What Culture is ChatGPT's AI?

Juhani Rauhala[1] and Tong Xin[2]
[1]University of Jyväskylä, Jyväskylä, Finland
[2]Queen Mary University of London, London, United Kingdom

juhani.jr.rauhala@jyu.fi
t.xin@qmul.ac.uk

Abstract: Artificial intelligence (AI) is increasingly used in many fields. It is widely perceived as an intelligent system that does not just follow algorithms but can demonstrate independent judgment. AI is especially important in handling complex tasks. The responses from the most popular AI chat interface, Chat Generative Pre-Trained Transformer (ChatGPT), are used for guiding decision-making processes and can provide informative answers or recommendations for a wide variety of scenarios. Such scenarios can include job applicants screening or planning for military strategizing. However, similar to human intelligence, which is characterized by cultural biases affecting thought processes and interactions, AI's outputs may also be influenced by inherent cultural biases, whether programmed or incidental, potentially leading to inappropriate outcomes. Given that AI is often used to assist or replace human decision-making, it is particularly important to examine its potential cultural biases. This study aims to assess the cultural bias of ChatGPT by comparing the responses of ChatGPT with established cultural indices, employing the cultural parameters defined by House et al. (2004) and Hofstede (2001). The methodology involves selecting specific cultural parameters, formulating a set of questions representative of these parameters, and analyzing ChatGPT's responses. By using appropriate statistical methods, this study intends to compare ChatGPT's manifested culture with the known values of existing cultures as defined by the GLOBE and Hofstede parameters.

Keywords: Artificial intelligence, Military Planning, Chatgpt, Cultural Parameters, Societal Implications of Technology

1. Introduction and Background

AI represents a technological development employed across a wide variety of applications. Internet users can interface with AI through the familiar and accessible format of online chat (Hall, 2024). Such popular platforms include Microsoft Copilot, Google Gemini, and the immensely popular ChatGPT (Ortiz, 2024). ChatGPT was the first and some still consider it the best AI chatbot (Dreibelbis & Duffy, 2024; Ortiz, 2024). It is a multimodal generative AI that "learns" by interacting with its users (Naik et al., 2023). Users can apply AI by posing questions and problems to it via chat interfaces, with responses provided by an AI engine. The AI engine used by ChatGPT is OpenAI (Hall, 2024; Schulman et al., 2022).

AI should not be interpreted as "intelligence" in the human sense, including a lifetime's background of experiences, cultural exposures, and empathetic aspects of interaction. The human concept of intelligence is influenced by culture (Sternberg, 2020). Nonetheless, AI, especially in chat formats like GPT, is often interpreted – and sometimes misunderstood – as intelligence through a human lens. Indeed, ChatGPT is designed for human use and to simulate an intelligent human counterpart (Colas et al., 2022). Culture and intelligence (as human-centrically defined) are related in that the definition or recognition of intelligence is dependent on the culture where it is displayed (Sternberg, 2020). This raises the question of how AI, as distinct from intelligence exhibited by humans, through its outputs, may be perceived and applied between cultures. Our work should help to address this issue.

The applications of AI are becoming more and more widespread, from helping employers screen job applications (Kelly, 2024) to alleviating people's loneliness (Broadbent et al., 2023), and even influencing military strategic planning (Flournoy, 2023) and real-time combat situations (Pawlyk, 2020). These applications not only require AI to communicate effectively with humans, whether through assistive robot or interfaces like voice, video, or chat, but also challenge AI's ability to recognize and adapt to different cultural contexts. Such adaptation would be an ability for the AI to exhibit "cultural intelligence," as described by Alifuddin & Widodo (2022). Cultural factors are known to influence human thought and communication (Hwa-Froelich & Vigil, 2004), which is critical to the accuracy of information or advice provided by AI, especially in areas where cultural differences may have significant implications, such as military strategy. Approaches to warfare can vary by culture. Lee (2020) asserts that societal culture plays a role in national militaries' environments and their missions.

Although some attention has been given to cultural aspects of AI, most studies have focused on assessing human responses to AI information rather than directly exploring how AI processes and reflects cultural parameters. Some researchers have noted that the lack of bona fide culture in AI can lead to devaluations of some of its products by consumers (Tubadji et al., 2021).

Additionally, concerns have been raised about bias in AI (Yeh & Clare, 2023). These include controversial ones that have led to contentious discussions in the public domain. The biases include racial (Levin, 2016), gender (Hamilton, 2018), and species (Hagendorff et al., 2023). AI bias in medicine may result in unsuitable treatments (Tejani et al., 2023). Susceptibilities to gender bias in military applications of AI have been studied (Chandler, 2021). Google's Gemini image generator exhibited bias that resulted in inaccurate portrayals of historical figures (Lanum, 2024). A gender bias has been found in a hiring application of AI (Hamilton, 2018). AI bias has also been shown in politics (Baum & Villasenor, 2023) and in public diplomacy (Huang, 2024). Such biases can negatively affect the objectivity or utility of the AI. Therefore, in light of these considerations, understanding AI's performance in cultural adaptability has become both important and urgent, even though this field is still in its infancy.

AI is being anticipated to learn cultures (Colas et al., 2022) and to teach cultures (Johnson & Valente, 2009). Some researchers discuss "the culture of AI" (Elliott, 2019). We ask instead "What culture is ChatGPT's AI?" It not only involves the development of artificial intelligence technology, but also touches on the deep-seated issues of its interaction with human culture. If we can determine the culture of ChatGPT's AI, then we may predict the potential inherent bias in its outputs. The various inquiries, problems, and situations for which such outputs can be applied are limited by the imagination. The outputs could be used for cyberdefense or cyberwarfare purposes. It is not clear whether or how any inherent culture of ChatGPT may result in sub-optimal outputs for cyberdefense or cyberwarfare applications – this merits separate study. Nonetheless, our work should have relevance to such scenarios to the extent that military practitioners, including those engaged in cyberdefense or cyberwarfare, expect or wish to apply their own cultures to their planning or strategies.

Our paper proposes a method to assess ChatGPT's AI using widely accepted cultural paramaters, describes a necessary feasiblity assessment, identifies a potential obstacle, and concludes with a brief summary.

2. Hypothetical Framework and Planned Methods

Our research aims to investigate the cultural dimensions encapsulated by OpenAI's ChatGPT through its conversational interface. If we can determine cultural attributes of the AI by applying established methods and parameters, we may gain knowledge about the cultural bias inherent in its responses. The work is exploratory.

To this end, we will investigate the culture of ChatGPT's AI by posing to it culture-differentiating multiple-choice questions and recording its responses. The questions will be selected from surveys that were used by House et al., (2004) and Hofstede (2001). Hofstede and House et al.'s expansive works on cultural measurements are widely recognized in the research community and have been the basis for numerous studies and for proposals for alternative cultural frameworks (Adamovic, 2023; Javidan et al., 2006; Venaik & Brewer, 2010). The surveys of House et al., (2004) (herein also referred to as the GLOBE study) and Hofstede (2001) contain 199 scale questions that assess several cultural characteristics. The characteristics include individualism, uncertainty avoidance, and assertiveness; some of which may have similarities to the warfare traits of Pitman (2011). (Pitman (2011) describes some warfare traits as aggression, risk taking, ingroup altruism, outgroup xenophobia, dominance and subordination, and territoriality.) Their survey work and their analyses of responses that they acquired resulted in insights into differentiations between cultures of 76 countries. The differentiations were made to varying degrees between characteristics whose presence varied in commonality between respondents of the studied nationalities. Correlations between the parametric survey results of House and Hofstede exist that demonstrate validity of their parameters that are similarly defined.

First, we will choose Hofstede or GLOBE study parameters that not only distinguish cultures effectively but also have relevance to pertinent contexts, including military contexts. Then, we will gather questions from Hofstede's (2001) or House et al.'s (2004) research that match these chosen parameters. For data-gathering, we will interact with OpenAI using ChatGPT.

The AI will be instructed to assume a role as a human being maximally representative of its own processing characteristics for the purpose of answering several questions. The questions would indicate the selected cultural parameters.

Our work will select questions using the following criteria:

1. They must be multiple-choice.
2. They must have maximum relevance.
    a. This will be measured by their influence on the parameters or indices that we deem to be pertinent. The pertinent parameters or indices will be selected based on their similarity or

importance to hypothetical use-cases that we contrive. Such use-cases may include cross-cultural communication, development of military strategy, or methods of adversarial or benign intelligence gathering.

3. Their responses as acquired and analyzed in Hofstede's (2001) and House et al.'s (2004) works should be maximally differentiating between cultures.

We will assess the feasibility of posing the questions as such to ChatGPT. We will then assess the feasibility of obtaining useful responses from ChatGPT. This will be done be analyzing the collected questions for the desired cultural indices. The analysis process will include a judgement of whether a given question could be posed to ChatGPT in its original phrasing with a reasonable expectation of a useful or sensible response. A potential obstacle to such an expectation is that unlike in Hofstede's (2001) and House et al.'s (2004) works, the respondent to the questions is AI.

3. Conclusion

As use of AI increases for a breadth of applications, so does the importance of understanding its potential intrinsic or inherent biases. Because AI communicates and interacts with humans, culture plays some role in its communication process. The ChatGPT interface is simple and very popular, and thus is a reasonable tool for investigating cultural manifestations of AI. Knowledge of the cultural parameters of ChatGPT's AI should help its users assess the suitability of its outputs. Such knowledge may have implications, perhaps profound, when AI is used for security and defense strategizing. Our work may also give insight into the origins of biases it has exhibited, and have implications for the use of AI for simulatory data-gathering.

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