# AI's Boundaries and Human Creativity: A Conversation with Dr. Robert J. Marks

https://mindmatters.ai/podcast/ep308

Announcer:

Greetings, and welcome to Mind Matters News. The Mark Davis show airs on 660 AM The Answer in Dallas, Texas. Mark Davis is among the sharpest of the crop of today's talk show hosts. And during a recent program discussing artificial intelligence, he was contacted by Dr. Tom Winkler, Regional Ambassador at Discovery Institute. During their conversation, Tom mentioned the book, Non-Computable You authored by regular Mind Matters News host Robert J. Marks. Today, we have Tom's original conversation for you, followed by Mark Davis' later interview with Dr. Marks. Enjoy.

Mark Davis:

We are in Garland. Tom, Mark Davis welcome. Happy Thursday.

Tom Winkler:

Good morning, Mark.

Mark Davis:

Hey.

Tom Winkler:

Lots to share, but I'll try to keep it concise. There's a book that's written by a colleague of mine, Robert Marks II, who's a professor of EE at Baylor in Waco.

Mark Davis:

Yeah, electrical engineering?

Tom Winkler:

Yes. And he's the Director of the Discovery Institute's Walter Bradley Center for Natural and Artificial Intelligence. He's written a book called Non-Computable You, the under title of which reads, What You Do That Artificial Intelligence Never Will. Bob is a super neat guy.

Mark Davis:

I need to find him. Does he do talk shows?

Tom Winkler:

Well, I'm a colleague.

Mark Davis:

Oh, dude.

Tom Winkler:

You're talking to somebody that can call him on the phone today.

Mark Davis:

As soon as you and I are done here in a couple of minutes, I'm going to put you right back in the capable hands of Rhonda and she will let you do that in a heartbeat. Let's get the debate out of the way. Maybe get July 4th out of the way. I don't know. And I would love to have him on. Being familiar with him and... Because if anybody's just joining us, I hit up a couple of keystrokes and AI wrote a song about me and it's great-

Tom Winkler:

It is a great song.

Mark Davis:

It's fun and the whole AI thing is fun, intriguing and scary in a sort of kidding way, but sort of not. And it's funny, when Rhonda told me that... Put Mr. Mark's name up there, I did a little Googling and I think he wrote an article or delivered a speech where along the lines of AI will neither destroy the world nor save the world. It seemed to be a call to us to sort of moderate our obsession about it, which I think sounds like good mental health and yet nobody ever knows what's going to happen. And the smartest guy in the room, you never know. If we go back 20 years ago and talk about smartphones, the degree to which they would just destroy the brains of millions of children and destroy the family dynamic of dinner conversation, things like that. I don't know if anybody could have foretold that.

Tom Winkler:

Well, I'm happy to be a resource for you, but it's a wonderful book and he's a wonderful person.

Mark Davis:

Do me a favor because I'm curious. Listen, I look forward to that. And again, I'll put you on hold and Rhonda will be back in your ear and we can share data there. Does a thing or two occur to you of the subtitle of the book? What are the kinds of things that AI will never be able to do that you and I can?

Tom Winkler:

Well, I will tell you a few shortcuts. It will never be truly created. I know that seems in contrast to what you've just explained.

Mark Davis:

No, I know what you mean. By definition it will all be derivative. What it did in writing that song is go out into the universe of songs and borrow things and assemble them. But you know what? In a weird way, when Billy Joel writes a record, doesn't he kind of think of songs he's heard and things like... So I know what you mean, but isn't it kind of the same?

Tom Winkler:

Well, it's just the super computable capacity of it can filter through hundreds of riffs and do it in seconds where you and I would take hours or weeks to do it. It's doing what humans only the programmer only can do, it's input, algorithmic and still even at the end of the day, input in, input out. It doesn't create.

Mark Davis:

You know what? Great point. And I just figured out sort of the difference because while AI writing that song and Taylor Swift writing a song today might be kind of a comparable exercise. If AI existed in 1966, it would not have come up with Sgt. Pepper the following year because that was just wholly new. It's like where in the world did this come from? And it came from the brains of Lennon and McCartney and George. Okay, all right, so give me one other thing or another couple. I don't know, I'm having a good time, of things that AI will, human type things that it will never be able to do.

Tom Winkler:

Achieve consciousness.

Mark Davis:

I hope. Defined as?

Tom Winkler:

An independent entity that is completely autonomous of its programming. According to Dr. Mark. He's not the expert. I'm a retired physician though, and I do have a little bit of an ability to think. And what he said in the book are pretty impressive and he's got some really good hard examples of these very questions that I would be remiss to try to do in a quick interview with you right now.

Mark Davis:

No, understand. And that one, even with my little brain sort of makes sense too. You and I talking, we literally formulate stuff out of nothing. There's something that will just occur to me or occur to you. And it's not because we read any article, it's not because of a conversation we had. It's just deep within our brains, our hearts, our souls, which is different from the derivative, the huge genius automated brain of AI with the world of stuff out there. It will always be borrowing from somewhere. Give me a trifecta, a third one, I'll let you go.

Tom Winkler:

Well, just an example, we have a COSM conference on technology in Seattle every year. That's where Discovery Institute's headquarter is. But there's several of us that work here in Texas, including myself. We had Ray Kurzweil on and let him talk about how he's going to be uploaded or whatever. And the point is Discovery Institute is not afraid of both hands clapping. We love debate, we love open dialogue, we love people to put their side out and we'll counter with that. And so to answer your question, it's a great place to exchange ideas. We're a think tank that thinks.

Mark Davis:

You've mentioned this. To wrap us up, I'm just here discovery.org, right? Discovery Institute, a public policy think tank doing stuff like this largely as it sort of science-y technology futurism kind of stuff.

Tom Winkler:

Not exclusively that. We have an American Center for Transforming Education and we have programs that we're consulting with the Texas legislature. One of our fellows is also full-time with the Heritage Foundation, came to Texas to help craft language for the athletic bill for men to not compete in public schools against women. The biggest program is the Center for Science and Culture, which argues for

intelligent design out of science of the universe are best described by an intelligent purposeful design versus random processes undirected with matter of energy-

Mark Davis:

Thank you. And looking and going to discovery.org. This is now officially a 20 minute commercial. I may have to bill them at some point. They seem to be that intelligent design thing by respond to that affectionately and not that they necessarily do a whole lot of politics, but here's an interview with Dr. Kerry Ingram and Jesse Kelly decrying indoctrination in K through 12 public education. Here's an article featuring a hospice and palliative nurses association, regrettably, planning to surrender to the assisted suicide agenda. So there seemed to be some political and cultural things that I share space with.

Tom Winkler:

Pretty much so.

Mark Davis:

Yeah, that's awesome.

All right. Discovery Institute. Dr. Bob Marks, his name again.

Tom Winkler:

Yes. Website, mindmatters.ai.

Mark Davis:

Mind matters, clever, .ai. All right, now here comes Rhonda because don't tease me. You told us you can get in touch with him. This sounds like something I would love to do because I get more interested in it the more I go down a rabbit hole featuring it. So thank you. There he is Rhonda, there's... I'm very grateful there. The discovery... What? Really check it out. The Discovery Institute.

Announcer:

And now here's Mark Davis's interview, catching up with Robert J. Marks.

Mark Davis:

But this is a wonderful opportunity to do something that just sprang organically from another part of the show. Just looking to have fun in life, I learned of this AI musical platform where you literally tell it a subject to write a song about, give it a genre like country or smooth jazz, and in about 30 seconds the vocals, the words, the instrumentation, it's there and it is shockingly good. The key adverb there is shockingly. So I did that just to have some fun but buried within the fun and buried within all the really interesting and exciting and sort of stimulating angles of all these artificial intelligence stories. I mean, AI does two things to people. It excites them, it immerses us in a sense of wonder or it scares the bejabbers out of us. And I think I have equal helpings of both.

And so a guy calls me and says, "Tell you what you got to do. You got to talk to this gentleman, Dr. Robert Marks," affiliated with an outfit called the Discovery Center, discovery.org. And the resume may take us half the segment because he's done so much, but we got in touch and we're going to talk to him because he has a wonderful, wonderful book called Non-Computable You: What You Do That Artificial Intelligence Never Will. And so what a pleasure it is to say hi to Dr. Robert Marks. Welcome sir. How you doing?

Robert Marks:

Thank you, Mark. I'm doing exactly right.

Mark Davis:

Well, and I hope I am too. It is so, so very nice to have you. Listen, let's do the resume if we even have time. You've got a Baylor credential, a distinguished professor of electrical and computer engineering, some history at Texas Tech, the Discovery Institute. Is your business card the size of a bed sheet? How should we best identify you?

Robert Marks:

I don't know. I'm just a simple guy who's lucky. I feel like Jimmy Stewart, when he went to Washington in the movie, what was it?

Mark Davis:

Mr. Smith Goes to Washington.

Robert Marks:

Mr. Smith Goes to Washington.

Mark Davis:

Yes indeed.

Robert Marks:

Yeah. And he was appointed senator and he got up and he said, "There must be some sort of mistake." That's how I feel looking at my life. It's just been one blessing after another.

Mark Davis:

Well, the humility makes you even more likable. And so let's go right to the crux of what the gentleman who was a caller sent us to you about. And what I've been doing sort of some reading up on, it seems like the sense of wonder and awe that I have about AI is well-placed, that some of my concerns are also well-placed about human job losses or I think the glib line is that AI will be taking over our lives and human will be crushed. You chose to push back against that in that book, Non-Computable You. Give me a short sketch of that and why you don't want people to be too worried.

Robert Marks:

Well, I think that artificial intelligence is going to be disruptive. We've already lost to technology. A lot of brick and mortar stores. We don't have toll booth operators anymore. Travel agents are gone. And so it's going to be disruptive in the way that we think about things. But on the other hand, if you look back at technology and what technology has done in history, we have freed up time. We can do things now, which we never could do before. My great-grandfather was probably out hoeing corn right now in order to feed his family. We don't have to do that anymore. And I think that AI is going to free up our lives and let us do things that we enjoy more.

Mark Davis:

That is promising. And the sort of go-to industry is the buggy whip industry. I mean, there was no more buggy whip.

Robert Marks:

Exactly.

Mark Davis:

The good news was we got an automobile industry. There tends to be some give and take. The jobs you describe and the things that dad's not doing, those tended to be manual labor. The AI threat, if there is one, is really creative. It's writing term papers for people, it's writing songs, it's doing things that are usually hatched from the human mind and the human heart, isn't that different?

Robert Marks:

Well, I would push back with you, Mark. I would say that AI is not creative. In fact, Noam Chomsky said that AI, especially these ChatGPT sort of things is actually digital plagiarism. And we see this manifest now all over the place. There's all sorts of these lawsuits about people going in and suing these AI companies because they used all this copyrighted material in order to come up with their generative AI. The New York Times is suing the people that generate ChatGPT because they found out that they went behind New York Times paywall and used a lot of those articles to train the ChatGPT. Getty Images has a big lawsuit now about generative AI that generates images and they have incredible evidence to that. So it's going to be interesting to see how this plays out.

So I would push back on that and as a creative, I would go to a guy named Selmer Bringsjord. He's at Rensselaer Polytechnic. He said, "AI is going to be creative if it does something beyond the intent or the explanation of the programmer." And we have seen no cases where a program has done more than the intent of the programmers or if it goofs up the explanation of the programmers.

Mark Davis:

That's a good definition.

Robert Marks:

Yes, it is.

Mark Davis:

It's a super solid definition. And in fact, if people are driving around going, "How does this work?" If you go to ChatGPT and say write me a term paper about the Crusades, thousand words, it'll do it. In so doing though, it's essentially like a lightning fast Google search and then added in with some familiarity with the English language and composition structure. So it is completely derivative as were these songs that I made it do. There is a technical difference in that versus if I, it's a talent I don't have, if I were to sit down and write a song. But if I do it out of my human heart, my human mind, my human ear, am I not borrowing from every song I've ever heard and just sort of deciding what I like and what I choose? And isn't the AI just doing the same kind of thing by a mechanical process?

Robert Marks:

Well, it is in a way, but let's go back to the song. I went back and listened to your podcast and listened to the song. It was pretty good, but it was kind of derivative. I used to be in a garage band that I know

enough about chord structures to be dangerous. Yeah, chord structure was kind of nice. But let's look at, for example, training artificial intelligence to generate the music of Bach. What would you do? You give it all of the baroque music from Bach and Handel and things like that. And what does it generate? It generates something that sounds like Bach. Will it ever generate jazz? Will it ever generate something that sounds like Wagner? No.

In order for it to generate something that sounds like Wagner, you have to train it on something that generates that... You have to train it on Wagner music. And you ask it specifically if I remember from the podcast, you ask it to generate some soft jazz. And so it did that. It went to that database from which it learned and generated some soft jazz. And the lyrics were pretty good. I mean, it is kind of cool.

Mark Davis:

Your pretty good is exactly right because it was in fact almost poetic in a couple of places. But then as AI will do in your term paper or your song, there'll be a lyric that'll be just kind of weird or a stretch or forced where you'll go, that was not a human being. But isn't it true that the AI of a year ago is not the AI of today and the AI of today is not the AI of even this Christmas. It is constantly getting better.

Robert Marks:

It is constantly getting better. But one of the premises of my book is that there are limitations to computation. Just like there's limitations to physics. You can't generate or invent a perpetual motion machine. You can't go near the speed of light because your mask goes to infinity. There are just some things you can't do. Mathematics has some things you can't do. You can't trisect an angle with a compass and a straight edge-

Mark Davis:

Divide by zero.

Robert Marks:

Well, you could. Yeah. Okay.

Mark Davis:

Oh, no.

Robert Marks:

There is some math-

Mark Davis:

You can divide by zero? Everything I learned is wrong. Wait, a minute.

Robert Marks:

Well, no.

Mark Davis:

It's an irrational number.

Robert Marks:

No, you were taught from a mathematician. I'm taught as an engineer. You divide by zero, you get infinities.

Mark Davis:

Okay. I'll stop talking.

Robert Marks:

There's a whole mathematics, but that's something else.

Mark Davis:

I understand.

Robert Marks:

But there are things that computers and therefore artificial intelligence will never ever do. One of them is to be creative. It can only do algorithms. It can only do step-by-step procedures. I argue that there's lots of things that we do that algorithms will never do. We love, we have compassion. I think even deeper, we have creativity. We are able to understand. AI will never understand. It can add the numbers, computers can add the numbers six and four, but it doesn't understand what the number six is. It doesn't understand what the number four is.

Mark Davis:

Gotcha.

Robert Marks:

So these are attributes which we have that AI will never have. And interestingly, this is more than speculation, these step-by-step procedures. Alan Turing back in the 1930s showed that there were certain problems you could not solve by step-by-step procedures. And that's manifest in us as human beings.

Mark Davis:

So that is in its way comforting but the heartlessness of it might be a double-edged sword. I assume you're familiar with Asimov's I, Robot, in which there was a robot code. The robots will never do anything to harm us. Well, the robots took that very seriously and figured out that we were going to harm ourselves. So humanity kind of had to be destroyed. In its heartlessness, in its cold calculations, is there any reason for it to be concerned about handing over to AI certain decision making where even with its heartlessness and its denotative data driven derivative method, it'll do something that would just be a nightmare?

Robert Marks:

Oh, exactly. And I think that anybody that hands over anything, any operation that's dangerous potentially to AI is really stupid. And this is... A great movie that depicts this is 2001: A Space Odyssey.

Mark Davis:

HAL.

Robert Marks:

That was not the AI going conscious. HAL, he was not programmed to take over. He was programmed rather that the mission was more important than the lives of the astronauts. So this was an example of faulty AI programming and manifested itself terribly so let's not put AI in the charge of everything without human oversight.

Mark Davis:

So if we are plugging AI into all kinds of things like reporting or some future AI talk show host, please let that... I'd like to think I have charms that would exceed that. There are a couple of things that I'm intrigued by in terms of bias. There was one story I saw where somebody asked an AI platform who won the 2020 election and it did not say Biden. And if you don't say that you're a danger to democracy. It said, well, Biden was declared the winner. But there are the following arguments that pushed back against that. I went, wow, refreshingly even-handed. Yet I myself asked AI how many genders are there? And it gave me the most ridiculous gobbledygook about, well, gender is fluid. It might be a social construct. So reconcile those two. What is the nature and the future of bias when it comes from an AI brain?

Robert Marks:

Well, you're exactly right. If one of these models is trained on literature that says the world is flat and there's no contradiction, it's going to come out and it's going to say the world is flat. The AI without bias is like water without wet. You cannot generate AI without generating bias. And the people that are behind these ChatGPT platforms and stuff are really working on this. A couple of years ago I asked ChatGPT to write a negative song about Joe Biden. I know you talk about the Biden death-

Mark Davis:

Campaign Death Watch. Right.

Robert Marks:

Yeah. But it says, no, this is against our policy to do this. I asked to generate a negative poem about Donald Trump. The first line says, with a face like a moldy orange.

Mark Davis:

Perfect. Well, there we are. Which proves something, which goes to say that all these references to cold inhuman calculation, ultimately everything AI does is go in search of something that some human being said or wrote sometime. Correct?

Robert Marks:

Absolutely. And that goes back to creativity. Yes.

Mark Davis:

Wow. Okay. Well listen, a couple of minutes on what is, and I warn you here, the first of what I hope are recurring visits, because we're just getting warmed up because I have attained some familiarity with stuff you have done, things you have written about. And if you're good with it, every once in a while,

we'd love to spend some time together. I am so honored to have you... In the final couple of minutes, let's go to another book you wrote. It's The Case for Killer Robots because these days we're doing war by drone. If there's some enemy that we got to go kill in a just war, I'd rather have some drone do it than lose one drop of American blood. How much of warfare can be done robotically?

Robert Marks:

I think quite a lot. And I think the military is, in fact, I'm under contract with some DoD offices to do research in this area. But the fundamental idea behind the case for Killer Robots is the following, technology is out of the bag. Technology wins wars. We won World War II because of the Norden bombsight, because of radar, because of Alan Turing cracking the Enigma code. Wars are won by technology. And I think even more importantly, it gives your enemy pause before they do anything terrible to you. So there were a lot of groups coming out and saying, "We should not pursue killer robots anymore. It's inhumane." Yeah, it's inhumane, but war is inhumane itself. And unfortunately, if we don't pursue the technology that our adversaries are pursuing, we're going to be left in the dark. We're going to be diminished. So that was the purpose for the case for Killer Robots is to point that out.

Mark Davis:

No soulless AI could craft this sentence. I've done this for a long time and miss, I have a feeling will be when my career is done, one of my favorite acquaintances that I have struck up. What a joy to meet you. Best place to send people to read your stuff, get more familiar with you, discovery.org. I know those people now, Discovery Institute. Give me anything else you might want to give me.

Robert Marks:

Yeah, I think Tom Winkler who talked to you, he was a guy that you talked to previously mentioned our website, mindmatters.ai. I post there, I do some podcasts there. I also post on Newsmax. So if you go to Newsmax and look at Insiders, I have a number of columns there. So those are a couple of good places to go. Mindmatters.ai and Newsmax Insiders.

Mark Davis:

Dr. Robert Marks, maybe even before summer is over because I could pick up with this tomorrow. But I don't want to badger you. That I'm just so grateful. Let's do something every once in a while and thank you and good health to you and success to you. And thanks for being on the show and giving us a break from the craziness of the parade of passing crises to talk about future crises. It was an oasis of refreshment. I really appreciate it.

Robert Marks:

Okay. Thank you, Mark.

Mark Davis:

That is Dr. Robert Marks.

Announcer:

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