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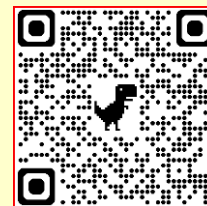
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CAN COMPUTERS THINK? A PHILOSOPHICAL INQUIRY

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ABSTRACT

This paper presents a philosophical and systematic examination of the question, “Can computers think?” It begins by looking at the different meanings of the concept of thinking, positing that the answer to the question depends on how such a concept is conceived. On the one hand, this paper argues that if thinking is understood as problem solving, information processing, and intelligent behavior, then computers may be said to think. On the other hand, if thinking requires consciousness, intentionality, subjective experience, and embodied understanding, then computers cannot truly think, since they are lacking in this regard. In responding to the question, the paper introduced two broad but contrasting perspectives (A and B). Perspective A supports the view that machines can think; it draws its justification from the Turing Test, functionalism, computational theory, and the Extended Mind Thesis. Perspective B rejects this claim, using arguments from the Chinese Room, intentionality, consciousness, and phenomenology. The study concludes with the claim that, despite the fact that machines can simulate and transcend many aspects of human intelligence, whether this feat amounts to genuine thinking remains a deeply philosophical and unresolved question.

KEY WORDS: Artificial Intelligence, Consciousness, Intentionality, and Thinking.

INTRODUCTION

The question under consideration is one of the most frequently debated issues in contemporary philosophy. This is because of the recent development in artificial intelligence (AI), where machines simulate human intelligence in all capacities. In contemporary society, machines and AI systems significantly shape and facilitate human activities. This is evident in areas of communication, economics, mathematical analytics, domestic, and advanced purviews. Thus, from a superficial lens, it becomes somewhat difficult to refute the notion that machines can think.

The focus here is on the concept “think”, a term which does not have a unified understanding, because many scholars have approached this concept from their different philosophical backgrounds.

Therefore, it is when such a concept is examined that we can submit the question: Can computers think?

However, this study adopts a philosophical method that combines conceptual analysis, comparative examination, and critical evaluation. It begins by giving an understanding of the concept before proceeding to justify the position on whether or not computers can think. Against this background, the paper develops its arguments through two contrasting perspectives (A and B), which are critically evaluated to assess whether contemporary machines can genuinely be said to think.

Conceptual Clarification of Thinking

Whether or not computers can think depends on what thinking entails. On the one hand, if thinking is defined as problem-solving,

learning, and information processing, then we can say that computers think, giving credence to the obvious realities evident in the use of computers today. On the other hand, if thinking requires consciousness, intentionality, and subjective experience, then it becomes problematic to admit that they can think.

What, then, constitutes thinking?

Scholars across cultures have debated the question of what it means to *think*. Some are of the position that thinking entails processing information, while others argue that thinking goes beyond this to accommodate the very nature of consciousness, existence, and truth. The concept “thinking” has evolved from a singular, abstract idea to a more complex, lived understanding due to rapid advancements in neuroscience in our contemporary landscape.

For Socrates, thinking meant deep self-examination. He declares that “the unexamined life is not worth living,”¹ emphasizing self-examination and questioning as the essence of wisdom. Also, he avers that real wisdom comes from questioning assumptions.² This is evident in his famous Socratic questioning, which treated thinking as dialogue.

According to Plato, thinking is a rational reflection, and not mere sensory perception. It is the activity of the soul engaging with eternal forms.³ In other words, thinking is that dialogue that helps us dig past the messy physical world to grasp timeless, perfect truths (called Forms or Ideas) that exist in a higher realm.

In ancient Egyptian thought, it is believed that thinking came from the heart, while the brain was not considered important. This explains why, in mummification, the brain was removed, but the heart was preserved because it is seen as the seat of intelligence and personality.⁴ More so, generally in ancient times, thinking was not just a brain activity. It was closely linked to the soul, heart, and spirit, giving it a spiritual and moral nuance. On this note, Aurelius treats thinking as a dialogue of the soul with itself, guiding moral life, since it was considered a path to wisdom and self-knowledge.⁵

Focusing on some recent contributions to the concept of thinking, many philosophers (between the 20th- and 21st-centuries) see “thinking” in ways that go beyond Plato’s picture of the soul quietly dialoguing with itself. Instead, they conceive thinking as a kind of mental activity that is shaped by language, the brain, the environment, and even social practices.

Patricia Churchland and some others in the physicalist tradition define thinking as patterns of neural activity in the brain. They claim that thoughts are not immaterial “soul-talk” but processes in the brain that are shaped by evolution, chemistry, and learning.⁶

¹ Plato, *Apology*, trans. G. M. A. Grube, revised by John M. Cooper, in *Plato: Complete Works*, ed. John M. Cooper (Indianapolis: Hackett Publishing, 1997), 38a–38e.

² Plato, *Apology*, trans. G. M. A. Grube, revised by John M. Cooper, in *Plato: Complete Works*, ed. John M. Cooper, 38a.

³ Plato, *Theaetetus*, trans. M. J. Levett, rev. Myles Burnyeat (Indianapolis: Hackett Publishing, 1992), 189e

⁴ Abdullah A. Alabdulgader, “The Ancient Wisdom at Intersection with Modern Cardiac Sciences,” *Cardiology and Vascular Research* 4, no. 3 (2021): 1–13.

⁵ Marcus Aurelius, *Meditations*, trans. Gregory Hays (New York: Modern Library, 2002), Book II, 1–2.

⁶ Patricia S. Churchland, “Morality and the Brain: The Right

Andy Clark and David Chalmers propose the “extended mind” thesis, which posits that some thinking literally goes on outside the skull.⁷ This challenges the traditional view that thoughts are locked inside the skull. Hence, thinking can include tools and environments we use every day. For example, when you use a notebook to remember things, the notebook becomes part of your memory system.

Martin Heidegger, who is often considered a bridge to recent thought, distinguished “thinking” from mere calculation or problem-solving.⁸ For him, genuine thinking is more like attentive wonder about being and our place in the world, rather than just “using logic to solve tasks.” Thus, thinking is a deeper and more reflective activity.

Given these diverse interpretations of thinking, it becomes difficult to adopt a single, definitive position in giving a sound answer to the question asked by this paper: Can computers think? It is premised on this that this paper will give its response and corresponding justifications from the two proposed perspectives.

Perspective A: The Affirmative Case for Machine Thinking

This perspective argues that computers can think. Its justifications for making such a submission are evident below:

i. The Turing test

This test was developed by Alan Turing in 1950. The test is a way of checking if a computer can think, at least in a practical sense. Put differently, it is a measure to show whether a machine can exhibit intelligent behavior indistinguishable from that of humans.

The basic idea of this test is that a human judge sits at a computer and chats through text with two hidden participants. One is a real person, the other is a machine. The judge does not know which is which. After asking questions and having a conversation, the judge must decide who the human is. Hence, if the judge cannot reliably tell the machine apart from the human, the machine is said to have passed the test.⁹ In this scope, Turing links thinking to behavior. Thus, he argues that if something behaves intelligently in conversation, then it is enough to call it intelligent (a thinking entity). This echoes the position of functionalism as developed by Hilary Putnam, which argues that the notion of thinking is not what a system is made of, but what a system does.¹⁰ Buttressing this

Hemisphere and Doing Right,” *Cognitive and Behavioral Neurology* 33, no. 4 (2020): 197–205.

⁷ Andy Clark and David J. Chalmers, “The Extended Mind,” *Analysis* 58, no. 1 (1998): 7–19; David J. Chalmers, “Extended Cognition and the Extended Mind,” in *The Routledge Handbook of Philosophy of Cognitive Science*, ed. Mark Sprevak and Matteo Colombo (London: Routledge, 2021), 53–67.

⁸ Martin Heidegger, *Discourse on Thinking*, trans. John M. Anderson and E. Hans Freund (New York: Harper & Row, 1966), 46; Ana Carla de Abreu Siqueira, “The Distinction Between Calculating Thinking and Meditative Thinking in Martin Heidegger’s Late Philosophy,” *Perspectiva Filosófica* 48, no. 2 (2021): 45–62.

⁹ Alan M. Turing, “Computing Machinery and Intelligence,” *Mind* 59, no. 236 (1950): 433–460.

¹⁰ Hilary Putnam, “The Nature of Mental States,” in *Mind, Language, and Reality: Philosophical Papers, Volume 2* (Cambridge: Cambridge University Press, 1975), 429–440.

point, Jerry Fodor, in his theory, *Language of Thought*, argues that thinking involves manipulating internal representations according to formal rules. As such, since computers also manipulate symbols according to rules, they can be said to be a thinking machine.¹¹ Other supporters of functionalism are David Lewis and Patricia Churchland.¹²

However, critics argue that behavioral attributes of machines simulating intelligence do not entail genuine cognition. Illustrating this, Thomas Nagel in *What Is It Like to Be a Bat?* (1974), emphasized categorically that subjective experience defines consciousness.¹³ As a result, machines may mimic behavior but lack the “what it is like” aspect, which challenges the position that they think.

ii. The “symbol-processing / computational” argument

This argument builds on functionalism. It was developed by Allen Newell and Herbert A. Simon, who proposed the *Physical Symbol System Hypothesis* (PSSH). For them, “a physical symbol system has the necessary and sufficient means of general intelligent action.”¹⁴ This position became a cornerstone of early artificial intelligence and cognitive science. They assert that human thinking and machine thinking are both forms of symbol manipulation governed by rules, and if this is what thinking is, then machines that manipulate symbols in the right way genuinely think.

iii. The “Continuity with Human-Made Tools” Argument

This argument holds that the art of thinking is not limited to human abilities. Supporters of this argument argue that **thinking isn’t locked inside the brain**. Instead, it can extend into the tools we use in navigating our realities such as notebooks, calculators, or even AI assistants.

Andy Clark and David Chalmers proposed the *Extended Mind Thesis* in 1998 to show that cognition can extend into tools and environments. They propounded their famous example of comparing two individuals: One person remembers an address using biological memory, and another person, who has memory impairment, writes the address in a notebook and consults it regularly. Hence, Clark and Chalmers argue that if the notebook functions in the same reliable way as biological memory, then it should count as part of the person’s cognitive system, making the notebook not just a tool, but literally part of the extended mind.¹⁵

The view on the *Extended Mind Thesis* by Andy Clark and David Chalmers was later revisited by Richard Menary, who emphasizes

¹¹ Jerry A. Fodor, *The Language of Thought* (Cambridge, MA: Harvard University Press, 1975), 27–29.

¹² David Lewis, “Psychophysical and Theoretical Identifications,” *Australasian Journal of Philosophy* 50, no. 3 (1972): 249–258; Patricia S. Churchland, *Neurophilosophy: Toward a Unified Science of the Mind-Brain* (Cambridge, MA: MIT Press, 1986), 337–360.

¹³ Thomas Nagel, “What Is It Like to Be a Bat?” *Philosophical Review* 83, no. 4 (1974):437.

¹⁴ Allen Newell and Herbert A. Simon, “Computer Science as Empirical Inquiry: Symbols and Search,” *Communications of the ACM* 19, no. 3 (1976): 113–126.

¹⁵ Andy Clark and David J. Chalmers, “The Extended Mind,” *Analysis* 58, no. 1 (1998): 7–19; Andy Clark, *Supersizing the Mind: Embodiment, Action, and Cognitive Extension* (New York: Oxford University Press, 2008), 44–58.

that tools, practices, and culture are not merely “external minds,” as in Clark and Chalmers’s position, but integral parts of cognition itself. For example, writing systems and mathematics are not external supports but part of how human cognition develops and operates. Thus, Menary stresses that cognition is distributed across the brain, body, and environment, therefore maintaining that human intelligence is inseparable from the tools and cultural systems we create.¹⁶ This creates room for the plausibility of computers to think.

Nonetheless, given the various arguments about the notion of thinking presented above, it is fitting to say that machines can think, either from a functional perspective or as extensions of the human mind. We shall now look at the second perspective, which argues that computers can not think. The arguments of perspective B may be considered as critiques of perspective A, and vice versa.

Perspective B: On the position that computers cannot think

i. John Searle’s Chinese room argument

This is one of the most referenced arguments used to refute the claim that computers think. It was first presented by John Searle in 1980, and later developed by thinkers like Daniel Dennett, Douglas Hofstadter, and Ned Block. The Chinese Room argument challenges strong AI, which is the idea that a computer running the right program literally has a mind and understands language.¹⁷

Searle’s argument imagines a person inside a room manipulating Chinese symbols using an English rule book, without understanding the Chinese language. By carefully following the rules, he produces correct answers in Chinese and passes them back outside. However, to the people outside, it looks like the person understands Chinese, because the answers are accurate. But in reality, he has no idea what the symbols mean, this is because he is only following rules and manipulating shapes. Therefore, Searle argues that a computer can simulate understanding, but simulation is not the same as real understanding.¹⁸ More so, programs deal with syntax, which is the formal arrangement of symbols, and the human minds deal with semantics, which is meaning. Hence, according to Searle, syntax alone is not enough for thinking, which challenges the idea that computers can think.

Conversely, defenders of strong AI, such as Paul and Patricia Churchland, in *Could a Machine Think?*, reply with the Systems Reply, arguing that while the individual in the room does not understand Chinese, the system as a whole does.¹⁹ On this note, Searle responded by arguing that if the man does not understand Chinese even after becoming the entire system, then the system doesn’t understand either, thereby challenging the claim that machines can think.²⁰

¹⁶ Richard Menary, “Cognitive Integration: Mind and Cognition Unbounded,” in *The Extended Mind*, ed. Richard Menary (Cambridge, MA: MIT Press, 2010), 227–243.

¹⁷ Agordi Paul Oluwatosin, “Artificial Intelligence in the African Context: A Philosophical and Ethical Inquiry,” *Nnadiabube Journal of Philosophy*, Vol. 8 No. 4 (2025):93, <https://acjol.org/index.php/NJP/article/view/7767/7488>;

¹⁸ John R. Searle, “Minds, Brains, and Programs,” *Behavioral and Brain Sciences* 3, no. 3 (1980): 417–457.

¹⁹ Paul M. Churchland and Patricia S. Churchland, “Could a Machine Think?” *Scientific American* 262, no. 1 (1990): 32–37.

²⁰ John R. Searle, “Minds, Brains, and Programs,” 422.

ii. Argument from intentionality

The idea of intentionality was strongly developed by John Searle. For him, genuine thinking requires intentionality, the capacity of mental states to be *about* things (to have meaning or reference). He added that our thoughts are about things, and that human mental states always point beyond themselves. This is lacking in computers because they lack intrinsic intentionality, an essential feature of genuine thinking.²¹ For example, if we think about New Delhi, our thought refers to a real city. A computer processes symbols according to programmed rules. It can manipulate the word “New Delhi,” but the machine does not know that New Delhi is a city in India. And even if it knows the city New Delhi in India, such knowledge was programmed into its memory by its developers through a certain algorithm. Thus, the way symbols connect to humans is not the same way it connects to a machine.

iii. Argument from consciousness

By the term “consciousness,” we mean our subjective experience, what it feels like from the inside. For instance, when we feel pain, there is something it is like experiencing that pain. This is the same as when we see the color red; there is a visual experience attached to it. This “what it is like” aspect is often called qualia. The concept “qualia” (singular: quale) was first introduced in a philosophical context by Charles Sanders Peirce, who used the singular “quale” in 1866 to refer to the qualitative character of an experience.²² On this note, many philosophers argue that machines, even if they process information, lack this qualitative character; as such, they cannot truly *think* in the human sense.

Reinforcing this point, David Chalmers, in his renowned work *Facing Up to the Problem of Consciousness* (1995), distinguished the “easy problems” of cognition (information processing) from the “hard problem” of subjective experience.²³ On the one hand, the easy problem of cognition refers to how the mind processes certain information; this includes processes like paying attention, storing and retrieving memories, learning, and recognizing objects. Chalmers calls these processes “easy” not because they are simple in themselves, but because, in principle, they can be explained by science in terms of how the brain (or a machine) processes information. In this sense, machines can already do many such tasks, so they compute like a thinking system.²⁴

On the other hand, the hard problem of consciousness, Chalmers argues, no matter how complex a machine’s information-processing gets, we can still ask: Is there really *something it is like* to be that machine? Or does it have inner, qualitative feelings (qualia)? Responding to this, He claims that simply explaining functions and behaviors (even perfectly, as in the case of

²¹ John Searle, *Intentionality: An Essay in the Philosophy of Mind* (Cambridge: Cambridge University Press, 1983), 55.

²² Charles S. Peirce, “On a New List of Categories” (1867), in *The Essential Peirce: Selected Philosophical Writings, Vol. 1 (1867–1893)*, ed. Nathan Houser and Christian Kloesel (Bloomington: Indiana University Press, 1992), 1–10.

²³ David J. Chalmers, “Facing Up to the Problem of Consciousness,” *Journal of Consciousness Studies* 2, no. 3 (1995): 200–219.

²⁴ David J. Chalmers, *The Conscious Mind: In Search of a Fundamental Theory* (New York: Oxford University Press, 1996), 25–30.

computers) does not explain phenomenal experience, which is the “what-it-is-like” side of consciousness.²⁵ Hence, when people say “machines can think,” they often mean machines can process information and behave intelligently. Chalmers agrees that machines might solve the easy problems, but he doubts they can solve the hard problem since they do not seem to have genuine subjective experience. This undermines the plausibility that machines genuinely think.

iv. Argument from phenomenology

The argument from phenomenology remains one of the major arguments against the claim that computers can truly think. This happens because it focuses on our lived experience, consciousness, and embodied awareness. In phenomenology, human thinking is not an abstract calculation; it is embodied, situated, and embedded in a social and cultural world. For instance, we do not normally calculate how to walk, greet someone, or recognize a face. We simply cope skillfully with our environment.

Martin Heidegger, in *Being and Time* (1927), argues that meaning arises from *Dasein*’s “being-in-the-world.” As such, understanding is not detached symbol processing but rooted in practical involvement with the world.²⁶ Butressing this point, Maurice Merleau-Ponty in *Phenomenology of Perception* (1945), emphasizes embodiment. His philosophical position demonstrates that our bodily experience shapes perception and meaning.²⁷ Thus, machines lack this embodied perspective, which in turn refutes the claim that they can genuinely think.

More so, putting the phenomenological position into the computing landscape, Hubert Dreyfus, in his works *What Computers Can’t Do* (1972) and *What Computers Still Can’t Do* (1992), critiques artificial intelligence (AI) by drawing on Heidegger, arguing that computers cannot replicate human skillful coping and lived experience.²⁸ In a more recent development on artificial intelligence, Nick Bostrom writes, “machines will be able to outperform humans in most cognitive tasks, but this does not mean they will share our subjective experience or sense of meaning.”²⁹ The implication for this claim is that machines can simulate thinking by performing tasks that look intelligent, but they do not have the subjective and lived experience that makes human thought meaningful.

CONCLUSION

From the two perspectives discussed above, it becomes patent that they contrast each other in scope and meaning. The justifications provided have been critiqued by scholars, which renders such positions inadequate for justification. This renders the question ‘Can computers think?’ philosophically complex and difficult to resolve.

²⁵ Thomas Nagel, “What Is It Like to Be a Bat?” *Philosophical Review* 83, no. 4 (1974): 435–450.

²⁶ Martin Heidegger, *Being and Time*, trans. John Macquarrie and Edward Robinson (New York: Harper & Row, 1962), 78–82.

²⁷ Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Colin Smith (London: Routledge, 1962), 146–150.

²⁸ Hubert L. Dreyfus, *What Computers Can’t Do: A Critique of Artificial Reason* (New York: Harper & Row, 1972), 101–110; Hubert L. Dreyfus, *What Computers Still Can’t Do: A Critique of Artificial Reason* (Cambridge, MA: MIT Press, 1992), 112–118.

²⁹ Nick Bostrom, *Superintelligence: Paths, Dangers, Strategies* (Oxford: Oxford University Press, 2014), 52.

However, the problem with this discourse that keeps resounding is practically seen in many machines and AI models today, which is expressed thus: while computers can simulate many aspects of human cognition and even outperform humans in many tasks, does such privilege imply genuine thinking? Below are some case studies:

- a) Deep Blue (IBM, 1997): This is an AI model that defeated world chess champion Garry Kasparov, showing machines can surpass human grandmasters in strategic calculation.³⁰
- b) GPT-4 (OpenAI, 2023): This is a large language model that is capable of generating human-like text, solving problems, and passing professional exams at or above the human level.³¹

On this note, perspective A admits that such advancement implies genuine thinking, which is premised on its functional role, computational abilities, and the nature of extension which admits machines into the thinking domain. Perspective B rejects the fact that such advancement connotes genuine thinking. It pitches its tent with the argument on intentionality, consciousness, and phenomenology, which are just a few among many critiques labelled on such a position.

However, it is important to note that recent discoveries and studies indicate that AI systems are getting better at performing tasks that require complex, human-like reasoning or concept formation. Some of these researches including contributions of Anil Seth, Yoshua Bengio, and Demis Hassabis, suggest that internal structures in AI may parallel human cognitive processes, but whether this counts as genuine “thinking” remains a philosophical question.³² Thus, most experts, as in the case of perspective B, agree that machines have not yet achieved the kind of conscious and intentional thought that humans experience.

Conclusively, if thinking essentially involves phenomenal consciousness, then we can submit that no computational system, however sophisticated, will qualify. But if thinking is functionally defined, then the boundary between human and machine cognition may already be dissolving.

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³⁰ Murray Campbell, A. Joseph Hoane Jr., and Feng-hsiung Hsu, “Deep Blue,” *Artificial Intelligence* 134, no. 1–2 (2002): 57–83.

³¹ OpenAI, “GPT-4 Technical Report,” *arXiv preprint arXiv:2303.08774* (2023).

³² Geoffrey Hinton, “Deep Neural Networks for Acoustic Modeling in Speech Recognition,” *IEEE Signal Processing Magazine* 29, no. 6 (2012): 82–97; Yoshua Bengio, Ian Goodfellow, and Aaron Courville, *Deep Learning* (Cambridge, MA: MIT Press, 2016), 45–50; Anil Seth, *Being You: A New Science of Consciousness* (New York: Dutton, 2021), 145–150.

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