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The Synergy of Minds and Machines: Rethinking the AI-HI Relationship through Dialectical Reconstruction

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Abstract

Today, there is an issue regarding the superiority of intelligence regarding the nature of human intelligence and artificial intelligence. Human intelligence, which refers to the natural capacity of humans to think, reason, learn, and adapt to new situations based on experience and emotional instincts, represents the core of what it means to be human. Artificial intelligence on the other hand is the simulation of human cognitive functions by machines, especially in tasks such as problem-solving, pattern recognition, and decision-making, which often operates based on algorithms and data, both of which are unique and important in themselves. However, there is a presupposition by some commentators, which happens to be the problem of this paper. On the one hand, there is the argument that artificial intelligence; particularly generative artificial intelligence, can perform tasks better than humans, while on the other hand, is the argument that human consciousness and creativity remain irreducible, both of which have sparked renewed discussions about whether AI can rival or even surpass human cognition. However, rather than reduce the discourse to a binary conflict, this paper through a critical and dialectical method, critically engages with established perspectives, proposing a complementary view that reconciles both intelligences. It argues that artificial intelligence represents an existential evolution that targets enhancing human productivity rather than replacing humans. Contrary to fears that artificial intelligence diminishes human relevance, this paper demonstrates how it complements human intelligence by ensuring collaboration and improved productivity in advancing knowledge and innovation.

Keywords: Artificial Intelligence (AI), Complementary, Dialectics, Human Intelligence (HI), Intelligence

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Introduction

As the world progresses, there are numerous innovations within human societies. Among these innovations is the popular artificial intelligence (AI), which is seen as a new generation of technologies capable of interacting with the environment to simulate human intelligence (Glikson & Woolley, 2020). With this innovation, there are revolutions across every sector of our society, whereby we have machines capable of performing activities that we would associate with human thinking, including decision-making, problem-solving, learning, and carrying out routine tasks (Dellermann et al., 2019). In other words, they can perform almost everything humans are capable of. We see AI in the banking sector, health sector, educational sector, trade, and many others. This explains why Vinge (1993) argued that advancements in technological means could herald the end of the period of ordinary human dominance due to the emergence of superhuman intelligence. This position, however, becomes a problem and a threat to human intelligence. Human intelligence, as we know it, is the natural capacity of humans to think, reason, learn, and adapt to new situations based on their experiences and emotional instincts. However, it is neither as fast, accurate, nor as efficient as AI (see Vinge, 1993; Luga, 2016).

A leading proponent of artificial intelligence, Nick Bostrom, in his book on *Superintelligence*, narrates how a robot apocalypse could take over human society. In his analysis, he delves into picturing an artificial intelligence called *superintelligence*, which, in the near future, could override human society. Through the concept of superintelligence, he attempts to portray an intellect considered to be much smarter than the best human brains in practically everything, including wisdom, science, creativity, social skills, and even community services (Bostrom, 1998). According to Petersen (2016), Bostrom's analysis envisions an artificial intelligence evolution whereby, "once we have a machine with genuine intelligence like ours, it will quickly be able to design even smarter and more efficient versions, and these will be able to design still smarter ones, until AI explodes into a "superintelligence" that will dwarf our own cognitive abilities the way our own abilities dwarf those of a mouse" (Petersen, 2016: 1). In other words, to human society, this is an existential threat. To this effect, there is apprehension from humans concerning the capabilities of AI, which they regard as capable of snatching away their jobs and rendering them irrelevant in society due to the seamless operations AI brings with its emergence.

In reaction to the above, another set of scholars supports human intelligence, arguing that it is almost impossible, if not entirely impossible, for AI to surpass humans, who happen to be its creators (see McAfee and Brynjolfsson, 2017; Vinge, 1993). They argue that since man creates the machine, AI cannot surpass its creator. As a result, this research identifies and classifies both positions as being biased, viewing artificial intelligence as part of existential evolution rather than as a tool to render humans irrelevant. Instead, AI enhances human efforts. Thus, this research intends to show that rather than reduce the discourse to a binary conflict, it would be more credible to propose a complementary view that reconciles both intelligences,

with the argument that artificial intelligence represents an existential evolution that targets enhancing human productivity rather than replacing humans. In other words, contrary to fears that artificial intelligence will diminish human relevance, this paper seeks to demonstrate how AI and human intelligence complement each other, which we envision that by working together, their collaboration could lead to innovation, advancing knowledge, and improved productivity.

To realise this goal, this research shall be divided into four sections, excluding the introduction. The first part shall contextualise the concept of intelligence, serving as a foundation to the whole work. The second part shall contextualise artificial intelligence and its existential development. This section will examine how artificial intelligence has evolved, its improvements, and future predictions of where it might be headed. The third section will focus on human intelligence, showing how it has evolved, ultimately enabling the creation of artificial intelligence. The fourth section shall involve a critical analysis, exposing the problems of biases in artificial intelligence and human intelligence through a philosophical lens, highlighting extreme positions from both schools of thought. The fourth section will undertake a dialectical reconciliation of artificial and human intelligence. Through a complementary approach, this section will engage in dialectical analysis, reconciliation, and reconstruction, demonstrating how both can achieve a common goal: making society a better place through innovation and development. Afterwards, the paper shall then proceed to the concluding part.

A Short Account of the Concept of Intelligence

From time immemorial, the concept of "intelligence" has always been associated to the mind (see Sternberg, 2012), which often considers humans to be superior in intelligence, as their mind is well developed than any other species. It has long been defined and explored from various perspectives guided by different theories. According to Sternberg (2012), intelligence is considered "the ability to learn from experience and to adapt to, shape, and select environments" (Sternberg, 2012: 19). Accordingly, intelligence varies and can be viewed from multiple perspectives, as many studies have identified it today as diverse and complex, with some linking it closely to the mind. Over the years, intelligence has been measured through psychometric assessments, such as IQ tests, among other tools, although such methods have also faced criticisms for their limitations in capturing the full scope of human capability. According to Gardner's theory of multiple intelligences, intelligence as we traditionally understand it is neither unified nor general, but rather exists in multiple forms (Gardner, 2006). In his analysis, intelligence may be linguistic, spatial, musical, bodily-kinesthetic, naturalistic, interpersonal, or intrapersonal (Sternberg, 2012), and in more recent discourse, emotional intelligence has also emerged as a key factor in human interaction and social cohesion. These forms of intelligence, though distinct, often work together in real-life situations, reflecting the multifaceted nature of the human mind. However, even with the diversity of all these forms of intelligences, they all demonstrate adaptability, creativity, learning, and a purpose-driven orientation.

Another kind of intelligence is the biologically brain-based theory that tries to account for intelligence through the examination of the brain and its functions rather than the position of the brain (Haier, 2011). This theory of intelligence holds that intelligences are only peculiar to the brain and its functions; an argument rooted in metaphysics, particularly in the area of dualism, where the issue of mind and body is debated, arguing that all intelligences could be measured through the brain (Haier, 2023), thereby dismissing the mind as a factor responsible for intelligence. This implies that there is the possibility of creating an artificial intelligence, provided that it could possess the function of the brain. There is also the Sternberg's triarchic theory, which evaluates intelligence based on how people live their lives and how fulfilled and productive they have been. In his words, he argued that people are intelligent in their lives to the extent that they:

> (i) formulate and achieve goals that help them attain what they seek in life, given their cultural context; (ii) by capitalising on their strengths and compensating for or correcting weaknesses; (iii) in order to adapt to, shape, and select environments; (iv) through a combination of essential skills. As mentioned above, the essential skills are: (i) creative skills to generate novel ideas; (ii) analytical skills in order to assure that the ideas are good ones; (iii) practical skills in order to implement their ideas and persuade others of their value; and (iv) wisdom-based skills in order to ensure that the ideas help to achieve a common good over the long as well as the short term through the infusion of positive ethical values (Sternberg, 2012: 21).

The above features as outlined by Sternberg, all connote features of human intelligence, which always serve as the blueprint for determining intelligence. Hence, we argue that intelligence is nothing other than the ability to make use of our experiences for better outcomes for today and for the future. It involves the ability to utilise what we have learned for today's purposes, as well as to use it to envision a better future; emotionally, ethically, and even responsibly, as this, in itself, remains what the society is built upon and what is responsible for its smooth, continuous existence without chaos.

Artificial Intelligence and Its Existential Development

In today's era, Artificial Intelligence (AI) remains one of the most significant technological innovations that have brought about changes and advancement across various sectors and aspects of human life. It is characterised as that which possesses the ability to perform activities that are originally peculiar to humans. These actions are, however, beyond the normal machine abilities that have to do with manpower, to include cognitive processes. These abilities include learning, reasoning, and decision-making, which became possible as a result of using advanced algorithms and data analytics (Dellermann et al., 2019). The existential development of AI involves its evolution from rudimentary machine learning systems to complex networks, which are capable of autonomous actions and predictive analytics. As noted by Belih et al. (2024),

AI's "agent planning" and "strategic awareness" enable it to execute structured tasks with precision, which thus raises its profile as both a tool for human advancement and a potential existential risk. This view of it as having dual capabilities, to either enhance or harm, has raised ethical and existential concerns among some scholars, birthing vigorous debates about its future direction and implications for humanity (Belih et al., 2024).

The historical journey of AI's development has been one of incremental yet transformative advancements (see Vinge, 1993). From the pioneering ideas of Alan Turing to the contemporary sophistication of deep learning algorithms, AI has traversed a complex path of innovation. However, it was initially conceived as a computational tool for performing simple tasks, but the reality today shows otherwise, where AI has evolved into a dynamic force driving advancements in sectors such as healthcare, finance, education, governance, and beyond (see Lu, 2019; Vinothkumar & Karunamurthy, 2023; Ahmed, 2024; and Abbas et al., 2024). AI's ability to autonomously learn and adapt through neural networks has unlocked new possibilities. These possibilities, which are the major source of existential threats, range from the ability of autonomy and independent learning ability through natural language processing, which originally is an achievement, considering the successes recorded (autonomous vehicles, medical diagnosis among many others). In the expression of Nick Bostrom, artificial intelligence would in the nearest future develop into superintelligence. He envisions a future where machines surpass human cognitive abilities, rendering humans obsolete. According to him, superintelligence refers to intellects that are much smarter than the best human brains in everything, including science, creativity, social skills, and any other area in which humans may excel (see Bostrom, 1998). Once this level of genuine intelligence is achieved; intelligence comparable to that of humans, these machines would be able to design even smarter and more efficient versions of themselves. Just as humans developed artificial intelligence that is presumably as smart as humans, and arguably even smarter according to some, this advancement could eventually lead to a widespread emergence of superintelligence (See Petersen, 2016).

In the expression of Alkhalifah et al. (2024), it was highlighted that the rapid development of AI has opened the door to engendered widespread public existential anxiety, which the public thinks of the fears of job displacement, and ethical dilemmas, and amongst the educated and liberated minds, the concern is on erosion of privacy. Furthering the position of liberated minds, the concern becomes more intense as the issue of "intelligence explosion" becomes much more solid; this is a situation where AI systems could self-improve themselves without any human intervention to surpass human oversight (see Petersen, 2016; Belih et al., 2024). According to a study by Kosaraju (2024), the rise of the autonomy of AI to self-improve itself without human oversight should be an important feature of AI and should be further worked on. The study showed that AI's impact on human society, starting from the health sector, down to vehicles and then defense systems, could not be denied, and the successes recorded are only a welcome development to our society (Kosaraju, 2024).

Industry	Application	Impact
Healthcare	Personalized treatment plans through real-time data	Improved patient outcomes, reduced healthcare costs
Autonomous Vehicles	Real-time navigation and safety optimization	Increased safety, improved fuel efficiency, and navigation
Telecommunications	Cognitive networks managing real-time data	Optimized network performance, reduced human oversight
Defense	Autonomous systems operating in complex environments	Enhanced operational efficiency, reduced human intervention

Figure 1: A table diagram showing the application of self-improving Algorithms in 4 sectors **(**Kosaraju, 2024: 325)

However, in another study by Federspiel et al. (2023), having acknowledged the importance of the advancement of AI, particularly in its self-improving ability, the study noted an existential threat that could mar society if not put in check. They highlighted areas of that to include health-related issues, areas of manipulating human decisions, thereby dehumanising them in the process, and as well in the defense sector, by diminishing human value, which in the process enhances destructive capabilities, and progressively renders human labour obsolete. Hence, we are faced with a paradox of progress and threat. On the one hand, AI's capabilities evoke the impression of being admired and revered, considering its abilities and potentiality in driving development and societal transformation. On the other hand, it is viewed as a threat to human society, as it exposes them to potential existential issues and worries.

Ethical concern is another issue. Unlike human intelligence, the AI system is built out of being unemotional and lacks ethical possibilities, AI operates within the constraints of programmed parameters. This fundamental limitation becomes particularly troubling in high-stakes scenarios such as autonomous warfare or predictive policing. For instance, flawed algorithms in these domains could lead to catastrophic outcomes, which in turn could fuel societal inequalities and undermine trust in AI systems. According to Wirkuttis and Klein (2024), adversarial attacks on machine learning frameworks further point to their vulnerabilities, which, as a result, create additional layers of risk and uncertainty (as cited in Belih et al., 2024). Though, be it as it may, despite these challenges, AI's potential to address complex global issues remains undeniable. For example, considering the essential role it plays in accelerating vaccine development during the COVID-19 pandemic illustrates its transformative capacity to solve critical problems in real-life situations (see Alkhalifah et al., 2024; Farahani, 2024 and Ali et al., 2024).

Thus, it is arguable that the existential development of AI is a double-edged sword, embodying both unprecedented opportunities and undeniable risks. As a result of this reality, it becomes pertinent that as society struggles with the ethical, economic, and social implications

of AI, a multidisciplinary approach is essential to navigate through this potential landscape of crisis and opportunities. Policymakers, technologists, and ethicists must thus find a way to bridge this gap by establishing comprehensive governance frameworks that not only mitigate risks but also harness AI's potential for collective benefit.

Human Intelligence and Its Existential Development

The concept of human intelligence has long been a subject of discourse in the field of psychology, with different records of what it entails and how to measure it. When we say human intelligence, we mean the unique ability of humans that distinguishes them from other animals. It is the ability that informs anthropocentrists to place man at the centre of the universe. According to Dellermann et al. (2019), human intelligence is the natural capacity of humans to think, reason, learn, and adapt. Over the course of history, as highlighted above, these have been the peculiar and unique attributes of man, which have been revered as the cornerstone of human evolution and societal progress (Dellermann et al., 2019). Having a distinct feature from that of AI, human intelligence encompasses an interrelation of cognitive, emotional, and moral dimensions which has been the element responsible for empowering individuals to be able to navigate complex social and existential challenges. According to Gardner's Theory of Multiple Intelligences, as noted by Paramasivam et al. (2022), there are diverse modalities of human intelligence, which include linguistic, logical-mathematical, interpersonal, and existential intelligence. Among these, existential intelligence; the ability to struggle with life's ultimate questions, stands out as a uniquely human trait, which reflects the human capacity of self-reflection, moral reasoning, and meaning-making. This set of dimension exposes the depth and uniqueness of human cognition, which has been established that AI, despite its computational sophistication, cannot replicate (see Paramasivam et al., 2022) doubting the possibility of if AI truly possesses intelligence at all, given the human version of intelligence. However, our definition of intelligence as exposed in sections above disagrees that AI does not possess intelligence.

Without much ado, the existential development of human intelligence is that which is founded on humanity's adaptive responses to environmental, social, and cultural transformations (Arnout & Alkhatib, 2019). From the ingenuity of early tool-making to the intellectual breakthroughs of the scientific revolutions, human intelligence has evolved through the dynamism of creativity, knowledge, and emotional foundation (see Sawyer & Henriksen, 2024). The existential development of human intelligence is further influenced by its integration with spiritual and moral dimensions. In the course of identifying humans and their cognitive development, philosophers such as Nietzsche and Heidegger have long done justice to this by exposing the importance of self-awareness, authenticity, and meaning in human existence, all of which points out to the role of existential intelligence in navigating life's uncertainties (Paramasivam et al., 2022). According to their position, ensuring existential intelligence through education can enhance self-perception, resilience, and societal engagement (Paramasivam et al., 2022),

which shows that by nurturing these dimensions, individuals can better adapt to the complexities of a rapidly changing world, ensuring that human intelligence remains a vital force in shaping the future. In other words, human intelligence is always on the race to become better through nurturing it.

Furthered in the expression of Paramasivam et al. (2022), it was emphasised that existential intelligence births resilience and adaptability, particularly in times of crisis. Using the event of COVID-19 pandemic as a case study, the critical role of the adversity quotient (AQ), a measure of one's capacity to transform challenges into opportunities, in navigating uncertainty and adversity was displayed, as there was innovation brought in place to enable human survival and the continuous running and function of our respective societies and economies (Paramasivam et al., 2022). This resilience is emblematic of the dynamic and context-sensitive nature of human intelligence, which thrives on the integration of experience, intuition, and critical thought. However, despite the remarkable adaptability of human intelligence, it still faces significant challenges in the contemporary era, which confirms the purpose of having artificial intelligence in the first place.

According to Russell and Norvig (2021), they exposed the advent of artificial intelligence was as a result of the necessity to fill in the gap where humans are found inefficient. Accordingly, this all started from the quest to create systems capable of mimicking human cognitive abilities, such as reasoning, problem-solving, and learning. It was originally aimed at complementing the human capabilities to increase productivity which has led to different advancements, progress and success areas of computer science, mathematics, and neuroscience to name a few. As argued by Turing (1950), the advent of AI seeks to address fundamental questions about machine intelligence while supporting human efforts in solving real-world challenges. In essence, the original aim of AI is to engine human intelligence. However, the continuous and rapid advancement and influence of AI and digital technologies on our society have raised concerns about the potential threat to be faced if left unattended to. This explains why Alkhalifah et al. (2024) in their study exposed that, the existential anxiety surrounding AI's rapid advancements as it has been widely recorded only confirms or rather reflects fears of human obsolescence and the decline in relevance being faced by the originally uniquely human capabilities. This anxiety has however necessitated reactions towards the urgent need to preserve and enhance human intelligence through targeted education, ethical discourse, and the cultivation of emotional and moral competencies. Hence, considering the concerns of the first section, together with this section, a philosophical inquiry shall be engaged, in order to identify and engage with the perceived concerns in the next section, with the purview of trying to establish whether or not both concerns on human and artificial intelligence are justified and founded.

The Limitation in Artificial Intelligence and Human Intelligence

The notion of bias; whether in artificial intelligence (AI) or human intelligence has gained momentum in our contemporary era. It is argued to be a representation distortion in judgment

or decision-making processes, which often arises from inherent limitations, socio-cultural contexts, or technological configurations. The issues surrounding biases are regarded as important considering how they fundamentally affect the reliability and ethical acceptability of intelligence, be it human or artificial. Its tendency to shape outcomes in ways that often deviate from objectivity or fairness is enough for it to be a threat in human society as related to intelligence. According to Simundic (2013), bias could be regarded as the deviation from the truth the view of things, which always results in false conclusions, which could be either intentional or unintentional. In the argument of Blair (2012) while trying to explain what bias entails, defined it to be an act or distortion of the truth. He argued that whether intentional or not, it involves the presentation of verifiable false events or claims, either by exaggeration or by omission (Blair, 2013: 11). In other words, biases in any of its forms are misrepresentations of facts.

To start with, artificial intelligence, which has experienced a lot of advancement and progress in our contemporary society, has been argued to be both beneficial and a potential threat to humanity. Despite recorded successes in advancing the healthcare system, revolutionising the educational system, upgrading the defense system, and developing telecommunications, among many others, it has been argued to support human ability, while a subset of scholars fears it to be an existential threat to humanity. In the study of Federspiel et al. (2023), having acknowledged the development of artificial intelligence as experiencing rapid progress and having the potential to revolutionise the healthcare sector, they still identified artificial intelligence as having the potential to produce negative health impacts, which the study revealed has been supported in various literatures. In other words, the impact, development, and progress being experienced in artificial intelligence do not make it devoid of some limitations, which nullify its total replacement of human abilities and impact.

In the study, it was identified how artificial intelligence could harm human health through its impact on the social and upstream determinants of health, whereby many people could manipulate artificial intelligence for their own selfish purposes, including using it for autonomous lethal weapons, among many others, which they argued calls for effective regulation. In another study by Altamimi et al. (2023), they argued that artificial intelligence, considering its developmental implications and some sort of emotional, ethical, and social limitations, was identified as having the ability to supplement human abilities and not to substitute them. In their work on artificial intelligence chatbots in medicine, they argued that the importance of chatbots in the healthcare system is truly necessitated. However, while these artificial intelligence chatbots could help with effective support, they also have limitations such as a lack of empathy, intuition, and years of medical experience (Altamimi et al., 2023, p.1). In essence, their study revealed that artificial intelligence could only complement human efforts and abilities and not replace healthcare professionals as far as the healthcare system is concerned. Another limitation was presented by Bhirud et al. (2019), with the position that one of the major challenges we could face in integrating artificial intelligence into our various systems, particularly the healthcare

system, is the complexity of natural language understanding and machine learning tasks. According to them, the complexity in the healthcare system, as it has to do with the lives of people, places the healthcare sector in a delicate position where artificial intelligence could bring about disaster. Understanding human language in terms of context, recognising intent, and generating appropriate responses could be a problem for artificial intelligence. Therefore, they argued that its insufficiency prevents it from being classified as superior to human abilities or as a threat to human abilities, nor can it replace the efforts and identity of humans in our respective society.

On the limitation of human intelligence, Griffiths (2024) revealed how this has led to the emergence of artificial intelligence. According to him, the recent development in artificial intelligence would require one to ask what exactly is unique about human intelligence because abilities attributed to human intelligence are much more amplified and precise in artificial intelligence. This, in turn, leads us to the limitations of human intelligence. The limitations of human intelligence have contributed to the emergence of artificial intelligence. Accordingly, human intelligence is limited in the area of time, as humans have access to a limited amount of computation and have limited communication capability to transfer the exact content of their brains to one another (Griffiths, 2024). In contrast, artificial intelligence can evaluate intelligence problems and perform tasks in seconds, thereby defining its efficiency, though, contestable, considering the amount of dataset needed to respond to a single prompt. For example, there could be an argument about how many billions of data points artificial intelligence actually needs to respond to just one prompt, compared to how a human baby learns with just a few experiences. While this is true that AI systems often require billions of data points to perform a single task, this should not be seen as a weakness but rather as a testament to their scalability and capacity. Also, unlike artificial intelligence, humans lack the ability for multiple computations, as they have just a single brain with fixed computational capacity, whereas artificial intelligence in the present time has multiple computational capacities to perform tasks simultaneously.

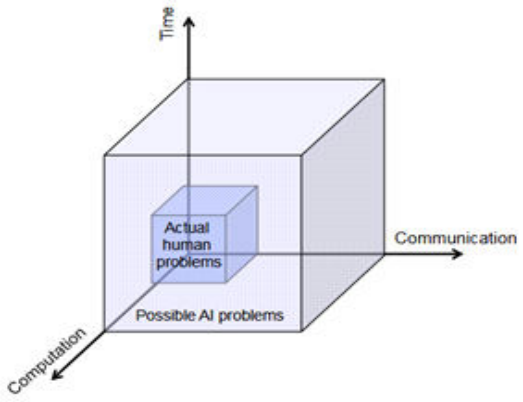

Figure 2: A diagram showing the limitation of Human Intelligence (Griffiths, 2024: 5)

Hence, this explains why Russell and Norvig (2021) identified that the advent of artificial intelligence was a result of the necessity to fill in the gap where human intelligence was found to be inefficient. The limitations of humans brought about the invention of artificial intelligence to serve the purpose of supplementation or complementation.

Artificial Intelligence and Human Intelligence: A Dialectical Reconstruction

The relationship between artificial intelligence (AI) and human intelligence (HI), according to the two schools of thought earlier exposed, showcased that both are framed in oppositional terms, with one viewed as either a replacement for or a challenger to the other. However, this binary perspective fails to capture the dynamic interrelation between the two, where each possesses unique strengths and limitations that, when combined, can lead to unprecedented advancements in knowledge and productivity. By proposing a dialectical reconstruction of both views, we mean to introduce a framework that seeks to reconcile this dichotomy. It attempts this by prioritising a complementary rather than adversarial relationship. With all sense of sincerity as contained in the study of Vinothkumar & Karunamurthy (2023) and Kosaraju (2024), AI has recorded successes in areas requiring precision, speed, and scalability (see Vinothkumar & Karunamurthy, 2023). Its ability to process vast datasets, identify patterns, and execute complex computations far surpasses the capabilities of human cognition. This progress is evident in the healthcare industry, where medical diagnostics, financial modeling, and climate predictions have recorded efficiency and accuracy, which originally outperforms human efforts (see Korteling et al., 2021; Tegmark, 2017). However, despite this development and these successes, there are other important factors to watch out for. There is emotional intelligence, ethical reasoning, and contextual understanding, all of which are intrinsic to human intelligence but are absent in the algorithm of AI (see Altamimi et al., 2023; Bhirud, 2019). Thus, this informed Tegmark (2017) to argue that while AI's computational power remains unmatched, its inability to understand certain details of human society (contexts, intents, emotions, among many others) highlights a fundamental limitation and hence requires human support of complementation. Hence, these deficiencies warrant the continued presence of human oversight, particularly in areas where moral judgments and empathetic considerations are paramount (see Tegmark, 2017). Conversely, human intelligence is identified by its adaptability, creativity, and depth of emotional and ethical reasoning. Different from AI, humans can navigate ambiguity, interpret context, and draw from lived experiences to make decisions (see Dellermann et al., 2019).

To the above effect, Philosophers such as Heidegger and Nietzsche have over the years emphasised the existential dimensions of human intelligence, particularly its capacity for self-reflection, authenticity, and meaning-making (see Pãian, 2024). These qualities enable humans to address questions of purpose and value that transcend algorithmic computation. Yet, human cognition is not without flaws, such as biases, limited processing capacity, and emotional vulnerabilities, which can hinder decision-making, particularly in high-stakes or data-intensive

scenarios. In Nietzsche's exploration of human fallibility, he argues that human beings are prone to error, self-deception, and the imposition of false certainties. However, while Nietzsche's exploration of human fallibility shows the limits of rationality and the implications that come with it, it also points to the transformative potential of self-awareness in overcoming these limitations.

Having presented and exposed the strengths and limitations of both artificial intelligence and human intelligence, this paper then proceeds with proposing a dialectical approach. By adopting this approach, this paper reveals how this could lead to a synergistic relationship through the integration of AI's computational power with HI's contextual and ethical reasoning. For the sake of practicality, using the healthcare industry as an example, AI has been recorded to assist in analysing medical data and identifying potential diagnoses, which, however, is supported by human practitioners with the task of providing the empathetic care and ethical judgment necessary for patient treatment. However, even at that, some scholars call for strict monitoring with the goal of ensuring a safe AI (See Petersen, 2016). As Yew (2021) observes while discussing the trustworthiness of robots, he argues that we must be wary of the tendency to "overtrust" robots, a phenomenon often rooted in automation bias. Similarly, if we are to consider the aspect of governance, it is realisable that in policymaking, AI can model scenarios and predict outcomes while human leaders weigh the social, cultural, and moral implications of those decisions (see Russell & Norvig, 2021). Hence, we cannot deny but agree that this complementary model aligns with the philosophical concept of Hegel's three-stage approach to development (Thesis, antithesis, and synthesis), where opposing forces or ideas converge to create a higher level of understanding. Hegel's dialectical method, for instance, posits that progress arises from the resolution of contradictions (Maybee, 2016). In the context of AI and HI, this synthesis can be achieved through deliberate collaboration and mutual enhancement because AI's ability to augment human capabilities should not be seen as a threat but as an opportunity to overcome the limitations inherent in human cognition, which Altamini et al. (2023) consider the act of AI supplementing human efforts rather than replacing it for desirable results. Supported in the perspective of Rawls' notion of reflective equilibrium of diverse principles and practices being reconciled to form a coherent and just framework, it is also applicable to the AI-HI dynamic (see Morton, 2022). Supported in the argument of Glikson and Woolley (2020), they expressed the needs of conceiving not solely as an existential threat but as a collaborative tool designed to complement human capabilities because it has the ability of paving the way for a future defined by innovation and equity (Federspiel et al., 2023), while HI on the other hand possesses theirs as well (Griffiths, 2024).

This table explores the intersection and interdependence of Artificial Intelligence (AI) and Human Intelligence (HI), highlighting their complementary strengths, limitations, and potential synergies.

Aspect	Artificial Intelligence (AI)	Human Intelligence (HI)	Point of Intersection & Interdependence
Processing Speed	AI processes vast amounts of data instantly.	Humans process information slower but with deeper contextual understanding.	AI assists humans by handling data-heavy tasks, allowing humans to focus on nuanced decision-making.
Creativity & Innovation	AI generates patterns and replicates creative works.	Humans create new ideas based on emotions, experiences, and intuition.	AI augments human creativity by providing insights and suggestions (e.g., AI-generated art).
Emotional Intelligence	AI lacks emotions and struggles with subjective reasoning.	Humans excel in empathy, moral judgment, and emotional reasoning.	AI can provide data-driven recommendations, while humans provide ethical oversight and emotional engagement.
Decision-Making	AI makes data-driven decisions based on probabilities and patterns.	Humans make holistic decisions considering ethical, social, and emotional factors.	AI supports decision-making by analysing trends, but human oversight ensures ethical soundness.
Learning & Adaptability	AI learns from large datasets but struggles with abstract reasoning.	Humans adapt through lived experiences and abstract problem-solving.	AI enhances learning by processing large-scale information, while humans refine AI algorithms through feedback.
Autonomy & Control	AI operates autonomously within programmed constraints.	Humans exercise free will and self-awareness in actions.	AI assists in automating routine tasks, but human supervision is necessary for ethical alignment.
Ethical & Moral Reasoning	AI follows programmed ethics but lacks intrinsic moral understanding.	Humans deliberate ethical dilemmas and understand moral consequences.	AI provides ethical recommendations based on coded principles, but human judgment is crucial for moral evaluation.
Multitasking	AI can process multiple tasks simultaneously.	Humans are limited in simultaneous cognitive processing.	AI aids humans in efficiency, allowing them to focus on high-level strategy and innovation.

Long-term Implications	AI continuously evolves, improving efficiency and accuracy.	Humans shape the philosophical and ethical direction of AI development.	A balanced integration of AI and HI ensures sustainable technological advancement.

The following table illustrates how AI and HI function in a complementary manner. While AI excels in computational and data-driven tasks, HI provides ethical judgment, creativity, and emotional intelligence. Together, they form a balanced system for innovation and sustainable decision-making. However, to properly realise this synergy, certain steps have to be taken. The first step that we propose is to ensure that there is a clear delineation of roles, ensuring that AI systems are designed to complement rather than replace human functions. However, while this may seem straightforward, it requires continuous negotiation between technological capabilities and business interests; interests which may not always prioritise the preservation of human agency, especially when automation appears more profitable. Secondly, there has to be the establishment of ethical frameworks that would serve as a must guide for the appropriate integration AI into sectors of human society, which would in turn address issues such as accountability, transparency, and the potential for misuse, which in the argument of Buiten (2019) highlighted that the ethical challenges surrounding AI demand robust governance structures to prevent systemic abuses. Thirdly, the importance of proper education of the humane use of AI is sacrosanct. There should be the provision of training individuals in developing "intelligence awareness," which would equip them with the skills to collaborate effectively with AI systems (Korteling et al., 2021; Tegmark, 2017). Lastly, for future advancements and developments, we propose the reverence of interdisciplinary research to factor in sectorial needs and requirements for the successful creation of AI that would birth successful collaborations

Conclusion

The dialectical reconstruction of artificial and human intelligence shows the transformative potential of viewing them as complementary forces rather than adversaries. While AI excels in speed, precision, and scalability, its limitations in emotional intelligence and ethical reasoning necessitate human oversight. Conversely, while human intelligence offers depth in contextual understanding and moral judgment, it is hindered by biases and cognitive constraints that AI can help mitigate. Together, they form a partnership capable of addressing complex challenges that neither could solve independently. This complementary perspective reflects the central argument of this work: neither intelligence form should dominate; instead, their integration is essential for advancing human flourishing. Such a view not only alleviates fears of obsolescence but also charts a path for harmonious coexistence, where AI amplifies human capabilities rather than replaces them. However, achieving this vision is not without challenges. Ethical concerns, such as accountability and transparency, must be addressed to prevent misuse.

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