

George Gilder on *Gaming AI* (<https://mindmatters.ai/podcast/ep105>)

Robert J. Marks:

How is AI gaming intelligence? That's the topic today on Mind Matters News.

Announcer:

Welcome to Mind Matters News, where artificial and natural intelligence meet head on. Here's your host, Robert J. Marks.

Robert J. Marks:

Greetings. AI is really good at winning games, but how does this, and AI's other accomplishments translate to applications in the real world? When will AI be reduced to practice? Our guest today, to talk about this is George Gilder and George really needs no introduction. He's a friend of movers and shakers, from presidents to business luminaries and politicians.

Robert J. Marks:

And George Gilder's economic and business prophecies have famously been fulfilled again and again. And he is the co-founder, with Bruce Chapman of the Discovery Institute. And of course, the Bradley Center for Natural and Artificial Intelligence is an arm of Discovery Institute. George Gilder has pinned a new monograph for the Bradley Center, entitled *Gaming Intelligence: Why AI Can't Think but Can Transform Jobs*. The monograph is available, like everything else in the world, from amazon.com in print form and Kindle. George, welcome. Thank you for spending time with us.

George Gilder:

Great to be here, Bob. You're quoted in it. You're the same Bob Marks. So imparts great wisdom about the limitations of AI in the pages of this monograph.

Robert J. Marks:

That's right. I noticed that and I wasn't going to talk about that because that would be flying my own colors, but thank you for mentioning that. Thank you for flying my colors.

George Gilder:

Okay.

Robert J. Marks:

So really appreciate. You began your monograph with the following statement. I'm going to quote here, "Artificial intelligence has become this epoch's prime battleground in technology, philosophy, and even religion. At stake is the agenda of a new demotion of the human race." We'll unpack this a little bit as we go along, but how in general, do you see AI as a new demotion of the human race? This is pretty serious prose.

George Gilder:

Well, it declares that the human mind is just a machine that can be simulated by computer algorithms. And so just as it was believed that the great geocentric model of the universe was replaced by the Copernican view that had the sun the center of the universe, thus demoting the human endeavor from being the center of everything, to becoming a mere planet of a larger body.

George Gilder:

And ever since then, science has been further demoting the earth to a fringe planet. And one of multiple parallel universes that are often assumed without any grounding or persuasive evidence. So this is machine learning and AI, artificial intelligence are believed to be headed for a singularity, as my friend Ray Kurzweil calls it, in which machines will be able to out perform human minds in every contingency and application and human beings really will become unnecessary.

George Gilder:

And indeed, the vision is that these machines will become so powerful that they can replicate and advance themselves so that they will project their intelligence and technology through the universe and ultimately, colonize the whole universe in a way that mere human beings, with our biological, carbon-based bodies, never could accomplish. So it is a way of diminishing the human mind to some material phenomenon that can be reduplicated readily by a machine, and then constantly exceeded by machines.

Robert J. Marks:

You have a phrase for this in your book, you call it materialist superstition. I really liked the combination of those two words. And that's really what you're talking about. And you also referred to something called the AI movement, which adopts this materialist superstition. How widespread is this AI movement? What is the AI movement?

George Gilder:

Well from China to the United States, but oddly, even though AI is advancing just as fast in China, if not faster than in the United States, there's less inclination in China to regard it as a threat or as some channel to usurping the human brain. So it really is a specialty of the American academic science, this materialist superstition. I call it, the flat universe theory, that again, which is just as delusional as the flat earth theory. The flat universe theory says there's nothing out there, but physics and chemistry. And that is the materialist superstition, the beliefs that there's nothing there, except physics and chemistry.

Robert J. Marks:

So this is very interesting, especially since China is notably atheistic and therefore materialistic. And they're sinking, I believe the figure I heard was \$30 billion into development of artificial intelligence. And yet, you say that this movement isn't as dominant there as it is here. That's really interesting.

George Gilder:

Yeah. I think they're just more practical at using these machines to enhance human capabilities and that's really what AI does. I mean, recently the DeepMind division of Google, which is their really most sophisticated AI division, although there's AI all over Google. But DeepMind has recently mastered protein folding.

Robert J. Marks:

Yes.

George Gilder:

And that is a major achievement. It's the sort of last frontier of the biotech revolution or one of the latest frontiers of the biotech revolution. We discovered DNA and the coding that translates directly into proteins by a very complex process, from the DNA code to the ribosome, to the 22 amino acids in a protein.

George Gilder:

But until you can actually fold the protein in that complex way that protein plectics are manifested, you can't really create a protein that works. So this breakthrough, by machine learning and AI is very impressive. And if you have a process that's deterministic and can be expressed in symbols, then AI and machine learning has awesome capabilities. And they've achieved a goal that humans with their much slower algorithmic processes...

George Gilder:

Humans have inductive capabilities and imaginative capabilities and moral capabilities and century integration and all kinds of mental capabilities that are really absent in AI. But AI, if you got the problem structured and it's deterministic and the inputs can be rendered mathematically, can do billions or even trillions of parallel operations a second and thus, achieve absolutely amazing acceleration of human capabilities. But no matter how fast they compute, there's no trigger point where they suddenly become a mind.

Robert J. Marks:

Yes, absolutely. One of the things AlphaFold, they have algorithms that predict the structure of a protein, based on its genetic makeup. I'm really not an expert in protein folding, but one of the quotes that I found from DeepMind's CEO, I think his name is Demis Hassabis.

George Gilder:

That's right.

Robert J. Marks:

He said, "It's still a long way to go before we can say we've solved protein folding in any meaningful way." So they've made lots of progress, but they still have a long way to go, I guess, towards the final solution is what I understand.

George Gilder:

I guess that's true. However, they did solve for, I think 38 out of 43 of the protein folding problems that they confronted, were solved by the DeepMind process. And the best human contribution, I think was six or seven out of 43 problems. These are just rough recollections, but I think they did figure out the folds for those particular molecules.

George Gilder:

But of course, there are infinite possible molecules. So to solve 43 may not be, it's a promising start, certainly. And it's something that machine learning achieved, that human learning processes couldn't

because of the conditions that I describe. It's a deterministic problem, the data can be expressed in a symbol language, a code, and it can benefit from the vast acceleration that computational silicon can achieve.

Robert J. Marks:

This is quite an accomplishment. There was an effort at the University of Washington 20 years ago, called Foldit, where they farmed out computational resources. So if you weren't using your computer at 2:00 AM in the morning, you let Foldit use it. And then they had some graphics and then they decided to turn it into a game. And it turned out that people, that is their customers, played the game and were able to solve the Foldit problem, where the algorithm was unable to do it, but that was 20 years ago. So we've made quite an advance since then. And the other thing that strikes me is, folding protein is kind of like a game, right? That's what DeepMind does well.

George Gilder:

That's right. You see, I began this subject really by going back to Bletchley Park in Britain, during the second World War, when Alan Turing and I. J. Good were key figures in solving all the German codes and thus making an absolutely vital contribution to the victory in the second World War, by endowing the British military intelligence with the capability of interpreting all the German codes. It was an amazing feat and the computers were called the Colossus.

Robert J. Marks:

Yes.

George Gilder:

And that I think, was the first great feat of artificial intelligence. I mean, humans, no matter how many together, could not do essentially real time breaking of encryption in wartime codes. And yet this machine that Turing and his team programmed could do this. And I learned that Turing and Good used to practice for their programming challenges by playing the game of Go.

Robert J. Marks:

Really?

George Gilder:

They also played chess and Turing taught Good the game of Go. And so Go was regarded as an ultimate intellectual challenge, both in China and Japan. It really has a tremendous mystique in Asia. And what precipitated that giant Chinese AI program, 30 million and more, that you've cited is when the DeepMind program beat Lee Sedol, who was the world champion in Go.

George Gilder:

And now to this day, people who say AI is going to usurp human brains and it's going to take over the world and it's going to replicate and advance and take over the universe and the singularity for the entire cosmos. People who believe that continue to cite the victory in Go, and the victory in chess and the victory in these games. But games are identified by the fact that the symbol systems and the actual objects, the maps and the territories as it were, are the same thing.

Robert J. Marks:

Yes.

George Gilder:

But we all know that maps, no matter how refined the digital map, it differs inexorably from the actual territory. And it takes human beings, interpreters, as Charles Sanders Pierce wrote many years ago, "To mediate between a map and the territory and its symbols and objects, there's no intrinsic identity between symbols and objects." And if it's a game, the real essence of it is the symbol and the object is the same thing.

George Gilder:

In Go, you have these two little stones and you move them across a board with hundreds of points on it. And the symbols and the objects are the same. So that if you can program the computer to conduct these Go games at billions of cycles a second, they can obviously outperform any human being. But that's because there's no difference between the symbol and the object.

George Gilder:

But the rest of the world where we live, we have symbols, we have mathematical languages, we have computer codes. We have a vast array of symbol systems, which allow us to interpret reality, but the symbols are never the same as the reality. They're labels. They got to be applied by human minds, to reality.

George Gilder:

As C.S. Pierce put it, "They need an interpreter between the symbol and the object." And he contended on this basis, that reality is not binary as computer languages are. Reality is triadic. It's three way. Symbols, objects, plus interpretants. And this is the flaw of all these materialist superstitions, all these visions of based on games, successes in games, extrapolated to successes and reduplicating human intellectual capabilities.

Robert J. Marks:

That's fascinating. I want to talk to you some more about the idea of the so-called, AI movement, but we'll do that in a subsequent podcast. So thank you, George. We've been talking to George Gilder, who's fascinating monograph, *Gaming Intelligence: Why AI Can't Think, but Can Transform Jobs* is available like everything else in the world, at amazon.com. So until next time on Mind Matters News, be of good cheer.

Announcer:

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