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Exploring AI: Is it genuine intelligence?

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Over the last two to three years, artificial intelligence (AI) has been a hot topic since it is one of the most revolutionary technological advancements in modern history. With the surge of a new topic come multiple discussions among the public, such as “Will AI replace humans?” and “Does AI present a danger to society?” Nevertheless, to properly answer any of these questions, we must first determine if artificial intelligence is real intelligence that is artificial. Throughout this essay few key points that support my stance on the matter will be discussed, such as comparing the definition of intelligence to the definition of artificial intelligence, looking into artificial general intelligence (AGI), and addressing the relationship between intelligence and creativity. Ultimately, my stance on the matter is that the current state of artificial intelligence should not be considered real intelligence; however, if true artificial general intelligence is achieved then it should be considered real intelligence that is artificial.

To compare artificial intelligence with real intelligence we must first define both of these topics. According to Johns Hopkins Medicine, intelligence can be defined as the ability to solve complex problems or make decisions with outcomes benefiting the actor and has evolved in lifeforms to adapt to diverse environments for their survival and reproduction. [1] Artificial intelligence is the theory and development of computer systems capable of performing tasks that historically required human intelligence, such as recognizing speech, making decisions, and identifying patterns. [2] Current AI technologies, such as machine learning, deep learning, computer vision and natural language processing, all function within a set of pre-determined parameters. AI agents are trained with a set of training data, and by using these technologies the agents can identify patterns to predict an outcome. AI agents are trained to complete one task; however,

multiple AI models can be integrated and used in the same product. An example of this would be ChatGPT-4, which combines OpenAI's chatbot model with DALL-E 3, an AI model trained to generate images when given a text prompt. To summarize, current AI models are limited within a given scope based on the task the model is trained to solve. While current AI models partially follow the definition of intelligence, they diverge from it when it comes to adapting to diverse environments. The main reason for this being that current AI models are trained to do something specific instead of being trained to adapt to anything.

While current AI models are specifically trained to complete certain tasks, there is an AI field called artificial general intelligence (AGI) which attempts to create software with human-like intelligence and the ability to self-teach, while aiming for it to perform tasks that it is not necessarily trained or developed for. [3] Although current AI models do not follow Johns Hopkins Medicine's definition of intelligence; in theory, AGI meets the requirements to be considered real intelligence that is artificial according to the definition. There are no real AGI models created as of this moment: however, in recent times, advancements in AGI-related technologies have emerged. An example of this comes from language learning models like ChatGPT which have the versatility and capability to comprehend context, generate coherent text, answer questions, and perform language-related tasks across various domains. Additionally, there are computer vision models like CLIP that complete image recognition, object detection, and scene understanding tasks to enable understanding of images and text together and allow for advanced image-text matching. [4] Even though these seem like huge steps towards AGI, there is still a lot of work to be done in order to achieve it, and the rate of technological advancements on the

software and hardware sides will determine how fast it can be achieved. Consequently, while artificial general intelligence aims to be human-like intelligence, it is yet to be considered real intelligence at its current state. Nevertheless, once a true AGI model is created then the question “Is AGI real intelligence that is artificial?” will resurface, and my answer to it will be yes because it follows the definition of intelligence.

Artificial intelligence is often used as an inspirational assistant to foster a human’s creativity; however, it will never replace the human soul of creativity. [5] Creativity is defined as the tendency to generate or recognize ideas, alternatives, or possibilities that may be useful in solving problems. According to the California State University, in order to be creative, you need to be able to view things in new ways or from a different perspective. [6] Following this definition, AI models cannot be creative because they would need to be able to form different perspectives which current AI models are unable to do, due to being trained to complete specific tasks. It is common to use the argument that AI cannot be creative to dismiss the idea that AI is real intelligence. As previously established, current AI models are not real intelligence by definition; however, would the argument that AI models cannot be creative dismiss the idea that artificial general intelligence is considered real intelligence by definition? While it is true that AI models are not creative by themselves, intelligence is not the same as creativity. The key difference between the two is that intelligence is more about utilizing known concepts to solve problems, while creativity is more about creating new concepts. [7] Additionally, a necessary condition analysis on the relationship between intelligence and creativity was performed with over 12,000 participants, where it was established that intelligence is a necessary yet not

sufficient condition for creativity. [8] For these reasons, AI not being creative is not an argument against AGI being real intelligence that is artificial.

In conclusion, the discourse surrounding artificial intelligence continues to captivate public attention, prompting questions about its potential to replace humans and its impact on society. However, before delving into these inquiries, it is imperative to scrutinize whether AI qualifies as genuine intelligence. Current AI technologies, while impressive in their capabilities, fall short of meeting the criteria of true intelligence as defined by Johns Hopkins Medicine. Although artificial general intelligence holds promise as a potential candidate for genuine intelligence, it remains an aspiration rather than a reality in its current state. The goal of achieving AGI is steadily progressing with advancements in AGI-related technologies, such as language learning models like ChatGPT and computer vision models like CLIP, to demonstrate its progress. However, AGI's progression is contingent on further developments in both software and hardware. Nevertheless, even if AGI were to be achieved, the distinction between intelligence and creativity must be acknowledged. While AI may lack the ability to be truly creative, this limitation does not negate the possibility of AGI embodying genuine intelligence. Ultimately, the evolution of AI prompts profound reflections on the nature of intelligence, creativity, and the symbiotic relationship between humans and technology. In light of these considerations, I maintain my stance that current AI models should not be regarded as real intelligence that is artificial; that being said, if an AGI model were to be achieved then I would consider it real intelligence that is artificial.

References

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