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Article

What Does ChatGPT Think about the Scientification of Yijing?

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Abstract: The debate surrounding the scientific interpretation of Yijing has been ongoing, yet thus far, a systematic, comprehensive, and objective explanation of its scientization remains elusive. The intricate nature of Yijing's scientific content makes it challenging to gain universal acceptance. The emergence of ChatGPT presents a new opportunity to delve into the scientific aspects of Yijing. Leveraging the support of ChatGPT, this paper explores the potential for scientization of Yijing and the possibility of establishing a new scientific research paradigm through in-depth dialogue with ChatGPT. It examines various aspects including the evolution of scientific paradigms, perspectives from detractors and opponents of Yijing, as well as existing challenges and approaches to its scientization. The ideas presented in this paper may offer enlightening insights for further exploration of Yijing.

Keywords: Yijing; ChatGPT; Scientification; New paradigm

I. Introduction

The debate surrounding Yijing, both within China and internationally, has persisted for a significant period of time. As the creator of this cultural classic, China recognizes its central position in Chinese culture. Many scholars approach Yijing from a philosophical standpoint, which is generally accepted by both Chinese and Western scholars. It is commonly believed that Yijing possesses unique cultural value and offers guidance for the advancement of human society. However, the predictive aspect of Yijing, while accurate, has faced various degrees of scrutiny from both Chinese and Western societies due to its qualitative nature and inherent uncertainties. In the face of the scientific era, finding a path to establish it as a new academic paradigm has become an urgent issue for many.

Based on this premise, the author conducted a review of the latest research literature and discovered a few publications that discussed Yijing in relation to ChatGPT. [1,2] For instance, literature [1] explores the potential combination of Yijing and disruptive innovation theory, with ChatGPT mainly addressing business-related inquiries. Additionally, there are some literature works that touch upon Chinese culture utilizing ChatGPT. [3] However, these existing publications only scratch the surface of the topic. For example, one publication engages in dialogue with ChatGPT, focusing on the strengths and limitations of qualitative exchanges.

In order to further explore the new paradigm of divination and prediction within Yijing, this paper engages in a more comprehensive dialogue with ChatGPT. It includes these key areas: the developmental stages of scientific paradigms, potential approaches to divination in Yijing, the design of a fresh paradigm for Yijing, and so on. Ultimately, this paper aims to offer fresh insights and novel ideas concerning the global significance of Yijing.

It should be noted that there are three commonly used translations of Yijing into English: Yijing, I Ching, and the Book of Changes. The author uses the Chinese pinyin of Yijing, while ChatGPT will have I Ching and the Book of Changes. To maintain the original state of ChatGPT and preserve its expression. Therefore, there will be these three different expressions in the article.

II Can Yijing become a new paradigm for scientific research?

The term "paradigm" was introduced by Thomas Samuel Kuhn, a renowned American philosopher of science, in 1962 in his work "The Structure of Scientific Revolutions." Paradigm refers to the theoretical foundations and operational norms that guide traditional scientific practices. It encompasses the worldview and behavioral patterns scientists adopt within a particular scientific discipline. [4,5]

Currently, scientific research has formulated four distinct paradigms. First, the empirical paradigm describes natural phenomena based on observation and experimentation. Second, there is the modeling paradigm, which involves constructing models based on scientific discoveries regarding limited time and space to simulate certain phenomena. Third, the computational science paradigm utilizes computer simulations to explore complex phenomena. Finally, the scientific big data paradigm relies on data-intensive approaches, integrating theory, experimentation, and simulation to perform comprehensive investigations.

These four paradigms have undergone successive stages of development, with each stage building upon the previous one. Examination of these paradigms reveals that they essentially represent a portion of the universe and predominantly embrace a bottom-up approach. However, future paradigms might lean towards a more top-down perspective. To delve deeper into this question, the author engages in the following conversation with ChatGPT.

Q1: The four paradigms of general understanding include the following four types: empirical research, theoretical research, computational simulation, and data-intensive. What do you think?

A: Yes, the four paradigms of general understanding typically include empirical research, theoretical research, computational simulation, and data-intensive approaches. These paradigms provide different means to gain insights and deepen our understanding of various phenomena. Empirical research involves gathering and analyzing data through experimentation or observation. Theoretical research focuses on developing conceptual frameworks and explanatory models. Computational simulation employs computer-based methods to simulate and study complex systems. Data-intensive approaches involve analyzing large datasets to identify patterns and trends. Together, these paradigms contribute to advancing our knowledge and understanding of the world around us.

1. Empirical research: This paradigm involves gathering and analyzing data through systematic observation, measurement, and experimentation. Empirical research aims to test hypotheses, validate theories, and make evidence-based conclusions. It often involves conducting experiments, surveys, or observational studies to collect data that can be analyzed statistically or qualitatively.

2. Theoretical research: This paradigm focuses on developing and refining conceptual frameworks, theories, and models to explain and predict phenomena. Theoretical research involves critical analysis, synthesis of existing knowledge, and the formulation of new hypotheses. It often draws on existing theories and empirical evidence to generate new insights and propose explanations for observed phenomena.

3. Computational simulation: Computational simulation involves creating virtual models or simulations of complex systems or phenomena using computational methods. By defining the rules and parameters of the system, researchers can simulate and explore its behavior, dynamics, and interactions. Computational simulation allows researchers to test hypotheses, observe outcomes, and gain insights that would be difficult or impractical to achieve through direct experimentation.

4. Data-intensive approaches: This paradigm involves analyzing large and complex datasets to gain insights, identify patterns, and extract meaningful information. It often utilizes statistical techniques, data mining, machine learning, and other computational methods to explore data and draw conclusions. Data-intensive approaches can uncover hidden relationships, provide empirical evidence, and support decision-making processes across various fields.

As an AI language model, I don't hold personal opinions, but I recognize the value of these paradigms in advancing knowledge across disciplines and fostering interdisciplinary research. They offer different ways of approaching and investigating complex phenomena, providing a rich toolkit for researchers to gain insights and expand understanding.

Q2: Is Alphago Zero a new paradigm?

A: Yes, AlphaGo Zero represents a significant advancement in the field of artificial intelligence. It introduced a new paradigm by utilizing a self-learning approach without any prior human knowledge. AlphaGo Zero achieved remarkable performance and demonstrated the potential of reinforcement learning and neural networks in complex decision-making tasks.

AlphaGo Zero, developed by DeepMind, is a computer program that utilizes deep reinforcement learning techniques. It learns to play the game of Go by playing against itself and refining its strategies through millions of iterations. This approach differs from previous versions of AlphaGo, which relied on human-expertise and vast amounts of data.

By starting with completely random moves, AlphaGo Zero gradually improves its playing abilities and achieves superhuman performance. This self-play reinforcement learning paradigm has proven to be highly effective and has opened up new possibilities for AI research and applications beyond the game of Go.

Overall, AlphaGo Zero can be considered a groundbreaking development in the AI field, showcasing the power of self-learning algorithms and their potential for solving complex problems.

Q3: Although AlphaGo Zero uses deep reinforcement learning to generate data for self-training, it is essentially based on the rules of Go. That is, generating data based on rules, and then self-learning evolution?

A: Yes, you're correct. AlphaGo Zero is based on the rules of the game of Go. Initially, it generates data by playing games against itself, following the rules of Go. Through this self-play process, it collects training data, evaluates the quality of different moves, and updates its neural network model to improve its performance.

The self-training and evolution of AlphaGo Zero happen through a combination of deep neural networks and reinforcement learning. By continuously playing and learning from its own experiences, AlphaGo Zero gradually refines its strategies and becomes increasingly proficient in playing Go.

While AlphaGo Zero is grounded in the rules of Go, its ability to improve and surpass human performance through self-play and reinforcement learning represents a significant leap in AI capabilities. The approach has the potential to be applied to other domains and tasks beyond Go, showcasing the promise of deep reinforcement learning methods.

Q4: What are your predictions for the new paradigms of scientific research that may emerge in the future?

A: As an AI assistant, I can provide you with some predictions for potential new paradigms of scientific research that may emerge in the future. Here are a few possibilities:

1. Interdisciplinary collaboration: Future scientific research will become more interdisciplinary, with increased cooperation and communication between different disciplines. This will promote knowledge integration and innovation.

2. Digitalization of science: With advancing technologies, scientific research will become more digitalized. The collection, storage, and analysis of research data will be more comprehensive and efficient.

3. Big data and artificial intelligence: Big data and artificial intelligence technologies will play an increasingly important role in scientific research. They will help scientists discover patterns, make predictions, and optimize experimental designs within vast amounts of data.

4. Open science: The open science movement will gain further momentum. Research data, code, and results will be more transparent and shared, enhancing the reproducibility and impact of scientific endeavors.

5. Cross-cutting domains: Future scientific research will focus more on global challenges and human needs, encompassing fields such as environmental science, sustainable development, social sciences, and fostering cross-disciplinary collaborations to address real-world problems.

These are just some possibilities, and the development of future scientific research will largely depend on technological advancements and societal demands.

Author's note: It seems that ChatGPT did not provide specific paradigm predictions for scientific research, but only provided some possible suggestions. These suggestions don't seem to be very disruptive either.

Q5: Can divination prediction of Yijing become a new Paradigm?

A: The I Ching, also known as the Book of Changes, is an ancient Chinese divination text. It has been utilized for centuries as a method to gain insights and guidance on various aspects of life. While the I Ching holds cultural and philosophical significance, it is not considered a paradigm in the scientific sense.

Scientific paradigms typically involve rigorous empirical testing, theoretical frameworks, and systematic observation to understand and explain phenomena. They are characterized by evidence-based methodologies and a consensus among the scientific community.

Divination methods like the I Ching are often based on intuitive or mystical interpretations of symbols, patterns, or chance events. While they may offer subjective guidance or perspectives, they do not adhere to the empirical and theoretical foundations that scientific paradigms require.

That being said, it is worth noting that some individuals may find personal meaning or derive insights from using divination practices like the I Ching. These practices can sometimes stimulate reflection, creativity, or contemplation.

However, it is important to differentiate between personal or spiritual beliefs and scientific paradigms. Scientific research focuses on systematic and evidence-based investigations, while divination practices operate within a different framework. The establishment of a new scientific paradigm involves rigorous scrutiny, experimentation, and reproducibility.

Ultimately, the I Ching and similar divination methods are considered outside the realm of scientific paradigms but can still hold cultural, philosophical, or personal significance for those who engage with them.

III The main problem that Yijing cannot be recognized by everyone

The controversy of Yijing in China and the West is mainly due to the fact that people evaluate Yijing according to the requirements of the paradigm of scientific research. How to talk to ChatGPT around this issue.

Q6: What do you think are the main issues that have been debated in the Yijing?

A: The Book of Changes, also known as the I Ching, is an ancient Chinese divination text. While it has been highly regarded for centuries, there have been some criticisms and arguments against it. Here are a few main arguments:

1. Lack of Empirical Evidence: Critics argue that the Book of Changes is based on subjective interpretations and lacks empirical evidence to support its claims. They contend that the divinatory techniques used in the book have no scientific basis.

2. Ambiguity and Vagueness: Some argue that the Book of Changes is written in a way that allows for vague and ambiguous interpretations. Critics claim that this ambiguity makes it easy to apply the book's insights to any situation, thus diminishing its practical value.

3. Cultural Relativity: Critics argue that the Book of Changes is rooted in ancient Chinese philosophy and cosmology, which may limit its relevance and applicability to other cultures and time periods. They contend that its principles may not hold universal truths.

4. Determinism vs Free Will: The Book of Changes is often seen as promoting a deterministic view of life, where events are predetermined and human actions are subject to external forces. Critics argue that this conflicts with the concept of free will and personal agency.

It's important to note that while these arguments exist, the Book of Changes continues to be widely studied, appreciated, and utilized by many as a source of wisdom and guidance.

Q7: What are the main arguments against Yijing?

A: The I Ching, or Yijing, has been a subject of debate and interpretation for centuries. Some of the main issues that have been debated in the context of the I Ching include:

1. Interpretation of Symbols: The I Ching consists of hexagrams, which are composed of lines. There have been differing interpretations of the symbols and meanings associated with each hexagram and line. Scholars and practitioners debate the significance of each symbol and its relevance to divination and decision-making.

2. Methodology of Divination: There are different approaches to using the I Ching for divination. Questions arise regarding the methods of casting hexagrams, interpreting the resulting readings, and applying them to specific situations. Some debate the reliability and effectiveness of divination practices, while others focus on refining and adapting the methodologies.

3. Philosophical and Metaphysical Concepts: The I Ching contains philosophical and metaphysical concepts, such as the interplay of yin and yang, the five elements, and the notion of change as an inherent aspect of existence. These concepts have been subjects of interpretation and debate, with various perspectives on their meaning and application.

4. Cultural and Historical Context: The I Ching has a rich cultural and historical context rooted in ancient China. Scholars debate the origins, authorship, and transmission of the text, as well as its relevance and adaptability in contemporary times. There are also discussions on the cultural and societal impact of the I Ching throughout history.

5. Relevance and Application: Another area of debate is the practical application of the I Ching in different domains, such as personal guidance, decision-making, and problem-solving. Some question the efficacy of using the I Ching in modern contexts, while others argue for its continued relevance and value.

It's important to note that perspectives on these issues can vary greatly depending on cultural, philosophical, and personal viewpoints. The debates surrounding the I Ching reflect the ongoing exploration and interpretation of its text, symbols, and concepts by scholars, practitioners, and individuals interested in its wisdom and guidance.

Q8: What are the main arguments against Yijing?(second answer)

The Book of Changes, also known as the I Ching, is an ancient Chinese divination text and philosophical work. While it has been highly regarded and influential throughout history, there have been some arguments against its validity and efficacy. Here are some main arguments critics have put forth:

1. Lack of Empirical Evidence: Critics argue that the divinatory practices and predictive nature of the Book of Changes lack empirical evidence to support their effectiveness. They contend that the interpretations and predictions based on the hexagrams and lines in the book can be subjective, arbitrary, or open to multiple interpretations.

2. Superstition and Pseudoscience: Some criticize the Book of Changes as being rooted in superstition and pseudoscience. They argue that the use of random processes such as coin tossing or yarrow stalk manipulation to generate hexagrams may not have any meaningful connection to the actual outcomes or events.

3. Ambiguity and Vagueness: Critics claim that the language and symbolism used in the Book of Changes can be vague, ambiguous, and open to personal biases. They argue that the interpretation of the hexagrams and lines can be highly subjective, making it difficult to derive clear and concrete guidance.

4. Cultural and Historical Limitations: Some argue that the philosophical framework and cultural context of the Book of Changes may not be applicable or relevant to different cultural and historical contexts. They assert that the book's principles may not universally apply or resonate with people outside of the traditional Chinese cultural framework.

5. Ethical Concerns and Personal Responsibility: Critics raise concerns about the reliance on divination and external guidance from a text like the Book of Changes. They believe that individuals

should take personal responsibility for their choices and actions, rather than relying on external or supernatural sources for decision-making.

It's important to note that these arguments against the Book of Changes do not necessarily invalidate its cultural, historical, or philosophical significance. Different individuals and cultures may have different beliefs and perspectives on the book's value and application.

Author's note: ChatGPT has very high intelligence, but in applications, the same question cannot have the same answer. The authors repeated similar phenomena after multiple attempts by the interlocutors. This may also be a very unique aspect of ChatGPT. It may also be a big question of "uncertainty in the answer".

Q9: In addition to the above, what are the other objections? (additional problem)

A: In addition to the arguments mentioned earlier, here are a few more objections that have been raised regarding the Book of Changes:

1. Lack of Scientific Methodology: Critics argue that the divinatory practices and techniques in the Book of Changes do not adhere to rigorous scientific methodology. They contend that the absence of controlled experiments and reproducible results makes it difficult to assess the reliability and validity of the divination process.

2. Cultural Bias and Gender Roles: Some critics argue that the Book of Changes reflects a cultural bias and reinforces traditional gender roles. They claim that the interpretations and advice given in the text may perpetuate gender stereotypes and limit the empowerment of women or marginalized groups.

3. Skepticism about Divination: Skeptics, in general, question the efficacy and legitimacy of divination practices, including the Book of Changes. They argue that divination methods, including coin tossing or yarrow stalk manipulation, are simply random processes with no inherent ability to provide meaningful insights or predictions.

4. Interpretation Variability: Critics point out that the Book of Changes has been subject to various interpretations throughout history. They argue that the diverse range of interpretations can create confusion and disagreement among users, undermining the consistency and reliability of the book's guidance.

5. Modern Rationality: Some object to the relevance of the Book of Changes in the modern era, advocating for a more rational and scientifically-based approach to decision-making. They contend that relying on an ancient divination text may not align with contemporary modes of thinking and problem-solving.

It's important to recognize that these objections represent diverse perspectives and do not necessarily diminish the book's historical or cultural significance. The Book of Changes continues to hold value for many individuals as a philosophical and contemplative work, even if its divinatory aspects are subject to criticism.

Q10: What do you think are the ways to solve the problems of Yijing?

A: The Book of Changes, also known as the I Ching, is an ancient Chinese divination text. While there are various interpretations and perspectives on its use, here are a few general ways one can approach the problems or challenges associated with it:

1. Study and Understanding: Deepen your knowledge of the Book of Changes through extensive study and research. Explore the history, philosophy, and symbolism behind the text to gain a greater understanding of its principles.

2. Application and Practice: Apply the principles of the Book of Changes in practical scenarios. Use its divination methods and hexagram interpretations to gain insights into specific situations and make informed decisions.

3. Interpretation and Adaptation: Recognize that the Book of Changes has been subject to multiple interpretations throughout history. Explore different schools of thought and adapt its teachings to suit your personal beliefs and circumstances.

4. Seek Guidance: Consult with experienced practitioners or scholars well-versed in the Book of Changes. Their expertise can provide valuable insights and guidance on how to approach and solve problems using its principles.

It's important to note that these suggestions are general in nature. The Book of Changes is a complex and profound text, and its practical application can vary depending on individual perspectives and cultural contexts.

IV Problems and approaches of the scientific development of Yijing

One of the main reasons why Yijing is not recognized by many people is the lack of scientific verification or falsification. To solve this problem, I had the following conversation with ChatGPT.

Q11: What are the problems of scientific Yijing?

A: The concept of a "Scientific I Ching" is not widely recognized or accepted within the field of science. The I Ching, or Book of Changes, is primarily regarded as an ancient Chinese divination text and a philosophical work rather than a scientific framework.

While some individuals may attempt to apply scientific methodologies or interpretations to the I Ching, it is important to recognize that these adaptations may not align with the conventional principles and methodologies of scientific inquiry. As a result, there are several challenges and limitations that may arise when attempting to approach the I Ching from a scientific perspective:

1. Lack of Empirical Evidence: The I Ching's divination methods and hexagram interpretations are not based on empirical data or experimental observations. As such, it may be difficult to apply scientific rigor or establish empirical evidences to support its claims.

2. Subjectivity and Interpretation: The interpretation of the I Ching can be highly subjective, depending on the individual's beliefs, cultural background, and personal experiences. This subjectivity makes it challenging to achieve the objectivity and reproducibility that are fundamental to scientific inquiry.

3. Testability and Falsifiability: Scientific theories and hypotheses are typically formulated in a way that allows them to be tested and potentially falsified. The I Ching's principles and concepts may lack the clarity and specificity required for testability and falsifiability within a scientific framework.

4. Integration with Existing Scientific Knowledge: Integrating the teachings of the I Ching with established scientific knowledge can be a complex endeavor. The I Ching is deeply rooted in ancient Chinese philosophy and cosmology, which may not align with modern scientific paradigms and theories.

It's important to approach the I Ching with an understanding of its historical and cultural context and recognize that its application and interpretation may differ from scientific methodologies.

Q12: What are your main suggestions for making the Yijing scientific?

A: While I understand your interest in exploring ways to align the I Ching with scientific principles, it's important to note that the I Ching is fundamentally a philosophical and divination text, not a scientific framework. However, if you are interested in exploring potential avenues for bridging the two domains, here are a few suggestions to consider:

1. Interdisciplinary Research: Encourage interdisciplinary research that explores the connections between the I Ching and scientific concepts. This could involve collaborations between scholars and practitioners from various fields, such as philosophy, psychology, sociology, or complexity science.

2. Empirical Studies: Support and conduct empirical studies to examine the potential effects or impacts of using the I Ching as a tool or guidance system. These studies could explore psychological, sociological, or even cognitive aspects, providing insights into why and how individuals interpret and apply the I Ching.

3. Symbolic Analysis: Investigate the symbolic and metaphorical aspects of the I Ching and explore potential correlations with scientific principles. This could involve analyzing hexagram meanings and symbols within the context of various scientific disciplines.

4. Computational Approaches: Adopt computational techniques to analyze the patterns and structure of the I Ching. This may involve exploring computational models, network theory, or complexity science to gain insights into the underlying principles or relationships within the text.

5. Neural Correlates: Investigate the potential neural correlates associated with the interpretation or use of the I Ching. This could involve neuroscientific research to understand how the human brain processes and responds to the symbolism and divination practices of the I Ching.

It's crucial to approach these suggestions with an open mind and acknowledge that the integration of the I Ching with scientific principles may still be challenging due to their distinct natures.

Q13: What are your expectations for the main application value of scientific Yijing?

A: As an AI language model, I don't possess personal opinions or expectations. However, I can provide some general insights into the potential application value that a "scientific I Ching" could offer:

1. Enhanced Understanding: A scientific approach to the I Ching could help foster a deeper understanding of its underlying principles and concepts. It may provide a framework for analyzing and interpreting the I Ching's symbolic language from a perspective that aligns with scientific methodologies.

2. Decision-Making Support: Applying scientific principles to the I Ching may contribute to developing decision-making support tools or techniques. By combining the wisdom of the I Ching with scientific analysis, it could potentially offer guidance or insights into complex situations and problem-solving.

3. Cognitive Exploration: A scientific lens on the I Ching may lead to a better understanding of how individuals perceive, interpret, and apply its teachings. This could contribute to the field of cognitive science by exploring the role of symbolism, metaphor, and intuition in decision-making processes.

4. Complexity and Systems Thinking: The I Ching's focus on patterns and relationships could resonate with scientific disciplines such as complexity theory and systems thinking. By exploring connections between the I Ching and these areas of study, it may offer new perspectives on understanding complex systems, both in nature and human society.

5. Cross-Disciplinary Insights: The integration of scientific principles and the I Ching could facilitate cross-disciplinary collaboration and exchange of ideas. This could lead to a synthesis of knowledge from diverse fields, such as philosophy, psychology, systems science, and cultural studies.

It's important to recognize that the application value of a "scientific I Ching" will depend on ongoing research, exploration, and critical evaluation. Its potential impacts may evolve as scholars, practitioners, and researchers delve further into this integration.

V Summary and Prospect

The study of Yijing holds significant potential in the 21st century. Scholars such as Zeng Shiqiang believe that Yijing will play a crucial role in the social development of this era. Furthermore, some researchers are exploring new academic paradigms that may emerge in a post-scientific age.

In the face of global developments and unprecedented challenges, such as the profound changes occurring in the Anthropocene, predicting the future trajectory of human society and effectively addressing potential problems can no longer rely solely on scientific methods. The scientific interpretation or new paradigm of Yijing may offer fresh perspectives and solutions for future social development, tackling new challenges faced by global progress.

The COVID-19 pandemic, spanning from 2019 to 2023, has significantly impacted humanity, showcasing the urgent need for solutions despite the advancements in science and technology and the deepening of globalization. Will similar pandemics arise in the future, affecting the entire world? These questions surpass the capabilities of current scientific understanding. The rich wisdom contained in the "Book of Changes," accumulated over thousands of years, and the traditional

Chinese medicine based upon it may prove instrumental in facing major global epidemics in the future.

In conclusion, as an AI assistant, ChatGPT can provide some general insights regarding the scientific aspects of Yijing. Yijing is a classical cultural work in ancient China that primarily explores philosophical contemplations on change and nature. Regarding the scientific interpretation of Yijing, some propose establishing connections and explanations between its principles and concepts with modern science to enhance understanding and practical applications. This may involve interdisciplinary research encompassing fields such as mathematics, physics, and systems science to explore patterns, principles, and potential applications. However, the scientific community still holds varied perspectives on how to incorporate Yijing into science, making it an ongoing subject of exploration and discussion.

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