

REVISITING ARISTOTLE'S PHRONESIS IN THE AGE OF ARTIFICIAL INTELLIGENCE

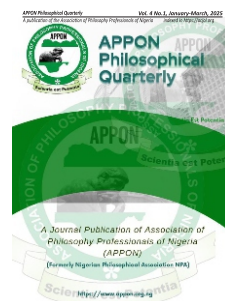
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ABSTRACT

The contemporary use of Artificial intelligence has raised a lot of questions on its safety and implications for the future of humanity, there have been calls from all quarters to ensure that these new systems do not add new problems to our already seriously troubled world. There is need to ensure that AI is designed in a way that it does not pose a threat to humanity and her future. Hence, have been calls to ensure that ethical values are incorporated in the design, development and use of AI. There is also a need to ensure that AI is humanized and suitable for future use. This paper examines the relevance and implications of Aristotle's concept of *phronesis* (practical wisdom) in the context of Artificial Intelligence (AI). As AI increasingly assumes decision-making roles, it explores the potential for AI to incorporate *phronesis*-like practical wisdom. The paper adopts the method of analysis to evaluate the challenges and limitations of integrating *phronesis* into AI systems, including contextual understanding, ethical considerations, and value alignment. Analysis reveals both synergies and tensions between *phronesis* and AI, highlighting the need for responsible AI development that prioritizes ethical considerations and human values. The paper concludes by offering recommendations for future research and development in AI and *phronesis*, emphasizing the importance of integrating practical wisdom into AI decision-making processes to ensure responsible and ethical outcomes.

Keywords: Aristotle, Phronesis, Practical Wisdom, Artificial Intelligence, AI Ethics, Decision-making, Responsible AI Development

Introduction

Technology has reshaped our world as well as the way we live our daily lives. The incorporation of AI into our lives is happening at a very rapid rate and we are all expected to move along with it or be left behind. The invention of modern artificial intelligence technologies has revolutionized the way we work, play and interact. There is an increase in our reliance on technology especially artificial intelligence and there is need to ensure that AI is made with consideration of issues that its use raises. It

is expedient because it is obvious that AI will influence our immediate and distant future. It is important for AI to be fashioned in a way that it will fit into our human society without exacerbating human problems in an already troubled world. With our increasing reliance on AI, there is a need to ensure that AI is designed in such a way that it reflects human values and ethics especially as AI is now beginning to take up decision-making roles or functions. Decision-making AI is now being used in business, education and other areas. There are speculations that it will be

used in medical fields, law enforcement and even religious worship. Ensuring that ethical considerations are put into place in the design of AI is a basic concern of many philosophers because as AI takes up decision-making roles, its effect on human beings is unavoidable and could be either positive or negative. Self-driving cars and robots are a good examples of the capacity of AI to make decisions. Self-driving cars, although designed to drive people from destination to another, will have to make choices to either move or stop. The same applies to a robot, which is meant to carry out tasks such as cooking or babysitting. There is need to ensure that the design of such AI which have effects on the lives of people be configured in a ways that it will recognize some human values like kindness, empathy, or to recognize human traits and values and act in ways that will not endanger human lives. This paper majorly deals with how Aristotle's *phronesis* can be incorporated into the design of AI. *Phronesis* translates into practical wisdom and it is expected to make us more virtuous. This paper examines how *phronesis* can help AI make better moral decisions and to incorporate aspects of human thinking into AI. This is to ensure that aspects of human thinking processes, judgment, and wisdom are incorporated into the design of AI for the end of humanizing AI and making it safer for human use.

Artificial Intelligence

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and learn like humans. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem solving. The term is

frequently applied to the project of developing systems endowed with the intellectual processes characteristic of human beings such as the ability to reason, discover meaning, generalize or learn from experience.¹

According to Stryker and Kavlakoglu, “applications and devices equipped with AI can see and identify objects, they can understand and respond to human language, they can learn from new information and experience, they can make detailed recommendations to users and experts, can act independently, replacing the need for human intelligence or intervention (a classic example being a self-driving car).”² AI systems are designed to handle tasks that typically require human intelligence, such as understanding natural language, recognizing images and objects, making decisions, solving problems, learning from data, etc.

The core areas of AI research and application include:

1. *Machine Learning (ML)*: Enables machines to learn from data and improve performance without explicit programming.
2. *Natural Language Processing (NLP)*: Allows machines to understand, interpret, and generate human language.
3. *Computer Vision*: Enables machines to interpret and understand visual data from images and videos.
4. *Robotics*: Integrates AI with physical systems to interact with the environment.
5. *Expert Systems*: Mimic human decision-making processes using rule-based systems.

AI is currently being used across industries.

¹ Jack B. Copeland, “Artificial intelligence” Britannica online Encyclopaedia. <https://www.britannica.com/technology/artificial-intelligence> Accessed

² Cole Stryker & Eda Kavlakoglu “What is Artificial Intelligence” IBM www.ibm.com/topics/artificial-intelligence 2024 accessed 29/11/2024

There are prospects for incorporating it into many industries, including: Healthcare, Finance, Transportation, Education, Customer Service, Cyber security to mention but a few.

There are different types of AI. They include:

1. *Narrow or Weak AI*: Designed to perform a specific tasks, like image recognition or language translation.
2. *General or Strong AI*: Aims to match human intelligence and perform any intellectual task.
3. *Superintelligence*: Significantly surpasses human intelligence and capability.

The benefits of adopting the use of AI are endless. It has the potential to improve how we live and work. Some such benefits include increased efficiency, improved accuracy, enhanced decision-making, personalized experiences. Despite the numerous advantages of using AI, there are also many issues that arise with its use. AI technology brings major benefits in many areas, but without the ethical guardrails, it risks reproducing real world biases and discrimination, fuelling divisions and threatening fundamental human rights and freedoms.³

Aristotle's Concept of *Phronesis*

According to Aristotle, *phronesis* (φρόνησις) is a Greek concept often translated as “practical wisdom” or “prudence.” For Frederick Copleston, prudence is cleverness as dealing with the means that lead to the attainment not of any sort of end but the true end of man, what is best for man; and it is moral virtue that

enables us to choose the right end so that prudence presupposes moral virtue.⁴ Aristotle describes *phronesis* as a vital intellectual virtue that enables individuals to make wise decisions in specific situations, balancing general principles with particular circumstances. Aristotle distinguishes between two intellectual virtues: *Sophia* (wisdom) and *phronesis* and described the relation between them and other intellectual virtue, *sophia* is a combination of *nous*, the ability to discern reality and *episteme* which is concerned with things which could not be otherwise e.g. the necessary truths and is logically built up and teachable.⁵ This involves reasoning concerning universal truths. *Phronesis* involves the ability to decide how to achieve an end, and the ability to reflect upon and determine good ends that are consistent with the aim of living well, for Aristotle, *phronesis* is one of the three types of appeal to character (*ethos*), the other two respected appeals to *arête* (virtue) and *eunoia* (goodwill).⁶ *Phronesis* is gained through experience; it is concerned with how to act in particular situations, having *phronesis* is both necessary and sufficient for being virtuous.

Key characteristics of *phronesis*:

1. *Practical knowledge*: *Phronesis* involves knowing how to act in actual situations.
2. *Deliberation*: It requires considering multiple perspectives, weighing options, and making informed judgments.
3. *Contextual understanding*: *Phronesis* involves grasping the specific context, including social norms, cultural values, and

³ UNESCO. “Ethics of Artificial intelligence” <https://www.unesco.org/en/artificial-intelligence/recommendation-ethics>

⁴ Frederick Copleston. *A History of Philosophy: Greece and Rome* (Continuum: New York 2006) p345

⁵ Aristotle. *Rhetoric* J. H., Freeze (Ed)

perseus.tufts.edu/hopper/text?doc=Persrus%3Atext%3A1999.01.0060%Abekker+page%3D1378a
Accessed 30/9/2024

⁶ Aristotle. *Rhetoric*

- individual circumstances.
4. *Moral awareness: Phronesis* incorporates ethical considerations, recognizing what is good and just.
 5. *Experience-based: Phronesis* is developed through experience, habitual acts, and practice

Phronesis is needed for effective decision-making, ensuring ethical conduct, in leadership positions, to aid personal growth and for encouraging civic engagement. To practicalize the use of Aristotle's concept of *phronesis* there is emphasis on the importance of balancing reason and experience, integrating ethics and practicality and developing wise habits. In our contemporary society, the use of *phronesis* has been revived and it has been incorporated in the field of ethics, leadership studies, for enhancing proper decision-making among others.

Phronesis and Decision-making

Often translated as practical wisdom, *phronesis* is crucial for understanding human decision-making. According to Aristotle, *phronesis* is an executive virtue that offers a way to navigate the practice of virtues for any given case to reach a final decision on the way forward. In Aristotle's work, *phronesis* is the intellectual virtue that helps turn one's moral instincts into practical moral action.⁷ It offers an alternative approach for ethical decision-making based on an application of accumulated wisdom gained through previous practice, dilemmas and decisions experienced by practitioners.⁸ For Kristjansson, "it works by providing the

practical know how needed to turn virtue into successful action While moral virtues enable us to achieve the end, *phronesis* makes us adopt the right means to that end."⁹ Alisdair MacIntyre further states: "both moral virtues and *phronesis* work in tandem in the absence of the former, *phronesis* degenerates into a certain cunning capacity for linking means to any end rather than to those ends that are genuine goods for man, whereas in the absence if *phronesis* we may be lost in a moral maze."¹⁰

Phronesis involves the ability to make wise and informed decisions in complex real world situations; practical wisdom gives guidance in situations where there are no straight cut answers to certain questions. It helps individuals to navigate uncertainty and help to handle complex situations where clear-cut rules or theories may not apply. Through this practical wisdom, one can navigate through situations with previous knowledge from experiences to solving new problems not previously experienced. It also helps to cultivate good character since it involves cultivating virtues like justice, fairness, compassion or empathy. *Phronesis* also enables individuals to strike a balance between competing values and priorities in decision-making, one can weigh options and choose the most appropriate solutions. It helps us to consider the long-term effects of our decisions rather than concentrating on short term goals.

Incorporating Phronesis into Artificial Intelligence Development

AI has numerous advantages. Its use has become part of our daily lives. It has been

⁷ Aristotle. *The Nicomachean Ethics: Wordsworth Classics of the World Literature*. (Hertfordshire: Wordsworth Editions Ltd. 1996) p

⁸ Mervyn et al. "Using practical wisdom to facilitate ethical decision making: a major empirical study of *phronesis* in the decisions narratives of doctors". *BMC medical Ethics*, Vol 22 no 16 2021 <https://bmcmmedethics.biomedcentral.com/articles/10.118//29>

⁹ Kristjann Kristjansson. "Phronesis as an ideal in professional medical ethics: some preliminary positioning and problematic." *Theorimed Bioethics* 201: 36(5) <https://doi.org/10.1007/s11012-0159338-4>

¹⁰ Alisdair MacIntyre. *After Virtue: A study of Moral theory*. (London: Gerald Duckworth & CO Ltd, 1981) p154

incorporated into all aspects of our modern technology-driven society. Christiana Pazzanese points out that

.. earlier on, it was popularly assumed that the future of AI would involve the automation of simple repetitive tasks requiring low level decision making but AI has rapidly grown in sophistication owing to more powerful computers and the compilation of huge data sets, machine learning has transformed countless fields including education because of its ability to sort analyse massive amounts of data and to learn over time.¹¹

With such huge leaps in AI technology, there has been positive reception of AI technologies since they have incorporated into all sectors of our society. There is also need to ensure that AI is also being used properly. This has been the reason why ethical considerations for the use of AI have been a burning issue in recent discourses on AI.

AI is now being incorporated into decision-making roles because of its ability to generate and manipulate data with great speed. It already plays a crucial role in the decision-making processes of many companies. It is increasingly used to inform policy and public sector decisions around the world. Some governments to detect potential criminals and terrorists, for example, already use supervised learning.¹² As AI takes on more roles previously carried out human beings, there are concerns on AI

not having human values. There is need for attention to be directed towards this aspect especially in designing and programming AI. As we increasingly rely on AI, especially in the aspect of decision-making, it is important that *phronesis* be incorporated into AI design to ensure that values and ethical codes are incorporated.

Incorporating *phronesis* into AI design and programming is very important because AI is not human and cannot understand human values, emotions, ethical codes, societal norms and other modes of behaviour, which is peculiar to human beings and will not act in ways that humans would if faced by certain situations that require the use of such behaviour. If these peculiarities of human beings are not considered in AI design and programming, there will be serious moral challenges arising from allowing AI to carry out roles that involve decision-making on matters that affect human lives and human society in general.

There is need for ethical considerations in the use of AI to ensure that AI does not create ethical problems in the society because of its widespread use. Christiana Pazzanese observes that “with virtually no US government oversight, private companies use AI software to make determinations about health and medicine, employment, credit worthiness and even criminal justice without having to answer for how they are ensuring that programs are not encoded consciously or unconsciously with structural biases. Worldwide business spending on AI is expected to hit 50 billion in 2020 and 110 billion dollars annually by 2024.”¹³

¹¹ Christiana Pazzanese. “Great promise but potential for peril” *The Harvard Gazette*, Oct 26, 2020 <https://news.harvard.edu/gazette/story/2020/10/ethical-concerns-mount-as-ai-takes-bigger-decision-making-role/>

¹² Philip Meissner and Yasuke Narita “Artificial Intelligence will Transform Decision Making . Here's How” Sept. 27 2023 <https://www.weforum.org/stories/2023/09/how-artificial-intelligence-will-transform-decision-making/>

¹³ Christiana Pazzanese. “Great promise but potential for peril” *The Harvard Gazette* Oct 26, 2020

Incorporating *phronesis* into Artificial Intelligence (AI) development involves integrating practical wisdom, ethics, and contextual understanding into its systems. This paper suggests the following ways to achieve this:

- i) *Incorporating a human value based design*: AI should be designed to align with human values; it is of utmost importance that AI be designed to incorporate human values and ethical principles. This is because AI is now being used in decision-making. If this is not done, there is a great risk that AI will become problematic for the society. Human values such as fairness, transparency and accountability should be incorporated into AI design and development; otherwise, AI will not understand the meaning of such values and its importance in human interactions and relationships. A robot will only act as programmed or designed but human beings exhibit those behaviours because they possess emotional intelligence. This will result to unfairness and lack of accountability and other ethical issues in AI decision making
- ii. *AI should be built to incorporate contextual understanding*: AI designers and developers must consider social, cultural, and environmental factors in designing AI that will serve the function of decision-making. AI should also be programmed to take into consideration cultural differences in societies and how these differences can influence decisions. It should be designed to understand that one approach will not work for all situations in all places and contextual consideration can make a difference in decision-making
- iii. *AI must be designed to use a human*

centred approach: AI should be designed to prioritize human well being, to respect human dignity and agency. AI should be designed or programmed to recognize the value of human life and dignity and must not act in ways that compromises them, AI should not be designed to understand human freedom of choice and not to act in ways that limits them,

To achieve the above aims, AI developers and designers need to consider the content of the data used for running AI. A very important aspect of AI design is data and training. To make AI more ethical, the following should be considered:

1. *Diverse and representative data*: AI developers or designers should ensure data reflects diverse perspectives, cultures, and contexts.
2. *Ethical data curation*: Address biases, errors, and sensitive information. When these biases are not checked, they can worsen already existing biases and unethical behaviour
3. *Real-world testing*: Validate AI performance in real-world scenarios. This is necessary to assess AI performance and evaluate its suitability for use.

Challenges for the future of Phronesis in AI

Incorporating *phronesis* in AI has numerous challenges owing to the nature of human beings and machines. These challenges include:

1. *Balancing human-like behaviour with AI's limitations*: Human beings have emotions while AI does not, it is challenging to reproduce the same emotions or behaviours of human beings in AI. Melanie Mitchell argues

Ethical notions such as kindness and good behaviour

are much more complex and context dependent than anything IRL (inverse reinforcement learning) has mastered so far. For instance, a notion like truthfulness a value we want in our AI systems, a major problem with today's large language models is their inability to distinguish truthfulness from falsehood. The first step towards teaching machines ethical concepts is to enable machines to grasp human like concepts and this is AI's most important open problem.¹⁴

Until computers are able to grasp the meaning of human concepts and act accordingly, there will always be the risk of AI not acting the way we intended

2. *Addressing bias and cultural sensitivity*: Biases that arise from cultural differences in both producers and users of AI poses a challenge in making AI free from bias. There are so many prejudices, stereotypes and its producers will naturally transfer misinformation and biases in the world today to AI if not checked
3. *Ensuring transparency and accountability*: This crucial for building trust, preventing harm and it will promote responsible AI systems.
4. *Developing AI that aligns with human values*: AI should be made to align with human values to avoid AI acting contrary to human values

Conclusion

There is no doubt that AI has been incorporated into virtually every aspect of life. There is therefore the need to ensure that ethical considerations are taken into consideration in its design, programming and use. Aristotle's *phronesis* provides an ethical guide for how AI can be made to consider ethical issues. As AI takes on more roles in our society especially decision-making roles, there is need to ensure that it make decisions that are ethical and are in line with human values. This is because some these decisions can influence human wellbeing as well as worsen already existing problems in the society, If *phronesis* can be incorporated into the design of AI, AI can be taught to understand and imbibe human ethical or moral values and make decisions that will be ethical and in line with human values.

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