# 13. The Ontology of the Mind's Creativity and the Language of Artificial Intelligence

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**Abstract**
Ontology is that branch of metaphysics that probes into the nature of being or reality. Reality here covers a broad range of abstract supra-sensible entities as well as concrete ones. The mind is an all-important layer of reality where thinking, intelligence, reasoning and cognition take place. As abstract as the mind is, it wields enormous predominant influence on existent entities. The human mind is therefore, at the heart of the creative development of Artificial Intelligence (AI) with an algorithmic language making it able to carry out computational tasks faster than human mind. This paper critically attempted to unravel the creative nature of the mind as well as what it can accomplished with AI as its offshoot. The aim is to point at how Artificial Intelligence being the mind's creative ability, has redefined reality including virtual reality. The paper further explored the relationship between the mind and artificial intelligence from the perspective of "abstract to concrete" connection. The major finding of the paper is that, the mind has endless possibilities that can be transmitted into concrete realities aiding in the sustainable progress and development of the human society. Hence, because AI lacks consciousness, intentionality, and subjective experience, it becomes subservient to Human Intelligence which is an outstanding feature of the human mind.

**Keywords:** Mind, Ontology, Intelligence, Rationality, Artificial, Reality, Abstract, Concrete, Algorithm

## Introduction

The relationship between creativity and artificial intelligence (AI) has generated intense philosophical debate, particularly concerning the ontological status of AI's capacity to "create." Creativity has long been viewed as a hallmark of human cognition and is deeply intertwined with subjective experience, intentionality, and the ability to transcend existing knowledge frameworks (Kaufman & Sternberg, 2010:12). AI systems produces artefacts in art, literature, language and problem-solving contexts that resemble human creativity. It then becomes essential as (Boden, 2004, p. 7) reiterates to interrogate whether such systems genuinely possess creative capacities or whether they merely simulate human creativity through pre-programmed algorithms and data processing.

The ontology of creativity has historically been linked to the human mind's capacity for conscious

thought and intentionality. Edmund Husserl and later, John Searle's (1980:419) theory of intentionality holds that true creative processes arise from a conscious mind capable of directing thought and intention toward a goal. In contrast, AI systems, no matter how advanced, lack subjective awareness—a crucial aspect of human creativity as highlighted by Nagel (1974:436), who argues that the subjective quality of experience, or "what it is like," forms the foundation of conscious understanding. This point raises the central ontological question: Can AI systems engage in creative acts if they lack subjective experience and intentionality?

Margaret Boden (2004) points out distinct categories of creativity such as combinational, exploratory, and transformational. Combinational creativity, which involves the novel recombination of existing ideas, is readily observed in AI-generated art or music. However, transformational creativity, which entails altering the underlying rules or frameworks of thought, is a higher cognitive function that AI struggles to emulate convincingly (Boden, 2004:23). Boden's work makes the point that while AI can mimic certain surface-level aspects of creativity, it does not exhibit the depth of human creative thought, which involves the conscious manipulation of abstract concepts and long-term intentionality. Therefore, the ontological distinction between human and machine creativity lies in the presence of consciousness and intentionality in the human mind. This paper then seeks to examine whether AI systems, despite their sophisticated algorithmic language programming designs, can ever truly be considered "creative" in the ontological sense, or if their outputs are simply high-level simulations of human creativity.

## What is Ontology?

One of the main areas of metaphysics is ontology, which studies existence, being, and the basic constituents of reality. It aims to provide answers to issues concerning the nature of entities and the ways in which they can be classed, connected, and organized under a reality framework. The primary goal of ontology is to give an organized understanding of what it is for anything to exist, rather than merely listing or describing items. Ontology, as famously stated by Heidegger (1962:21), starts with the question of being itself, examining both the nature of existence and what exists. Philosophers have developed diverse ontological frameworks, from substance ontology, where entities are understood in terms of material or immaterial "substances" (Aristotle, 1984:185), to process ontology, which views reality as dynamic and constituted by processes rather than static objects (Whitehead, 1929:10).

In contemporary philosophy, discussions on ontology have expanded to include abstract objects, possible worlds, and non-material entities such as numbers or propositions (Loux, 2002:41). For example, W.V.O Quine (1948:33) questioned the criteria by which entities are said to exist, proposing that the ontological commitments of any theoretical framework depend on the quantification over variables and the logical structure of that theory. A significant focus of ontology is the classification of entities and their hierarchical structure. Aristotle's concept of *categories*—substance, quantity, relation, and so on was one of the earliest attempts to create a systematic classification of all things that exist. More recently, the development of formal ontologies in computer science and AI has introduced practical applications of ontological theories, wherein

intentionality holds that true creative processes arise from a conscious mind capable of directing thought and intention toward a goal. In contrast, AI systems, no matter how advanced, lack subjective awareness—a crucial aspect of human creativity as highlighted by Nagel (1974:436), who argues that the subjective quality of experience, or "what it is like," forms the foundation of conscious understanding. This point raises the central ontological question: Can AI systems engage in creative acts if they lack subjective experience and intentionality?

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formal systems categorize information and enable machines to process and infer knowledge about the world. Gruber (1993:199) defines ontology in this context as "an explicit specification of a conceptualization", highlighting the role of ontology in structuring knowledge for computational purposes.

Furthermore, ontology addresses questions of identity and individuation—how entities are distinguished from one another. John Locke focused on the identity of objects over time, questioning how objects can persist through change while maintaining their identity. The issue of *ontological dependence* which is the relation between entities that exist in virtue of others—also plays a crucial role in contemporary debates (Fine, 1995:269). For instance, the relationship between mental and physical states in the philosophy of mind frequently involves questions of ontological dependence. Non-reductive physicalists, for example, argue that mental states are dependent on, but not reducible to, physical brain states, thereby positioning the mind as ontologically distinct from yet dependent on the body (Kim, 1993:51).

A significant contemporary debate in ontology involves the distinction between *realism* and *anti-realism* about the existence of certain categories of entities. Realists assert that certain entities, such as universals or numbers, exist independently of our conceptual schemes, whereas anti-realists argue that such entities are constructs of human cognition or linguistic frameworks (Archibong, *Philosophical Ideas and Human Progress*, 2024). This debate extends to the nature of social entities—such as institutions, norms, or roles—which some otologists argue exist only by virtue of collective human intentions and actions.

Ontology has also expanded beyond traditional metaphysical concerns to engage with interdisciplinary fields such as biology, physics, language, literature and information science. In biological ontology, for instance, debates surround the existence and nature of biological kinds—whether species are real, natural kinds or merely convenient labels for groups of organisms. Similarly, in the philosophy of physics, questions arise regarding the ontological status of spacetime, particles, and fields, with some theorists arguing that spacetime is a fundamental entity, while others propose that it emerges from more basic physical processes (Maudlin, 2012:5). In information science, ontology has taken on a more practical role in structuring databases and knowledge systems. Here, ontology refers to the formal representation of knowledge as a set of concepts and relationships. Ontology is still a fundamental component of philosophy and has broad ramifications for many academic fields as it poses important questions concerning what exists and how things connect to one another.

## The Mind

The nature of the mind is a central question in both philosophy and cognitive science, touching upon issues of consciousness, cognition, perception, and self-awareness. Traditionally, the mind has been understood as the seat of consciousness, of thoughts, emotions, and intentional states. In the Western philosophical tradition, one of the earliest systematic discussions of the mind comes from René Descartes, who posited a dualistic view in which the mind is distinct from the body, suggesting that the mind is a non-material entity that interacts with the physical body (Descartes, 1641:53). This

mind-body dualism has had a lasting influence, although it has been challenged by materialist theories that argue for a physicalist conception of the mind.

Contemporary theories of the mind often focus on materialist perspectives, particularly within the philosophy of mind and cognitive neuroscience. Physicalism, or the belief that all mental states are ultimately reducible to physical processes in the brain, has gained significant acceptance in modern thought. One of the most influential arguments for this view is the identity theory, which holds that mental states are identical to brain states. For example, Place (1956:44) argues that consciousness and mental phenomena can be reduced to physical brain processes. This theory contends that every mental state corresponds to a specific neural state, thus dismissing the need for a non-physical explanation of the mind.

Functionalism offers another perspective on the mind, rejecting the identity theory's strict correlation between mental states and brain states. Instead, functionalists argue that mental states should be understood in terms of their functional roles rather than their physical composition. Putnam (1967:435) suggested that mental states are analogous to software, with the brain acting as hardware; it is the function of the state, not its material substance, that defines its nature. Functionalism allows for the possibility that minds could exist in different types of physical systems, including non-biological entities such as computers, thereby extending the scope of the inquiry into artificial intelligence and machine supposed consciousness.

The problem of consciousness continues to pose significant challenges to physicalist and functionalist frameworks. The “hard problem” of consciousness, as noted by Chalmers (1996:201) which concerns how and why certain physical processes in the brain give rise to subjective experiences—known as *qualia*—the felt qualities of experience. While functionalism and physicalism provide plausible accounts of the structure and behaviour of mental states, they risk fully explaining the qualitative aspects of consciousness, such as what it is like to feel pain or see the color red. This challenge has led some philosophers, such as Nagel (1974:436), to argue that consciousness cannot be fully understood through objective, physicalist methods.

Another major area of inquiry in the study of the mind concerns intentionality, or the mind's ability to represent objects and states of affairs in the world. Intentionality distinguishes mental states such as beliefs and desires from other types of phenomena because they are about something—whether an external object or an abstract concept. Searle's theory of intentionality is rooted in a broader understanding of consciousness as inherently tied to the mind's capacity for directedness and representational content. The mind therefore, involves an intricate interplay of philosophical inquiry and empirical investigation. The problems of consciousness, intentionality, and subjective experience remain significant challenges to its fuller understanding. The investigation into the mind is far from settled, and ongoing research across multiple disciplines continues to probe the limits of our understanding of it. Let us however, examine the mind's creative ability.

**Creativity in the Mind**

Creativity in the mind is a complex phenomenon that engages multiple cognitive processes and neural systems. It is often defined as the ability to produce novel and valuable ideas, solutions, or artistic expressions. Psychologists and neuroscientists have long debated the nature of creativity, questioning whether it arises from specific brain regions, patterns of neural activity, or interactions between different cognitive networks. The cognitive processes associated with creativity are often described through the dual-process theory of thinking, which distinguishes between Type 1 and Type 2 thinking. Type 1 thinking is fast, intuitive, and automatic, while Type 2 is slow, deliberate, and analytical (Evans, 2008:261). Creative thought, particularly divergent thinking—a key component of creativity—relies heavily on Type 1 processes, which facilitate the generation of numerous ideas in a short period of time. However, Type 2 processes are also critical for refining and evaluating these ideas.

A key debate in the study of creativity in the mind is whether creativity is domain-general or domain-specific. Domain-general theories posit that creativity arises from general cognitive abilities, such as working memory and executive function, which can be applied across various fields of endeavour (Kaufman & Baer, 2005:322). In contrast, domain-specific theories argue that creativity is tied to expertise and knowledge within a specific field, suggesting that individuals are more likely to be creative in areas where they possess deep knowledge and experience (Simonton, 2000:152).

In addition to cognitive and neural factors, affective processes play a significant role in creativity. Research suggests that positive affect enhances creative performance by broadening the scope of attention and encouraging flexible thinking, while negative affect can either hinder or enhance creativity depending on the context (Baas *et al*., 2008:780). For instance, positive moods are linked to enhanced divergent thinking, allowing individuals to generate a wide range of ideas, whereas negative emotions, particularly when tied to persistence or frustration, can drive creative problem-solving through focused effort and determination (George & Zhou, 2002:704).

**What is Artificial Intelligence?**

The language of Artificial intelligence (AI) refers to the development of computer systems (language) capable of performing tasks that typically require human intelligence, such as perception, reasoning, learning, decision-making, and language processing. AI seeks to simulate or replicate human cognitive functions through the use of algorithms, machine learning models, and neural networks. Russell and Norvig (2016:34) define AI as "the study of agents that receive precepts from the environment and perform actions" to achieve goals efficiently. AI systems can be broadly categorized into two types: narrow AI, which is designed for specific tasks such as facial recognition or language translation, and general AI, which hypothetically could perform any intellectual task a human is capable of.

The foundations of AI trace back to early work in symbolic logic and the development of algorithms. One of the foundational figures in AI, Alan Turing, proposed the concept of a machine that could simulate any computational process, laying the groundwork for future AI development. Turing's famous "imitation game" (later known as the Turing Test) introduced the idea that a machine could

be considered intelligent if it could convincingly imitate human conversation. The test remains a significant reference point in debates about machine intelligence. Contemporary AI covers a wide range of subfields, including machine learning, natural language processing, computer vision, and robotics. Machine learning, a subset of AI, focuses on developing algorithms that enable computers to learn from data and improve their performance over time without being explicitly programmed.

LeCun, Bengio and Hinton (2015:436) explain that, deep learning is an advanced form of machine learning that uses multi-layered artificial neural networks and has revolutionized AI by allowing systems to process vast amounts of data and detect complex patterns, leading to advancements in fields such as image recognition and autonomous vehicles. Natural language processing (NLP) is another critical area of AI, aiming to enable machines to understand, interpret, and generate human language. NLP systems are employed in various applications, from virtual assistants like Siri and Alexa to sophisticated language models such as Open AI's GPT, which generate human-like text by predicting word sequences based on large datasets (Vaswani *et al*., 2017:4160). While these systems excel at generating coherent language, they are still limited by their inability to understand context at a deeper level, an issue that researchers continue to explore.

Another significant area of AI research is computer vision, which involves teaching machines to interpret and make decisions based on visual data. Advances in convolutional neural networks (CNNs) have enabled substantial progress in image recognition, allowing AI systems to identify objects, faces, and even emotions in images or videos (Krizhevsky, Sutskever, & Hinton, 2012:1109). Computer vision technologies are widely used in industries such as healthcare, where AI assists in diagnostic imaging, and in autonomous vehicles, where systems rely on visual data to navigate environments.

Ethical concerns are a growing focus within AI research, particularly regarding issues of bias, transparency, and accountability. Machine learning models often reflect the biases present in the data they are trained on, leading to potentially harmful outcomes in areas like criminal justice and hiring algorithms. Furthermore, the development of AI systems raises questions about privacy, as large amounts of personal data are collected and processed by these systems. Scholars like Bostrom (2014:114) have also pointed out the potential risks associated with the emergence of super intelligent AI, which could surpass human cognitive abilities and pose existential threats if not properly controlled.

**The Mind's Creative Ability and the Development of Artificial Intelligence**

The mind's creative ability is the reason for the development of artificial intelligence (AI), as AI systems are fundamentally the product of human ingenuity, problem-solving, and abstract thinking. Creativity, often defined as the capacity to generate novel and valuable ideas, is a core aspect of human cognition, enabling the design of AI systems that simulate aspects of human intelligence (Runco & Jaeger, 2012: 92). The very conception and implementation of AI technologies are a direct result of the mind's capacity for creative thought, which involves integrating knowledge from diverse fields such as mathematics, computer science, linguistics, and neuroscience. This creative integration has enabled the development of AI systems capable of performing complex tasks, such as

visual recognition, language processing, and strategic decision-making.

The role of creativity in AI development can be understood through the dual lenses of divergent and convergent thinking. Divergent thinking, which involves generating multiple possible solutions to a problem, is crucial in the early stages of AI research, where innovative approaches are required to model cognitive functions. For instance, the creation of neural networks—designed to mimic the structure and functioning of the human brain—was a major creative leap in AI development. The idea of using interconnected layers of simple processing units to simulate learning was inspired by the brain's biological architecture, demonstrating how human creative thought bridges biological understanding and computational design (LeCun, Bengio, & Hinton, 2015:436).

Moreover, the mind's ability to combine existing knowledge in new ways has facilitated significant breakthroughs in AI. The development of machine learning algorithms, which allow AI systems to improve performance over time through data analysis, stems from the application of statistical methods and computational power in novel contexts. Convergent thinking, the ability to focus on narrowing down the best solution from a set of possibilities, is equally important in refining and optimizing AI systems. Creative problem-solving in AI development requires not only generating new ideas but also selecting the most effective strategies for implementation. For example, the use of reinforcement learning, where an AI system learns to make decisions based on rewards and punishments, is a result of creative exploration followed by systematic convergence on a solution that balances exploration with exploitation (Sutton & Barto, 2018:4). This method, now foundational to AI systems that perform in dynamic environments such as autonomous vehicles or game-playing algorithms like AlphaGo, illustrates the mind's ability to creatively develop systems that learn through interaction with the environment.

The creative capacity of the mind extends beyond the technical design of AI systems to the ethical and philosophical frameworks that govern AI's development. The ethical challenges posed by AI such as bias in algorithms, privacy concerns, and the potential for AI to surpass human control are being addressed by philosophers, ethicists, and engineers alike. These interdisciplinary discussions are themselves products of creative thought, as they require rethinking traditional concepts of responsibility, agency, and decision-making in the context of intelligent machines (Crawford, 2021: 85). Furthermore, the creative process involved in AI development is iterative and continuous. As AI systems evolve, human creativity adapts to new challenges and opportunities. Ultimately, artificial intelligence is a manifestation of the creative ability of the mind. Whether it is with respect to designing neural networks or developing machine learning algorithms, human creativity drives AI's evolution and revolution. As a result of the interplay between divergent and convergent thinking, combined with the synthesis of knowledge from various disciplines, AI is more than just a technical feat as it is also a testament to the profound creative capabilities of the human mind.

## Evaluation

The ontology of the mind's creativity and artificial intelligence summarises the human creative processes and the extent to which these can be replicated by machines. Central to this paper is the

question of whether creativity is a purely human, conscious activity or whether AI systems can possess, or simulate, a form of creativity that is ontologically comparable to human creativity. This raises fundamental concerns with the regards to the nature of being and existence, particularly with respect to intentionality, consciousness, and the subjective qualities of creativity.

One of the most significant challenges in the ontology of creativity is defining the precise nature of creative thought and whether it requires consciousness. AI systems, despite their impressive outputs in fields like art and music generation, fundamentally lack intentionality because they do not possess subjective experiences or directed mental states. While AI systems like OpenAI's GPT or DeepMind's AlphaGo can produce creative outputs by processing vast amounts of data and optimizing patterns, their processes are purely algorithmic and lack the conscious awareness that grounds human creativity. Therefore, from an ontological perspective, AI does not engage in creativity as traditionally understood.

However, AI's capacity for combinational creativity, as described by Boden (2004:214), should not be dismissed. Combinational creativity, where novel outputs are generated by combining existing ideas in new ways, is a form of creativity that AI systems are particularly adept at due to their ability to analyse and synthesize large datasets. For instance, machine learning algorithms can generate unique artistic works or solve complex problems by drawing from vast resources of pre-existing knowledge. While this might not be creativity in the human, conscious sense, it does challenge traditional ontological understanding by demonstrating that machines can engage in processes that produce creative results, even without the requisite mental states.

Furthermore, the ontological argument against AI creativity becomes more complex when considering the gradual advancements in AI that mimic human-like decision-making and learning. Neural networks and deep learning models, such as those employed in natural language processing and image recognition, increasingly simulate higher-order cognitive processes (LeCun, Bengio, & Hinton, 2015:438). These systems exhibit emergent behaviors that could be perceived as forms of creative problem-solving, raising questions about the ontological status of these processes. While they lack self-awareness, they operate in ways that parallel human creative thinking, particularly in terms of exploratory creativity, where AI can experiment with new configurations of data to arrive at innovative solutions (Boden, 2004:222).

Nevertheless, critics of AI creativity argue that these processes remain fundamentally different from human creativity, which is deeply rooted in subjective experience and intentionality. Nagel as earlier noted (1974) contends that consciousness cannot be fully explained by physical or functional processes, emphasizing that subjective experiences—*qualia*—are essential to understanding the mind. AI, devoid of such experiences, can only simulate creativity at a surface level, without engaging in the deep cognitive processes that characterize human thought. This ontological distinction highlights the limitations of AI in replicating true creative thought and it reinforces the argument that creativity, in its fullest sense, is intrinsically linked to human consciousness.

In addition to the philosophical challenges, there are practical implications for considering AI within the ontology of creativity. AI systems, particularly in creative industries, raise ethical concerns about

authorship and intellectual property. If AI can generate creative works, who owns the outputs? Furthermore, if AI is integrated into decision-making processes that require creativity, such as in scientific research or strategic planning, there must be caution about over-reliance on machines that lack true understanding or consciousness (Crawford, 2021:102). These practical issues further complicate the ontology of AI creativity.

## Conclusion

It is without doubt that the critical evaluation of AI creativity hinges on the absence of consciousness and intentionality in AI systems, a characteristic that is foundational to human creativity. While AI systems can generate novel outputs through combinational and exploratory creativity, they do so without the subjective awareness that grounds human creative thought (Boden, 2004:214). The mind's creative ability, rooted in subjective experiences, consciousness, and intentionality, stands in contrast to AI's mechanistic and data-driven processes. Although AI systems, such as deep learning models, can mimic human-like creativity in certain contexts, such as art generation or strategic problem-solving, their processes remain fundamentally different in an ontological sense (LeCun, Bengio, & Hinton, 2015:438).

Based on the afore ontological examination of the mind's creativity and artificial intelligence, it can be deduced that, while AI systems can mimic some creative processes, they fundamentally differ from human creativity because they lack consciousness, intentionality, and subjective experience. As a consequence of these distinctions, AI is unable to replicate human-like creativity, but also demonstrates the unique capabilities of the human mind. This goes to suggests that human intelligence is still far more superior than AI despite its sophisticated algorithmic language. As breath taking as AI's performance may be, human intelligence is its corner stone. And the mind is the primordial fundamental workshop that births AI and its transforming abilities. Hence as Archibong opines in (*Beautiful Metaphysics*...2024:86) "Metaphysics has deeply influenced the development of technology, especially in recent years with artificial intelligence" as the mind's outstanding creature revealing the value of human intelligence as the creator.

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