

# **Human-Robot Symbiosis Culture**

## **(Summary)**

Wenya Ma

(College of Marxism, Xi'an Jiaotong University, Xi'an, Shaanxi, 710049;  
member of IS4SI Representative Office in Beijing (formerly IS4SI China Chapter))

This statement explores the realization of human-robot symbiosis in the age of intelligence and the impact of human-robot interaction on culture based on a cross-cultural robotics perspective. With the rapid development of computers, the Internet, big data and other technologies, the role of robots is changing from a tool to a social entity, at the same time, the play space of robotics is also broadening to the field of helping the elderly, kindergarten, companion and even the fight against epidemics, and gradually entering the public's field of vision, the point of interest in the foreign academic community from the initial industrial robots (since the 1980s) through the social robots (since the 21st century) to cultural robots (the last decade). ) has expanded to cultural robots (in the last decade). In this digital age, we often hear about how artificial intelligence, machine learning and automation technologies are changing the way we live and work. However, it's important to see this change not as a challenge to humans, but as an opportunity, a chance to create a more harmonious human-robot relationship that will drive innovation and cultural prosperity.

Human - robot symbiosis is a state of existence between humans and artificial machines, referring to the form of coexistence between humans and artificial machines. Human - robot symbiosis represents the inextricable link between humans and artificial intelligence in modern society, a new type of culture that is rapidly emerging in the digital age, influencing our lifestyles, work styles, and social structures. The relationship between humans and machines has been a hotly debated topic in academia since the emergence of man-made machines. The future intelligent society is co-created by human beings and robots, and the complementary advantages and mutual promotion of human intelligence and artificial intelligence is a powerful

driving force for the creation of an intelligent society. The so-called human - robotsymbiotic culture refers to the recursive influence of the cultural values of human society in the development process of robots, as well as the influence of the cultural values of robots on humans.

Human - robot symbiosis is based on mutual trust and cooperation. Artificial intelligence and machine learning systems need to be designed to be smarter and more compatible with human values so that we can trust them. At the same time, we need to educate and train people to collaborate with technology and acquire digital skills to adapt to the changing work environment.

A culture of human - robot symbiosis also encourages us to explore new possibilities. Digital technology can accelerate innovation and help us solve global problems such as climate change, healthcare and education. It can expand our imagination, allowing us to create previously unimaginable works of art and culture.

However, the process of developing human-computer symbiosis is not a smooth one. We need to focus on data privacy, ethical standards and social equity to ensure that the development of technology does not harm anyone, as well as the co-operation of policy makers, businesses and the community to develop ethical frameworks and regulations to guide the application and development of technology.

# **Cross-Cultural Ethical Principles of Artificial Intelligence**

(Summary)

Shengrui Wang

(College of Marxism, Xi'an Jiaotong University, Xi'an, Shaanxi, 710049;  
member of IS4SI Representative Office in Beijing (formerly IS4SI China Chapter))

The main purpose of this statement is to compare the ethical principles of cross-cultural artificial intelligence developed by different countries and groups, and to analyze the differences between them. Cross-cultural AI ethical principles means that, with the widespread use of AI technology and its deepening impact on the daily lives of human beings, countries and groups from different cultures work together so as to ensure that AI is developed, deployed and managed with principles and ethical standards that are beneficial to society. Although there are arguments about the concrete manifestation of differences in values between cultures as an untested stereotype, such differences do exist objectively.

I have selected Guidance for Regulation of Artificial Intelligence Applications formulated by the United States、 Code of Ethics for the Next Generation of Artificial Intelligence formulated by China、 Ethics Guidelines for Trustworthy AI formulated by European Union、 Recommendation on the Ethics of Artificial Intelligence formulated by UNESCO、 Ethically Aligned Design Version 2 formulated by IEEE、 Responsible AI practices formulated by Google. Comparing the above seven documents, I summarize the principles common to all seven documents as: fairness, human rights, safety, accountability, interpretability/transparency, well-being, etc. It is these commonalities or similarities that offer the possibility of developing compatible cross-cultural AI ethics in the future. I have selected three principles of equity, human rights, and safety for specific comparative analysis.

Fairness: While AI will drive global economic growth, it is expected that the United States and China will lead in this area and thus enjoy most of the dividends,

with low- and middle-income countries likely to see only limited gains; moreover, lower- and middle-skilled workers will face downward pressures on employment from increasingly sophisticated machines and AI software. These downward pressures are likely to exacerbate income inequality, which is already quite acute globally. In addition to inequalities in wealth, there are also inequalities in voice, with "regions such as Africa, South and Central America, and Central Asia highlighted as underrepresented" in the AI ethics debate, and "more economically advanced countries are influencing the debate more than others, raising concerns about cultural pluralism and global equity". The above phenomena make "equity" the most frequent word in the ethical principles of AI, except for the IEEE Code of Ethics for the Design of Artificial Intelligence, which does not mention "equity". It is mentioned in several documents. The U.S., the EU, the UN, Google, and the OECD have directly adopted "fairness" as a separate principle, and China's New Generation Code of Ethics for Artificial Intelligence has adopted "avoidance of prejudice and discrimination" as a principle, and has mentioned "fairness" several times. "Fairness". Although "fairness" is the ethical consensus of these documents, the scope and connotation of "fairness" varies in these documents, for example, China's Code of Ethics for the New Generation of Artificial Intelligence states " Fully consider differentiated demands, avoid possible data and algorithmic bias, and endeavour to achieve the universality, fairness and non-discrimination of AI systems." The U.S. Guidelines for the Regulation of Artificial Intelligence Applications also state that "AI applications are to reduce discrimination resulting from modern human subjectivity." The OECD and Google's Ethical Principles for AI also focus on emphasising the avoidance of bias and discrimination. And in addition to mentioning the avoidance of bias and discrimination, the EU Code of Ethics for Trustworthy Artificial Intelligence states that it is important to "ensure an equal and fair distribution of benefits and costs" and "promote equality of opportunity", and it also states on a procedural level that fairness also includes "the right of ordinary people to challenge and remedy decisions made by AI systems and the humans who operate them". It can be seen that the EU has further expanded the connotation of fairness, especially pointing out that AI and its operators

should be allowed to be challenged, reflecting the concept of equality of rights, which is not mentioned in other documents. The UN Recommendation on the Ethics of Artificial Intelligence, on the other hand, mentions fairness between countries, which is not mentioned in other documents, such as "the most technologically advanced countries have a responsibility to support the most disadvantaged countries to ensure that the benefits of AI technologies are shared" and "to address the digital and knowledge divides within and between countries", taking into account the fact that AI can be used for a variety of purposes. Considering today's military AI applications and the use of AI as a tool for international competition by some countries, these two principles are crucial to eliminating technological hegemony and enabling AI to contribute to the advancement of all humankind. In short, we see in these documents that AI should not only reduce prejudice and discrimination, but also promote fairness in rights and equality of opportunity, and moreover reduce the gap between countries.

Human rights: The United Nations Recommendation on the Ethics of Artificial Intelligence and the IEEE Code of Ethics for the Design of Artificial Intelligence both explicitly use the term "human rights" as a principle. Other documents do not explicitly use the term, but they all provide for the protection of human rights from their own perspectives. The OECD emphasises the value of protecting human rights in AI systems themselves, meaning that these principles should not only apply to the development, management and users of AI, but should also be embedded in AI systems by the developers. China's Code of Ethics for a New Generation of Artificial Intelligence stipulates that "the rights to privacy, freedom, dignity, security and other legitimate interests of the relevant subjects shall be fully respected and safeguarded". The EU Code of Ethics for Trustworthy Artificial Intelligence emphasises that "humans interacting with AI systems must be able to maintain full and effective self-determination over themselves and be able to participate in the democratic process", and this ethical guideline sets the upper limit of AI's capabilities, restricting the emergence of AIs capable of deceiving, manipulating and coercing humans. Medical robotics applications are often confronted with the issue of human autonomy, for example, when a patient chooses hospice care and the AI's assessment is to

continue treating the patient, we need to choose between respecting human autonomy and conceding it. From these comparisons, we can also see the different attitudes of AI ethical governance actors towards the technology: based on deep-rooted concerns about the technology, the EU Code of Ethics for Trustworthy Artificial Intelligence is more inclined to believe that AI will have a negative impact on the protection of human rights, even to the extent of using words such as "coercion", "deception", and more emphasis on the "coercion", "deception", and "deception". The EU's Code of Ethics for Credible AI is more inclined to believe that AI will have a negative impact on human rights protection, and even uses terms such as "coercion" and "deception", placing more emphasis on regulation; while China's Ethical Guidelines for a New Generation of Artificial Intelligence only puts forward a kind of normative requirements, with a mandatory implication that is not as strong as the former.

Safety is also a principle mentioned by other AI ethical governance bodies besides IEEE, and its main content is to avoid and prevent risks and harms that may arise from AI. China's Code of Ethics for the New Generation of Artificial Intelligence provides for risk prediction, monitoring, assessment, early warning, management, and disposal. The U.S. Guidelines for the Regulation of Artificial Intelligence Applications focuses on risk assessment and management, and states that it is important to determine "what risks are acceptable and what risks are unacceptable." Google has made a commitment from an AI developer's perspective to "develop according to best practices in AI safety research." In addition to the general focus on safety, the OECD also puts forward "robustness", which emphasises the ability of AI systems to withstand and overcome adverse conditions, and also gives specific ways to follow AI principles, such as ensuring traceability of AI behaviour and continuous risk management at each stage of the AI system lifecycle. The EU and UN documents also refer to the need to prevent AI from harming the natural environment and other living beings, and to "ensure the safety of humans, the environment and ecosystems".

**Ethical design of cross-cultural artificial intelligence What is possible? --Based  
Designers Cultivating Ethical Responsibility**

(summary)

Ziyi MA

(College of Marxism, Xi'an Jiaotong University, Xi'an, Shaanxi, 710049;  
member of IS4SI Representative Office in Beijing (formerly IS4SI China Chapter))

This statement argues that the cultivation of designers' sense of ethical responsibility is the key to the ethical design of cross-cultural AI under the "anthropocentric" paradigm. Therefore, I believe that it is an effective way to solve the problem of ethical design of cross-cultural AI from the designer's level. Cultivating designers' awareness of ethical responsibility can start from two aspects: external ethical principles and internal moral ability. Firstly, to strengthen the implementation of designers' ethical responsibility from the outside; secondly, to ensure that designers are able to have a cross-cultural vision and fulfil their ethical and moral responsibilities from the inside.

External ethical constraints can be implemented in two ways: firstly, designers can be provided with a handbook of cross-cultural ethical principles for reference; secondly, designers can be constrained in their behaviours by formulating something like the Hippocratic Oath in medicine. In the case of the former, the key is to see both the "commonality" of ethical principles based on different cultural traditions and the "incommensurability" between them. According to Paul Triolo, "the obstacle to the widespread use of AI is clearly the privacy issue, which is extremely difficult to balance", but there is also a broad consensus that "AI should benefit all of humanity" and "the principle of the public good." At the same time, there is a need for an "ethical audit" governance mechanism to urge designers to implement the relevant ethical guidelines. Mökander&Floridi suggest that we can start with an "ethical audit"

governance mechanism, which refers to a governance mechanism that organisations and designers of AI systems can use to control or influence AI systems. This refers to a governance mechanism that can be used by organisations and designers of AI systems to control or influence the behaviour of the AI and, in practice, to assess whether an entity's behaviour complies with the relevant principles or norms through a structured process. In the case of the latter, groups of engineers could develop culturally appropriate engineering 'oaths' that address two questions: first, the procedural question of how the 'oaths' are formed; and second, what the 'oaths' cover. For the solution of these two problems, we can refer to the formation process of the Hippocratic Oath and its content setting.

The development of designers' intrinsic ethical ability is carried out in three main ways: firstly, designers actively participate in the ethical practice of human-computer interaction, deeply experience the advantages and disadvantages that AI bring to people, and redesign or improve AI according to the advantages and disadvantages, so as to make them more in line with the well-being of human beings. Secondly, designers develop a deep cultural understanding and a high degree of ethical sensitivity in the process of human-computer interaction, and cultivate a certain degree of "moral imagination". Third, designers are given a degree of autonomy in ethical decision-making. By encouraging employees to take positive action when they see something that needs to be corrected, or by actively encouraging them to use their imaginations to explore potential problems with various products, organisations can effectively validate the systems being developed and prevent bad consequences from occurring. The key to this precaution is that the organisation gives employees autonomy, so they are given permission to think on their own and thus they are able to use their full agency to investigate things that could go wrong.



**Ethical application of social robots from a cross-cultural perspective: Based  
on consumer perspective  
(Summary)**

Xuelin Wang

(College of Marxism, Xi'an Jiaotong University, Xi'an, Shanxi, 710049; member of  
IS4SI Representative Office in Beijing (formerly IS4SI China Chapter))

At present, we are transitioning from weak artificial intelligence to a strong artificial intelligence era. Social robots are entering every aspect of human life, so what will be the development trend of robots in the future? Maybe humanoid robots will become the mainstream of social robots.

So when intelligent machines have human thinking, and have human appearance, sound and behavior, will users of different cultural backgrounds fall into the Uncanny Valley hypothesis? Therefore, from the perspective of users, in practice, cultural differences and ethical issues have become one of the important challenges faced by cross-cultural social robots.

The consumption tendency and preference of consumers in different countries are affected by the cultural environment, the setting of laws and regulations in different regions, and the safety issues of artificial intelligence agents will lead to the difference in the purchase intention of social robots, especially humanoid robots. Therefore, it is of great significance to discuss the design and ethical rules of social robots from the perspective of consumers, so as to provide guidance for the development of culturally adaptable social robots.

The main points are as follows:

1. Cultural sensitivity and respect: cross-cultural social robots must show respect and sensitivity to different cultures. This involves understanding cultural differences

and avoiding offence or misunderstanding to ensure that the interaction between the bot and the user is positive.

2. Ethical algorithms: Developing algorithms for cross-cultural robots must consider ethical principles, including privacy protection, fairness, and transparency. For example, when processing user data, robots must comply with privacy regulations and ensure that users' data is not misused.

3. The challenge of cultural diversity: Communication between different cultures may involve different social norms, etiquette and values. The robot must deal with these differences without favoring or discriminating against either side.

4. Power dynamics of social robots: Social robots have a certain amount of power in communication, so power dynamics and potential abuse must be handled carefully. This includes avoiding manipulating users or spreading harmful information.

5. User education: Users need to understand the capabilities and limitations of cross-cultural social bots. Robot manufacturers and developers have a responsibility to educate users and ensure they understand the purpose and function of the robot.

The development of social robots needs to be promoted by multiple disciplines, such as artificial intelligence, ergonomics, cognitive psychology, social science and art design. However, at present, from the perspective of users, specific ethical principles need to be formulated for specific cultural backgrounds, so that social robots can meet the needs of target users and conform to local moral norms. Its appearance design needs to take into account the habits and preferences and acceptance of users from different cultures to provide a more user-friendly experience. At the same time, through user feedback and evaluation, the interaction mode of social robots is constantly improved to adapt to the needs of users in different cultural backgrounds.