computer sciences and mathematics forum

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Proceeding Paper

Cross-Cultural Challenges to Artificial Intelligence Ethics †

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† Presented at Forum on Information Philosophy—The 6th International Conference of Philosophy of Information, IS4SI Summit 2023, Beijing, China, 14 August 2023.

Abstract: A single paragraph of about 100 words to give a brief introduction to your work. With the continuous development of global cultural exchange, the impact of cultural factors on the ethics of artificial intelligence is becoming increasingly significant. Therefore, it is necessary to address new issues in the practical application of artificial intelligence from a cross-cultural perspective and construct compatible global ethical principles of artificial intelligence from a macro perspective. This article first discusses the global computer ethics with the widest coverage, and further analyzes the different attitudes towards information management in Japan, the United States, and Germany using comparative research methods, starting from the standardization of network information. Secondly, this paper discusses the ethical decision of autonomous vehicle, which is the focus of cross-cultural AI ethics, and shows the differences of different cultural moral clusters on this ethical decision.

Keywords: artificial intelligence; ethics; cross-cultural; challenge

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Citation: Liu, Y. Cross-Cultural Challenges to Artificial Intelligence Ethics. *Comput. Sci. Math. Forum* **2023**, *8*, 21. https://doi.org/10.3390/cmsf2023008021

Academic Editors: Zhongzhi Shi and Wolfgang Hofkirchner

Published: 10 August 2023

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1. Introduction

With the arrival of the industrial information age, artificial intelligence, as a symbol of the intelligent era, has developed rapidly and become an important driving force for social progress. However, artificial intelligence is different from traditional technology. It is a revolutionary, open, and disruptive emerging technology. In the future, strong artificial intelligence machines will also synchronize cultural communication and integration, making cultural research a complex challenge with a multi-layer interwoven structure. Therefore, when considering the ethics of artificial intelligence, cultural factors must be taken into account. Cross-cultural perspectives enable the coexistence of diverse values from different backgrounds, and people can grasp the uniqueness of cultural contexts to make reasonable choices. This study aims to stand in the context of the intelligent era and respond to various issues that may arise in the practical application of artificial intelligence from a cross-cultural perspective, eliminating ethical risks as much as possible. This has profound theoretical significance and practical value. While ensuring the healthy development of emerging artificial intelligence technologies, we aim to maximize the benefits for humanity.

2. "Global Information Ethics"—Computer Ethics

The cross-cultural challenge of artificial intelligence ethics was first reflected in the global shift in computer ethics. The cross-cultural challenge of artificial intelligence ethics was first reflected in the global shift in computer ethics. It can be said that in the 1970s, 1980s, and early 1990s, "computer ethics" achieved unprecedented development in both theory and practice. Subsequently, the rapid development of information technology, especially network technology and multimedia technology, meant "computer ethics" was no longer limited to ethical issues caused by computer technology. This "multifunctional box" driven by computer network information technology is like a Pandora's Box, not only replacing traditional information technology, but also possessing a wide range of radiation and permeating every corner of the Earth, achieving all-round connectivity for humanity. This is a phenomenon that has never been seen in human history, and the ethical changes

it has triggered will inevitably be global. We can reflect on this inspiring conclusion in conjunction with the development of computer technology.

Between the 1950s and 1970s, internet technology was still in the research and development stage and had not yet become widespread. Research on network information issues was mainly focused on the field of computer technology, and researchers were mainly engineering technicians. Since the 1980s, many writers have started creating science fiction works based on the development of the Internet, which envision the future way of life for humanity. Since the 1990s, the International Internet of Computers had officially emerged, which can connect hundreds of millions of computers around the world, forming a huge global computer information network with all-encompassing information resources and incredibly powerful information processing capabilities. The Internet has begun to move towards broader development fields, and corresponding academic research has also begun to focus more on the fields of philosophy and humanities.

Throughout the early development of computer information, researchers were mostly immersed in the "digital blueprint" of future technology, only seeing the equal, free, open, and shared aspects of cyberspace, while ignoring the negative impact of technology and the social problems brought about by the networking of social relationships. On the one hand, this is related to the one-sided views of scholars at that time, and on the other hand, it is also influenced by the characteristics of the early computer internet. In the initial stage, there were fewer internet users, and users had strong self-regulation abilities. The problems of cyberspace had not yet emerged [1]. With the popularization of the Internet and computers, the number of users has skyrocketed, and the quality of literacy was also uneven. The ethical and moral issues of computer information have emerged one after another. In the early era of computer network development ideas and models are no longer applicable and how to regulate the environment of the network information society has become an urgent issue that needs to be discussed.

The root causes of ethical issues in computer information mainly lie in three aspects: subject, technology, and society. From three aspects of analysis, it can be concluded that objective technological issues and the inherent characteristics of the online world make the subject's own moral constraints weak. The core issue lies in the need for more sound legal regulations in the online information society, emphasizing that network subjects fulfill their responsibilities and obligations in the network while complying with laws and regulations, fundamentally solving the ethical and moral problems of the network. Therefore, it is possible to analyze the differences in early cross-cultural computer ethics based on the legal differences in network information management among different countries. The following will take Japan, Germany, and the United States as examples.

3. Cross-Cultural Computer Ethics: A Case Study of Differences in Network Information Management in Japan, Germany and the United States

Japan's computer information technology and its industrial development have always been leading in Asia, which is closely related to the policy making of Japan's information industry. As early as May 1985, Japan passed the Information Processing Promotion Act to strengthen international exchange of information; in June of the same year, computer programs were included in the scope of legal protection. In 2000, the IT Basic Law linked the potential impact of technology on society and proposed regulatory measures, which had a forward-looking understanding and vision at that time [2].

Germany is a typical civil law country that regulates various social relationships and behaviors through written laws. Its network regulation is characterized by a balance between freedom and regulation. On the one hand, Germany has established the principle of online freedom through legislation, and the right of individual citizens to freedom of expression can always be fully protected on the Internet. On the other hand, the German government will also filter and severely crack down on and regulate content that is not suitable for dissemination [3]. However, although Germany strives to strike a delicate

balance between freedom and regulation, its legal regulations on online information are still relatively strict compared to other countries.

Compared to Germany's relative protection of freedom of online expression, the United States adopts an absolute protection model. The United States has always attached great importance to freedom of expression. The First Amendment to the Constitution clearly stipulates that ordinary law has no right to restrict the right to freedom of expression, which fundamentally eliminates the possibility of freedom of expression being restricted by new legislation.

It can be seen that Japan, Germany, and the United States show great differences in uncertainty avoidance. In the face of the rapid development of the Internet and information society, Japan attaches great importance to the ethical issues that computer information may bring and has a low tolerance for uncertain risks on the internet. Therefore, extensive legislation, administrative supervision, industry self-regulation, and other multiple means are adopted simultaneously. The government constantly introduces relevant laws and regulations on network information supervision of the times, and the legal framework is relatively sound. At the same time, civil society forces are mobilized to participate in network information management, and the management of telecommunications and the Internet is strengthened in all aspects, so as to avoid uncertainties as far as possible. Germany has a medium attitude towards the emerging technology of computer information. It not only filters and cracks down on bad information, but also protects the right of free expression on the network. It will introduce the necessary laws to control it, but also retains sufficient freedom and has a medium attitude towards uncertainty avoidance. The United States, on the other hand, frankly accepts the possible ethical problems in the development of computer information, highly advocates for freedom, and has weak legal regulations. It is willing to accept a variety of behaviors and will not avoid uncertainties too much.

4. Ethical Focus Issues in Cross-Cultural Artificial Intelligence: Cross-Cultural Challenges to Ethical Decision Making in Self-Driving Cars

With the development of artificial intelligence technology, artificial intelligence has entered the stage of deep learning from traditional "computing". The algorithm model represented by deep learning has strong portability and generalization ability. The deep learning algorithm uses a multi-layer neural network to make a qualitative leap in the learning results by means of unsupervised learning through layer-by-layer recursion of data features. Relevant applications have made major breakthroughs in many aspects, the most significant being the development of driverless vehicles. The most significant achievement of deep learning algorithms is unmanned vehicles. With the development of deep learning capabilities, autonomous vehicles are increasingly gaining more "control" from humans and making ethical decisions for them [4]. That is, the autonomous vehicle originally driven by artificial intelligence have in turn become the agent of human beings, making moral-related decisions for human beings. Once artificial intelligence machines begin to share control with humans, they will inevitably fall into some moral dilemmas of human–computer interaction. Unmanned vehicles use their complex sensors and preprogrammed algorithms to make rational decisions and pursue the optimal solution in the face of accidents, that is, the decision to prioritize the protection of unmanned vehicles in emergency situations belongs to the category of injury distribution [5]. Different individuals from different cultures have different attitudes towards exploring the distribution of harm [6]. Amazon's research on robots in Turkey reveals the complexity of this problem. When a person must make a choice between following the implied expectations of others and self-protection, the moral principles of the same person may have a fundamental conflict. Different choices are mainly affected by individualism index and power distance index, so people in different social and cultural backgrounds have different or even conflicting ethical and moral views on connectionism AI represented by driverless cars. Participants from individualistic cultures tend to choose a large number of people, while participants from collectivist cultures respect older members of the community more and have a weak preference for

young roles. In addition, if linked to economic inequality (Gini coefficient), we will find that participants from countries with large wealth disparities treat people from different social classes more unequal [7]. In terms of control, individuals from individualist and low-power distance cultures expect more control over AI than individuals from collectivist culture and high-power distance [8].

The cross-cultural artificial intelligence ethics centered on computer, internet, and machine learning algorithm technology not only achieve changes in the driving force of ethical issues, but also expand the breadth of related ethical issues and the complexity of the problems to be solved. In today's era of informatization and globalization, the background of the times is becoming increasingly complex, and ethics and culture are closely connected. To some extent, moral and ethical concepts are specific manifestations of culture. Different cultural backgrounds can lead to the integration and conflict of ethical concepts. Behind the globalization of ethical issues in artificial intelligence lies the conflict and integration of various cultures. Therefore, research on the ethical issues of artificial intelligence should not be limited to local areas but should be interpreted in conjunction with different cultural backgrounds. The purpose of interpretation is to solve problems, and one of the ideas is to leverage the initiative of the artificial intelligence ethics governance community to build a globally compatible artificial intelligence ethics principle from a macro perspective to address the cross-cultural challenges of artificial intelligence ethics.

Funding: 2022 China Postdoctoral Science Foundation Project: Research on Ethical Risk Prevention of Intimate Intelligent Technology from the Perspective of Human-Robot Dependence Relationship (Project number: 2022M722553).

Institutional Review Board Statement: This study did not require ethical approval.

Informed Consent Statement: Not applicable.

Data Availability Statement: This study did not report any data.

Conflicts of Interest: The author declares no conflict of interest.

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