

## Artificial Intelligence: Its Power...Hallucinations Excepted

The *Economist* cover story in its March 30, 2024 edition has this to say about artificial intelligence: "...in the field of health care, it has the potential to be transformational. In Europe analysts predict that deploying AI could save hundreds of thousands of lives each year." In America, it is estimated AI has the potential to "shave \$200bn-\$360bn from annual medical spending." That would be a huge savings, as the United States spends \$4.5tn a year on health care, 17 percent of its GNP.<sup>1</sup>

Many health institutions report they are using, or planning to use AI to: (a) enhance diagnostic accuracy, (b) improve disease tracking, (c) improve predictions of patients' outcome, (d) recommend better treatments, (e) reduce time for drugs to reach clinical trials, and others.

The health care industry is short-staffed. It is predicted by AI/health care experts that AI will lead to more tasks being off-loaded to computers, thereby reducing the need for certain health care workers. However, if present trends continue, it is estimated that by 2030 the industry will be short of ten million workers.

The stated goals of health care are to first improve care with reducing costs being second. Improved care costs more money and as technology continues to improve, that translates into even more expensive treatments. AI is viewed by some of its supporters as a financial and medical godsend to the health care industry. ...And other industries as well.

However, this writer has documented in two previous articles of problems with the technology. First, AI does not always produce accurate information. Second, in some AI systems, its creators do not understand how the AI software produces this information. This serious problem is known by two names: *hallucinating* or *confabulating*. Stated another way, one AI expert said the technology sometimes "makes things up."

I am far from being an expert on artificial intelligence. I have studied it and examined how the technology works, but much of it remains a mystery to me. But it also is a mystery to some who work in the AI field.

AI skeptics have stated, "The AI models...do not always respond in the same way to the same stimulus. ...This raises philosophical and practical problems for those who [use AI] to regulate medical devices." Of course, other devices as well, such as missile launchers or robots performing surgeries.

While this writer does not claim to be AI-literate, he is well experienced as a medical patient. I am uneasy that I may be faced with having an instrument inserted in my chest to monitor or control heart conditions when that device, if AI driven, might make errors in keeping me alive.

Perhaps I am overreacting, and I have learned that certain AI systems hallucinate more than others. I'm told that the field of artificial intelligence is relatively new, and it will continue to be fine-tuned to eventually be much less likely to hallucinate.

Maybe so, and I do not want to come across as technology Luddite. From what I gather in today's systems, AI obtains its information and feeds output to humans through mathematics and probability calculations. In essence, "The fundamental problem is that language models [the prevalent AI systems use today] are probabilistic, while truth is not." Naysayers claim the AI systems that are built on probability theory (chance variations) "will never be completely rid of hallucinations."

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<sup>1</sup> *The Economist*, March 30<sup>th</sup>, 2024, 13.

As it stands now, I do not want AI machines inserted into my chest to control my afib. And I hope we all agree that we do not want---at this stage of the technology---to have AI robots doing gene splicing or launching missiles.

On the other side of the coin, AI is proving to be able to solve complex problems involving millions of pieces of information that are far beyond the cognitive powers of humans. “Dennis Hassabis, one of the founders of DeepMind, an AI powerhouse that is now part of Google, thinks that [AI] will change the way humans understand life itself.”

AI is growing at a phenomenal rate. Money is to be made in AI investments---a lot of money. I offer a modest proposal about using AI: Beware of the Law of the Instrument, exemplified by the child, with hammer in hand, who looks for something to pound.