discussion

Although some scientists and practitioners claim that AI is still far from achieving consciousness and therefore there is no need to consider ethical issues in its context, when combined with other technologies its potential in areas such as business, medicine or transport is evident. The numerous applications of AI-based technologies are having an increasing impact on humans, which raises ethical questions.

A distinction must be made within AI ethics, which is part of the ethics of advanced technology that focuses on robots and other artificially intelligent agents, roboethics (robot ethics) and machine ethics (Siau, Wang, 2020). Robot ethics deals with the moral behavior of humans during their interactions with AI and the related impact of robots on individuals and social groups. In other words, AI ethics are the ethical principles arising from the development and implementation of artificial intelligence.

Since there are different models of human-AI interaction (Rai et al., 2019), it is important to remember that ethical management of human-AI interaction cannot be limited to a specific task and, therefore, to a specific type of interaction. It is important to divide tasks between humans and AI (Fügener et al., 2021). The idea is for humans and AI to form a team in which there would be a chance to correct each other's mistakes (Bansal et al., 2021).

Organizations must take ethics into account when making decisions regarding the implementation and use of the latest AI-based technologies to achieve their strategic goals (Berente et al., 2021, Dwivedi et al., 2023, Marabelli et al., 2021). Therefore, in the development of AI-based tools, cooperation between managers, computer system specialists and ethicists seems to be very important.

Research conducted so far on the human-AI relationship has focused primarily on the ethical or unethical actions of humans or AI-based technologies (Hamilton et al., 2021; O'Sullivan et al., 2019). What is missing here is an analysis of the impact on ethical behavior of the moral values accepted by individuals as the main motivators of these actions. An important change that has taken place in recent years is the growing awareness of the existence and importance of ethical issues related to AI in the institutional dimension, the scientific community and society in general (Boddington, 2017).

Based on the analyzed literature, the following fundamental problems can be identified in research on the use of AI in the management process in the context of human-AI interaction:

1. the lack of a general ethical theory discussing the basic principles of conduct in the human-AI relationship (Mirbabaie et al., 2022),
2. the lack of integration between the algorithms on which AI operates and people's understanding of basic ethical concepts (Morse et al., 2021),
3. the fact that ethical issues emerging with the use of AI-based tools in management processes are part of a previously unknown interaction between humans and machines, in which so far only humans are the subject of ethical activities,

4. the lack of a global approach to the ethical aspects of AI can also be indicated as of the ethical problem (Carillo, 2020).

One of the most serious problems is the methodological difficulty manifested in the correct construction of definitions of ethical concepts (e.g. justice) in such a way that quantitative analyzes are possible. In this way, ethics as part of philosophy can become a part of scientific discourse. his scientific approach is necessary when trying to evaluate technology.

Difficulties in appropriately regulating ethical issues arising with the development of AI also result from methodological differences characterizing ethics and computer sciences (Orbik, 2016). The problem becomes even greater when we realize that the development of AI brings with it challenges requiring cooperation of such diverse disciplines as communication, business, management, media studies, law, political science, philosophy and other fields of science and engineering (Bakiner, 2023).

Several theoretical implications emerge from the literature analysis that suggest future directions of action that should be taken. First, this article highlights the potential of behavioral ethics research to enrich our knowledge of the tools used in AI-based management processes. It would be a task for both ethicists and management specialists to examine the importance of distributive and procedural fairness for algorithmic criteria. Second, we need to ensure greater integration of ethics into organizations. It cannot be treated only as a kind of extravagance or an "add-on" to technical problems (Hagendorff, 2020). Third, software developers should possess a sense of moral responsibility for the systems they design and a conviction about the moral significance of their work. In other words, AI systems should be developed and used in accordance with social and moral values such as justice, beneficence and non-maleficence (Taddeo, Floridi, 2018; Pekka et al., 2018). Fourth, it is necessary to take into account, in addition to deontological ethics based on universal ethical principles and norms, also ethics that takes into account the specific situation and the problem to be solved (Mittelstadt, 2019). Such ethics should, while remaining consistent with fundamental moral principles, refer primarily to the sense of responsibility for the undertaken actions.

The problem of the ethics of AI-based tools used both in management processes and in various other areas of life remains open. According to some researchers, there is no point in teaching a machine ethics even if it could be done (Etzioni, 2017). This view is justified by the fact that only humans are capable of making ethical choices, and machines, even those to which we are inclined to attribute intelligence, are only tools and not ethical entities. The key to resolving the dispute here is the vision of future human-intelligent machine relations. It seems that the ideal solution to this relationship would be a model that integrates the speed and capabilities of intelligent machines with the innate talents of people, where what is important is not competition but a specific type of cooperation (Shaw, 2019). In the light of the interdisciplinary nature of research on the development and application of AI, the analysis and solution of ethical challenges becomes one of its most important elements.

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