

7. Public Data & AI

Terrie Lambert, 23.12.2022

Youtube Video

<https://www.youtube.com/watch?v=0gleekjr59I>

[00:00:05.750] - Terrie

Our loving God in heaven. You've brought us safely through another week. We are grateful for all that is done on our behalf. We have life and strength and health and your loving kindness and your truth. As we prepare to enter into your Sabbath, may our thoughts and emotions be channeled in your direction. We ask for guidance in this discussion that we may see your glory and also understand the issues that are challenging us at the moment. We leave ourselves in your care. And we thank you for the truth that has opened our eyes to all the world events that are showing us where we are. And we pray for that preparation to be ready for the test. We ask in Jesus name. Amen

[00:01:02.990] - Terrie

I hope you've all had a good week and you've been able to sleep soundly knowing that no superintelligent AI is going to turn the world into paper clips and kill us all. I hope those fears were dispelled. And we want to just continue looking at artificial intelligence tonight. What it is that we do have to be worried about. I'm just going to read from Wikipedia about existential risk from artificial general intelligence. Because there are loud voices with lots of money that are promoting this fear of existential risk through AI.

[00:01:50.120] - Terrie

Existential risk from artificial general intelligence is the hypothesis that substantial progress in artificial general intelligence could result in human extinction or some other unrecoverable global catastrophe. It is argued that the human species currently dominates other species because the human brain has some distinctive capabilities that other animals lack. If AI surpasses humanity in general intelligence and becomes super intelligent, then it could become difficult or impossible for humans to control. Just as the fate of the mountain gorilla depends on human goodwill, so might the fate of humanity depend on the actions of a future machine, superintelligence. Why are mountain gorillas alive today? Is because we're basically nice people and we allow them to be alive. And what if you had something that was more intelligent than us, that didn't feel that way towards mountain gorillas or didn't feel anything. There wouldn't be any push to keep them alive and we would fall into that same category. The chance of this type of scenario is widely debated and hinges in part on differing scenarios for future progress in computer science. Once the exclusive domain of science fiction, concerns about superintelligence started to become mainstream in the 2010's, and were popularized by public figures such as Stephen Hawking, Bill Gates, and Elon Musk.

[00:03:39.990] - Terrie

They popularized that fear. In 2014, Elon Musk said, we have unleashed the demon. And both he and Hawking said that we are under threat within the next few decades, if not earlier. A lot of money and energy is going into developing artificial intelligence because we feel that we need it for the future, but also curbing the artificial intelligence. And that is called the alignment problem. There's a fear that superintelligence won't be aligned with our values. The question is, whose values do you align the AI with? Does that remind anybody of anything to do with our message? Do we have an alignment problem? Just like scientists and engineers have an alignment problem. That that's their term, the alignment problem, with AI. What's our alignment problem and what was given to solve it? Any thoughts? Did we have an alignment problem, Katherine?

[00:05:16.350] - Katherine

Well, we were aligned with the wrong side of the political spectrum. Perhaps that's what you're speaking of.

[00:05:27.070] - Terrie

Yes, that's why we had the midnight cry message. We were aligned with wrong values. And so we were given a message to realign us. And that's the purpose of the reform line. A reform line is realigning us so that we have the same values as God, that we are thinking the way he thinks and feeling the way he feels. Would you like to add anything more to that, Katherine?

[00:06:00.030] - Katherine

Well, Josephine has a hand up. I didn't.

[00:06:06.670] - Terrie

Okay, Josephine.

[00:06:19.360] - Josephine

You said, what's the solution? And I thought the methodology that was given. The parable methodology to help us guide us in the right direction.

[00:06:37.990] - Terrie

Yes. The messages that we have. Yes, God has sent messages to realign us, but first we have to realize that there is an alignment problem. And the same is what is happening in the world. The scientists and engineers and promoters of AI are concerned that these AI's are not aligned with our human values. But what if that alignment is somebody like a DeSantis? Who who are you going to align that value with? This is the great debate amongst scientists at the moment. Do we even bother? Don't we just trust humanity to make the right choices? They are trying to solve this alignment problem. Somebody put it like this. The alignment problem refers to the challenges caused by the fact that the machines simply do not have the same values as us. In fact, when it comes to values, then at a fundamental level, machines don't really get much more sophisticated than understanding that one is different from zero.

[00:08:07.350] - Terrie

Something that we looked at last week. That they don't have values. All that the machines understand is that one is different from zero. Basically, AI is math. Beautiful, amazing, brilliant math. But that's it. Just like we see in politics, in religion. It's a polarized world, and it's polarized in these sciences as well. We went and looked at another voice, at Melanie Mitchell. She is the Davis Professor of Complexity at the Santa Fe Institute. A professor of Computer Science at Portland State University. Her current research focuses on conceptual abstraction, analogy making and visual recognition in artificial intelligence systems. She's the author of six books, numerous scholarly articles. We looked at one scholarly article, which was 2014. And I can put her up here. Melanie Mitchell. I'll just put M.M. And she wrote the paper 'Why is AI harder than we think?' And she gave four fallacies. Let's review them. I'll remind us of the first one. The first fallacy was that narrow intelligence is on a continuum with general intelligence. That's a fallacy. It's not true. What are we talking about when we say narrow intelligence? I had an experience just a couple of weeks ago.

[00:09:46.470] - Terrie

I was shopping in Melbourne. I was at a supermarket that we have out here in the sticks. But I went to a larger one in Melbourne, and I had one of those trolleys that isn't a deep trolley. I didn't need to put too much in that trolley. And I came up to the self serve checkout. I put pears on the scales, and I didn't have to press anything. It came up, and it gave me a couple of choices. That pears came up automatically. Usually you have to press fresh produce. Didn't have to do that. That's interesting. Then I put some onions on. Same thing. Then I finished my shopping, and it asked me, have you emptied your trolley? Yes I did empty my trolley. But it wouldn't let me go any further. It said, Call assistance. I called assistance, and I didn't know what the problem was. And she said, she doesn't like the empty bag in your trolley. And I said, It knew that I had pears on it. Oh yes, she's very smart. It's not a she. We understand that. It's an it.

[00:11:04.590] - Terrie

But this woman is very proud of this machine. And this is the advances that is happening in narrow intelligence. I had an empty supermarket bag in my trolley. It knew it was in my trolley. It knew I'd put a pear. These narrow intelligences are improving all the time. And when we see them, we go, wow. But that doesn't mean that there's any improvement in general AI. They're just not connected. We're going to continue to see improvements in narrow intelligence, and it will wow us. No closer at all to artificial general intelligence, to human level capabilities. That was fallacy number one. Can anybody remember one of the other three fallacies? No. Okay. Josephine,

[00:12:31.370] - Josephine

We discussed it last week, didn't we?

[00:12:35.570] - Terrie

There were four fallacies.

[00:12:39.970] - Josephine

I can remember the one that I actually mentioned, but not in those words. But I would say reasoning. The computer can't really reason.

[00:12:51.590] - Terrie

No. Why do we use the word reason? What's the fallacy? That's correct. We say that it reasons. We say that it understands. We say that it's thinking. What's the fallacy? What makes us do that?

[00:13:09.770] - Josephine

I'm stunned.

[00:13:13.210] - Terrie

Okay, we anthropomorphise it. We use human language, human terms for this machine, and that creates confusion.

[00:13:24.410] - Terrie

When we use terms like reason and think, and values, they're fallacious terms. Even the word intelligence, scientists argue over that word. That's two fallacies. Anybody remember any others? Katherine. Sorry.

[00:13:56.740] - Katherine

No, that's okay. It was a bit last minute. Has it got to do with the brain? And your intelligence is not completely 100% in your brain?

[00:14:07.640] - Terrie

Yes. Keep going.

[00:14:10.520] - Katherine

Well, I think that article that you shared was speaking on this point. But there's a lot more to our experience than just what goes on in your brain, because there's a feedback cycle that happens between your body, your heart rate, your breathing, the impulses that you get from touch. And all of that combines together to give you an experience which you just couldn't replicate with a computer, at least not in the foreseeable future. Exactly. Far too complicated in advance for them to even start going anywhere near the level that we are capable of.

[00:14:49.460] - Terrie

Thank you. Yes. The idea of a computer sitting on a desk and a brain sitting in a VAT. You can't take the brain away from the body, just as you explained. Intelligence is a holistic experience. There are more and more scientists recognizing the importance of embodiment and how that will affect artificial general

intelligence. Thank you. And the fourth one was that the easy things are easy and hard things are hard. And Melanie went on to explain that what is easy for us is hard for a computer. What is hard for us is easy for a computer. And we'll talk a little bit about that now. I want to share. Melanie Mitchell wrote a book in 2019. I think I gave the wrong date last time. 2019, she wrote a book. And in that book, she speaks about Andre Carpathy. Andre Carpathy wrote a blog in 2012. Now, who is he? He's a Canadian computer scientist. He served as the director of artificial intelligence and autopilot vision at Tesla. He still works for Tesla. He specializes in deep learning and computer vision. And this is a blog that he wrote in 2012.

[00:17:11.180] - Terrie

And I want you to take a look at this picture here, and I'll read what he writes as you look at the picture, and I'll read part of his blog underneath. He says, what would it take for a computer to understand this image as you or I do? I challenge you to think explicitly of all the pieces of knowledge that have to fall into place for it to make sense. Here is my short attempt. One you recognize it is an image of a bunch of people, and you understand they're in a hallway. You recognize that there are three mirrors in the scene. So some of the people are fake replicas from different viewpoints. I got a mirror here, a mirror here, and a mirror here. They're in a locker room. You can see they're in a locker room. You recognize Obama from the few pixels that make up his face. It helps that he's in a suit and that he's surrounded by other people with suits. You recognize that there's a person standing on a scale, even though the scale occupies only a very few white pixels that blend with the background. But you've used the person's pose and knowledge of how people interact with objects to figure it out.

[00:18:41.670] - Terrie

He's standing on something. He's got his arms up. You know what he's doing. You recognize that Obama has his foot position just slightly on top of the scale. Now notice the language. It's in terms of 3D structure in the scene, not the position of the leg in the 2D coordinate system of the image. We're seeing this as a 3D picture, even though it's a 2D. We know that there is movement happening in the scene. You know how physics works. Obama is leaning in on the scale, which is going to apply some force to it. The scale is going to measure the force that's applied on it. And the way it works is that it will overestimate the weight of the person on the scale. You figured that out just by looking at it. You know that the person measuring his weight is not aware of Obama doing this. You derive this because you know his pose. You understand that the field of view of a person is finite. He hasn't got eyes in the back of his head. You understand that he's not very likely to sense the slight push of Obama's foot.

[00:20:06.170] - Terrie

You can see the look on his face. You know that he's unaware. You understand that people are self-conscious about their weight. You also understand that he is reading off the scale measurement and that shortly the overestimated weight will confuse him because it will probably be much higher than what he expects. In other words, you reason about the implications of the events that are about to unfold seconds after this photo was taken, and especially about the thoughts and how they will develop inside people's heads. You also reason about what pieces of information are available to the people. You're seeing that there's people in the background, that they think it's funny, that there's humor. You have reasoned about the state of the mind of those people and their view of the state of mind of the person on the scale. Okay,

that's a lot to reason. And finally, the fact that the perpetrator is the President makes it maybe even a little bit more funny. You know that that is the President of the United States. You understand what actions are more or less likely to be undertaken by different people based on their status and identity.

[00:21:34.380] - Terrie

It wouldn't be as funny if it was somebody else. We look at this image and there is so much to take in. We have an intuitive knowledge of physics. Whether we studied it at school, liked it at school, did well at school, doesn't matter, you know about the weight going on that scale. You have an intuitive knowledge of biology. You know that the pictures in those frames are not real people. You know that there are legs behind legs, et cetera. You have an intuitive knowledge of weight, and you also have an intuitive knowledge of psychology, how important weight is to people, what he would be expecting to find on that scale, and people's reactions to it. And he's got a lot to say about this. He says, I could go on, but the point here is that you've used a huge amount of information in that half second when you look at the picture and laugh. And I just want to go down to his bottom comment here. Thinking about the complexity and scale of the problem further. A seemingly inescapable conclusion for me is that we may also need embodiment. And that the only way to build computers that can interpret scenes like we do is to allow them to get exposed to all the years of structured experience that we have. The ability to interact with the world and some magical active learning inference architecture that I can barely even imagine when I think backwards and about what it should be capable of.

[00:23:28.000] - Terrie

In 2012, this was a blog that he wrote, a scientist that's working with Tesla, and ten years later, nothing's changed. This blog was repeated in Melanie Mitchell's book in 2019, and it's still used today. He's a highly respected scientist. They're no closer to getting a computer to think the way that we do than they were in 2012. 2012 marks the beginning of the AI spring. This is when things really started to bloom, and we'll talk about that a bit more, but 2012 is an important date for AI. Any thoughts? Rachel?

[00:24:45.620] - Rachel

It was interesting, when I was looking at that picture, I started writing down some of the words that I was thinking that we have to understand what that picture was. And you end up reading some of it. But I think the experience thing really stood out for me. Having a lifetime of experiences, interactions, connections, and in context, all those things that we process within a blink of an eye, I could just see that in that picture that you showed. Having that experience is really fundamental to understanding the humor behind that picture and the connection. Yes, it was just really good to see that picture and analyze what we see.

[00:25:39.570] - Terrie

Here. We don't think about it, do we? We just looked at it and say, yeah, that's funny. But all the things that we took in to recognize it as being funny, it was so much in a second. How do you put that into a machine, that experience?

[00:26:00.760] - Rachel

You can't.

[00:26:05.880] - Terrie

No experience of humor and weight and physics and biology, psychology. You can't do that. Thank you, Rachel. Okay, so we're going to go back to Melanie Mitchell. She exposed four fallacies regarding AI and then what actually makes us intelligent. I want to go to another article. And this is from Quantum magazine. And we just read a couple of paragraphs from this because it's very telling. When was this written? I'll tell you in a minute when I scroll. 2021. The computer scientists training AI to think with analogies. Melanie Mitchell has worked on digital minds for decades. She says, they'll never truly be like ours until they can make analogies. Just read a couple of paragraphs here. The Pulitzer prize winning book *Gödel Eschelbach* inspired legions of computer scientists in 1979, but few were as inspired as Melanie Mitchell. Okay, so *Gödel Escherbach* was written by Douglas Hofstadter. Even though people have been studying AI and working on that since the 1950s, it was this book that really got people leaving their professions like Melanie Mitchell and wanting to understand artificial intelligence and also how the brain works.

[00:28:08.290] - Terrie

There was a time when artificial intelligence wasn't just about engineering. It was about cognitive science, psychology. All of those things were involved. And that's what's missing today. I'll just share something that he said. I'll write it down somewhere. Douglas Hofstadter has this quote. Melanie Mitchell quotes it all the time. He says, without concepts there can be no thought, and without analogies, there can be no concepts. What is a concept? A concept is something we conceived in our mind. It's a notion or it's an idea. And in this book, this is where he says, without concepts, there can be no thought. Without analogies, there can be no concepts. Analogies are the core of our intelligence. We'll go back to the article. The Pulitzer Prize winning book *in 1975 'Gödel, Escher, Bach'* inspired Mitchell. She was a high school math teacher in New York. She decided she needed to be in artificial intelligence. That's when she read the book. She soon tracked down the book's author, AI researcher Douglas Hofstadter, and talked to him into giving her an internship. She had only taken a handful of computer science courses at the time, but he seemed impressed with her *chutzpah* and unconcerned about her academic credentials.

[00:30:45.220] - Terrie

Mitchell prepared a "last minute" graduate school application and joined Hofstadter's new lab at the University of Michigan in Ann Arbor. The two spent the next six years collaborating closely on *copycat*, a computer program which, in the words of its co creators, was designed to discover insightful analogies and to do so in a psychologically realistic way. The analogies of *copycat* came up with were between simple patterns of letters akin to the analogies on standardized tests. If you were to sit an intelligence test, you'd have questions like, if the string ABC changes to the string A-B-D what does the string PQRS change to? You do those analysis tests when you have an intelligence test, and these were part of standardized tests in America as well. That's what they do for their school curriculum. Hofstadter and Mitchell believe that understanding the cognitive process of analogy how human beings make abstract connections between similar ideas, perceptions, and experiences would be crucial to unlocking humanlike

artificial intelligence. Mitchell maintains that analogy can go much deeper than exam style pattern making. It's understanding the essence of a situation by mapping it to another situation that is already understood.

[00:32:20.940] - Terrie

She said, if you tell me a story and I say, oh, the same thing happened to me, literally the same thing did not happen to me, that happened to you. But I can make a mapping that makes it seem very analogous. It's something that we humans do all the time without even realizing we're doing it. We're swimming in a sea of analogies constantly. As the Davis Professor of Complexity at the Santa Fe Institute, Mitchell has broadened her research beyond machine learning. She's currently leading SFI's Foundations of Intelligence in Natural and Artificial Systems Project, which will convene a series of interdisciplinary workshops over the next year examining how biological evolution, collective behavior like that of social insects, such as ants, and a physical body all contribute to intelligence. What contributes to intelligence? She says, biological evolution. But take note, collective behavior, being social and also having a body contributes to intelligence. But the role of analogy looms larger than ever in her work, especially in AI. Today's state of the art neural networks are very good at certain tasks, she said, but they're very bad at taking what they've learned in one kind of situation and transferring it to another.

[00:33:55.990] - Terrie

The essence of an analogy. It's just an introduction. She's going to go on and talk about it more in that article as they interview her. But notice we're swimming in the sea of analogies constantly. We don't realize that it's so much a part of how we think, how we read and understand. Rachel, did you have your hand up again? I didn't miss you.

[00:34:33.750] - Rachel

I think it was Brenden. Okay, Brenden.

[00:34:42.170] - Brenden

I had my hand up more for the previous photo with Obama in it.

[00:34:51.390] - Terrie

Do you want to make a comment?

[00:34:57.950] - Brenden

Oh, I've got to go back there. I can't remember what my comment was from back there.

[00:35:07.870] - Terrie

Do you want me to bring the photo up? Will that help?

[00:35:15.750] - Brenden

I think it was a continuation of what Rachel was saying, I guess. When you brought up the previous story from your experience, how the technology identified the pear, and then it identified your shopping trolley. For a piece of technology to look at that photo. And I guess at the moment, it would detect the pear. But behind that pear, there's a whole bunch of meaning and it's looking at Obama and pretend he's the pear. But there's a whole bunch of different meanings behind that pear. I just can't see how it can be possible. It can detect that something is there or something that isn't there, but it can't detect the emotions, the meanings, the story. It can't figure that out. That's the problem. And that's what this person is trying to make happen with these analogies. Is that right?

[00:36:38.030] - Terrie

Yes. After last week's presentation, Rachel contacted me, and we've chatted back and forth shortly. And you made the comment, Rachel, about humor, how much analogy is in humor. Which made me Google. I just Googled lame jokes. And you just saw analogy all the time. And of course it makes sense when you look at it. We do that all the time. It makes things funny. But at the same time, it also helps us to interact socially. It helps us to grow in our understanding and make better choices because we can transfer learning. A child can I think by the time they're one, they've got 60,000 images in their head. It's not enough to have the image in your head. You've got to transfer what you've learned about those images into your behavior as you develop and grow. By the time you get to our age, there's a lot that has been stored on file that is more than just an image of a pear or an onion. Thank you, Brenden, did you want to add anything else?

[00:38:03.390] - Brenden

No. I'm interested in how she continues. What she's trying to do. She's trying to derive meaning behind images with her analogies. It seems like an impossible task.

[00:38:26.550] - Terrie

It is. And as this scientist was saying, he did this ten years ago, 2022, they're no closer to it, and yet he's working on autonomous vehicles with vision technology. That the cars know that there's a car in front, et cetera, but it's just so limited because it might see somebody walking out on the street. But when we see that, we take in much more than the object. We can notice a lot of other things that are going on around that object. We take in more than we realize. It's so subconscious that we don't even think about it. And that's why we couldn't possibly think about it or we're burnt out as it is. Thinking about what we have to think about. The brain helps us to do things that are easy, otherwise we just wouldn't survive. It's amazing.

[00:39:41.710] - Brenden

I guess the limitations with what he's dealing with, is... we would see a whole in the fence and cows broken through the fence, even though they're not on the road. And AI wouldn't necessarily detect that as being a problem because it's on the side of the road. And as we would see that and take caution and slow down, knowing that there's no cows even breaking through yet, but we would sort like that's just one of a million different things, that we would just take caution and slow down. And yet how do you teach your computer to do that? How would you say that's a hazard, when it's not necessarily in your way?

[00:40:30.430] - Terrie

And the other thing that she brings in there is that idea of us being social creatures. A lot of our experience and learning is because we are among others and we take other people's. It's not just our experience, we look at other people's experience. You know that the farmer down the road had cows get out of his paddock and you knew what happened. That brings another level of understanding to when cows get out of your paddock or there's a hole in the fence and they might get out. She used a few photos in her book. One of them was a woman crossing a road and she had a stroller and she was pulling a dog and the dog had stopped to sniff at the post and your two car lengths back. And it's amazing what your brain takes in and how you're going to respond when you know what a dog will do once it's pulled. If it's pulled, it might go it just gives you an extra, you know that that dog pulling back could let go any minute and run across the road quickly because of experience, because of analogy, and that helps you to drive in a certain way.

[00:41:51.690] - Terrie

How do you get that experience into an autonomous vehicle? It just sees a dog pulling off to one way. It's not going to expect that the dog is going to go this way because the woman's pulling it. There's lots of millions and billions of examples like that. When you think about it. Rachel.

[00:42:17.710] - Rachel

Not to hold you up, but just more thoughts. When you're talking about your pear. Those computers can identify an object, but they don't know what it tastes like. They can identify a person crossing the road, but they don't understand that that person might have a walking sticker. They don't know how old they are. And I think one thing that keeps popping in my head is that these are predictions. I don't know if that is the right word, or if it is just analogies as well, I'm not too sure.

[00:42:52.030] - Terrie

Yes predictions.

[00:42:56.890] - Rachel

They can't predict what the cow is going to do. And that just all comes from experience.

[00:43:02.670] - Terrie

Yes. And these latest technological advances are actually built on making predictions, but they're based on mathematical equations and not on experience, so that they make mistakes. We might be able to get to that today. That's a really good point, Rachel. They can predict, they can get it very wrong. Advances in narrow intelligence are amazing. The. Supermarkets have got to do that. They must lose heaps of stuff through those checkouts. It would be easy to walk out with stuff, so that they've developed the technology. But that machine didn't know that I had taken extra bags in there just in case. And I didn't buy as many groceries as I thought, so the empty bags still in the trolley. But that's okay, we fixed it. It's going to be

extra work for the assistance. But with technology, you learn by mistakes. And they're continually fixing them. It's not making them smarter, it's humans programming them. There was an amazing story just this last couple of weeks. The University of Melbourne have now got technology, voice technology, that can determine if a person has Parkinson's disease. Doctors have been doing that for years, listening to how a person speaks.

[00:44:38.120] - Terrie

And now they've got AI that can do that, not only recognize what stage that Parkinson's at, diagnose it, but also work out how much medication that person would need according to the diagnosis. We're not bagging AI. It's been an amazing blessing, but there's a big downside. I read somewhere. Somebody said: *"it's not that AI is too smart and it might take over the world. It's that AI isn't smart enough and it has taken over the world."* What we want to look at is what isn't it smart at? That's taken over. Analogies. I've been thinking, I get distracted now every time I'm reading something. I see analogies everywhere. And even when we're talking about AI winters and AI springs, that's analogies. We can feel the winter, we can feel the spring and excitement and the new growth. We talk about COVID waves, the waves of the pandemic. There was another one we'll talk about tomorrow when we look at the article from The Washington Post that Elder Parminder put up on Originalism and the Constitution. It's amazing how much analogy is in that document. Okay, analogy and common sense. Common sense is simply the ability to exercise good, sound judgment in practical situations.

[00:46:36.600] - Terrie

Common sense is your own feeling. It's not common in the sense that other people agree. It's common in the sense that it feels completely ordinary and obvious to you. Does that make sense? Brenden, you've got your hand up again.

[00:47:03.260] - Brenden

Before you made that comment. This overall theme of analogies, isn't that just how the message operates? It's parable teaching. AI cannot identify analogies, it can't identify parable teaching? Or am I getting down a different path?

[00:47:37.420] - Terrie

No, that's exactly what we talked about last week. If you consider Christ object lessons and when Jesus taught in parables, he's really tapping into what is innately, makes us intelligent. It's no gimmick. There's science behind what he is doing. He's forcing us to compare situations because we're built to do that. That's part of how we are built and made up. We talked last week about Nicodemus and when Jesus said, unless a man be born again, he shall not see the kingdom of heaven. He was forcing Nicodemus to make an analogy. And you're either going to react one of two ways. You're going to reject it or you're going to see it. You'll see it with your mind's eye and you'll make an application. You'll see the similarities. Does that help Brenden?

[00:49:05.800] - Brenden

Yes. Thank you.

[00:49:10.520] - Terrie

Okay, so back to common sense. Why is it common? I just read the quote. What makes it common? Katherine.

[00:49:26.100] - Katherine

It seems common and obvious to you, but it's not necessarily what everyone else actually thinks the same as you. Is that what you meant?

[00:49:39.720] - Terrie

Yeah. It's not common because it applies to everyone. It's common because it's subconscious. It's so obvious and ordinary. You can't separate analogies and common sense. When Nicodemus rejected the analogy, he lost his common sense. We do you want us to get back in the womb? Would that be silly? They're very much connected. What is it that we are to be afraid of? 2022 is a huge year for AI. The spring started in 2012. And let's just look at a couple of things that have happened this year in artificial intelligence and see what the problems are. This is a New York Times article, and it is from, I think from September. Let me just check. Yes, August. We need to talk about how good AI is getting. We're in a golden age of progress in artificial intelligence. It's time to start taking its potential and risks seriously. What he's going to talk about here is Dall-E. Is everybody familiar with Dall-E? It is a text chat. Katherine?

[00:51:34.380] - Katherine

Yes, I am familiar with Dall-E.

[00:51:37.260] - Terrie

Okay. If you like to explain it to everybody.

[00:51:40.960] - Katherine

It's artificial intelligence that generates art. If you could type in keywords that you want the art to portray, you type that in, you might type the style of art that you'd like, and then the computer screen will generate a picture for you based on that, which is award winning art in some cases. It's been getting a lot of attention in the media, but the way it does that is based on big data. The computers have been memorizing pictures, millions of images. It's not really understanding what it's doing, but it uses mathematics and formulas to replicate what it's seen elsewhere with keywords. It's quite interesting.

[00:52:27.840] - Terrie

Kind of fun. Yes. Okay. Just picking up on your language. It memorizes. But I think you qualified that. What happens?

[00:52:45.620] - Katherine

It scanned millions or billions of images and it stored them on its drives.

[00:52:54.680] - Terrie

Human beings have uploaded millions and billions of images and all these pixels. This technology was introduced by OpenAI. Remember, OpenAI was bought by Google in 2014, and this technology was introduced in April. But it was invitation only, so you had to get on a waiting list to play around with this technology. This reporter from The New York Times got to use the technology for a weekend in August, and he had fun. He typed into DALL-E 2 the words "Infinite Joy", and outpopped this little alien, looking very happy and satisfied. This is what the computer drew out of its vast resources to create an image called "Infinite Joy". For the past few days, I've been playing around with Dall-E 2, an app developed by the San Francisco company OpenAI that turns text descriptions into hyperrealistic images. And he'll explain that he got to use it for the weekend. He'll explain how it works. He'll put up a couple of his images. I like this one here. He said, a sailboat knitted out of blue yarn, et cetera. And he's going to go on to explain how it works.

[00:54:30.920] - Terrie

But we want to jump another month, to September. A lot happens between August and September. And here is an article by the Washington Post. AI can now create any image in seconds, bringing wonder and danger. These are some images that this journalist created. None of these photos were taken by a camera. All of these images were created by the artificial intelligence text to image generator Dall-E. Named for Salvador Dali. He was an artist and Pixar's wally. Dall-E creates images based on prompts, such as a hobbit house designed by Zaha did. Zahadid is an Iraqi British architect, and if you're familiar with her work, it's very Zahadid, but it's also very hobbit. That's quite clever. Very Lord of the Rings. A woman in a red coat in New York Square looking up, et cetera, red and yellow peppers. Very lifelike images just given with a few text prompts. Since the research lab OpenAI debuted the latest version of Dall-E in April, the AI has dazzled the public, attracting digital artists, graphic designers, early adopters, and anyone in search of online distraction.

[00:56:08.140] - Terrie

The ability to create original, sometimes accurate, and occasionally inspired images for a many spur of the moment phrase like a conversational photoshop has startled even jaded Internet users with how quickly AI has progressed. Five months later, 1.5 million users are generating 2 million images a day. On Wednesday, OpenAI said it removed its waitlist for Dall-E, giving anyone immediate access. In September, it's all in. Anybody can use it. I think you have to pay, but it's not much. There is a small fee. It has triggered an explosion of text to image generators. And as Katherine said, it actually won a competition. The technology is spreading rapidly. So there isn't just Dall-E anymore. If you Google it, these text to image generators, you'll find articles where it says, top ten text to image generators. There's so many being put out by companies now. The problem is, and he'll go on to explain, once the line between truth and fake is eroded, everything will become fake. We will not be able to believe anything. That's one of the quotes you'll put in this article. There's just a few points I want to call out.

[00:57:43.120] - Terrie

Open AI has tried to balance its drive to be first and hype its AI developments without accelerating those dangers. To prevent Dall-E from being used to create disinformation. For example, OpenAI prohibits images of celebrities or politicians. OpenAI Chief Executive Sam Altman. So Sam Altman, Elon Musk and another man were the founders of OpenAI. Sam altman still in charge. They justified the decision to release Dall-E to the public as an essential step in developing the technology safely. You have to learn from contact with reality, Altman said. What users want to do with it, the way that it breaks. Basically what they've done, this is the argument happening in artificial intelligence at the moment. What parameters of protections are in place. A lot of these text to image generators have none. You've got this fight, this libertarian fight of, do we place filters on our equipment? Do we have protections or do we just let trust the public, give it to the public, and then when things go wrong, we'll fix it then. And so this is the argument, how do you regulate these things? And this is the same argument, if you're keeping an eye on what's happening with Twitter at the moment with Elon Musk. He's come in and he's bought that company because of the problem with managing disinformation.

[00:59:30.460] - Terrie

There's a name for it which isn't standing out to me. Brenden.

[00:59:39.400] - Brenden

You mentioned it anyway. I don't see any difference between managing digital art and managing speech in social media. And you mentioned Twitter. It isn't the same principle. In one sense, here they're trying to resolve making it safe in the digital art world so they don't create false images. And yet they haven't really done a very good job in managing the words over the past ten years. It's the same principle, they just need to focus on the words as well that have been spoken.

[01:00:26.660] - Terrie

Yes. We're following exactly, we're following the development of some of these AI technologies this year. But this is DALL-E 2. Eventually we'll discuss the new chat boxes. Text to language and when there's no constraints on that, what the possibilities are for disinformation.

[01:01:03.730] - Brenden

This just seems like it's like Pandora's box. Like this is out of control.

[01:01:17.110] - Terrie

We haven't seen it yet. We haven't really seen it yet. When they release something like this, like DALL-E 2 and the chatbox GPT-3, which we haven't discussed yet, that means that we're not hearing what's actually still being in development. Next year is going to be Dall-E 3. It'll be Chat box 4. What 2023 holds in AI is already in development, and people that have seen it have been wowed. They come away thinking it's magic. What we are seeing is almost prototypes, and we get wowed by the prototypes. But they say the next twelve months in AI is going to bring amazing improvements on what already has been

put out for public consumption. These are the things they've had to fix. You type lawyer into Dall-E too, and guess what you get. What have we got? What's our problem? Katherine.

[01:02:43.810] - Katherine

They're all men. Even white men.

[01:02:50.390] - Terrie

And if you type in airline stewards, they're actually all Asian females. This is the biases that are in these systems. And why are they there? Because of all the information that has been collected and uploaded. It's what is already in society. It doesn't have its own biases. All the biases, the sexism that is in society gets uploaded into these machines. You've got those sort of problems. Let me try to find a paragraph here. Oh, I like this one. A bowl of soup that looks like a monster knitted out of wool. You may have seen these. But there's lots of others, lots of other sites. I'm just looking for a particular paragraph. I think I've gone past it. That's annoying when it happens. You like the Avocado chair in an orange background. It's very clever. No, I must find this paragraph. Here we go. Got it. Each evolution of image technology has introduced potential harms alongside increased efficiency. Photoshop enabled precision editing and enhancement of Photos, but also served to distort body images, especially among girls, studies showed. More recently, advances in AI gave rise to deep fakes.

[01:05:00.980] - Terrie

Deep fakes were actually invented in 2017 and became huge and viral in 2018. I think it was like November 2017 was the first deep fake, and then 2018, it just took over. It's a broad term that covers any AI synthesized media, from doctored videos where one person's head has been placed on another person's body to surprisingly, lifelike photographs of people who don't exist. When deep fakes first emerge, experts warn that they could be deployed to undermine politics. But in the five years since, the technology has been primarily used to victimize women by creating deep fake pornography without their consent, said Daniel Citron, a law professor at the University of Virginia and author of the upcoming book *The Fight for Privacy*. Both deep fake and text to image generators are powered by a method of training AI called deep learning, which relies on artificial neural networks that mimic the neurons of the human brain. However, these newer image generators, which allow the user to create images they can describe in English or edit uploaded images, build on big strides in AI's ability to process the ways humans naturally speak and communicate, including work pioneered by Open AI.

[01:06:30.240] - Terrie

What's that saying? It's saying that all of these images are how we naturally communicate, how we interact with each other. How these images are tagged and uploaded, is taking all these natural biases that are in society and putting them into these machines. They were really worried at first, like the article said, how this would affect politics, but 95% of Deep Fakes are actually pornography. Now, there's a difference between Deep Fake and Dall-E. Deep Fakes have been around since 2017. It's Photoshopping. Taking a head, putting it on another body, et cetera. And you can kind of tell. But with this image generator, in the beginning, they did not allow people's faces to be used, especially for celebrities. But now it's open slaver. You can use anybody. Any name. The computer will pull that name out of its

memory, of its data bank and will create an image of that person with whatever instructions you give that machine. With Deep Fakes in 2018, what we saw was all this pornography that was surrounding Scarlett Johansson and all the male Mckismo was a Nicholas Cage.

[01:08:28.510] - Terrie

You had two celebrities that were used a lot in Deep Fakes, one pornography, one was all Action Man. This has taken that to another level. Because the clarity of the picture is just getting better and better. And you can put them in any situation. We see how this is affecting women in particular. All sorts of restrictions have been lifted and then there's this argument. The leaders of one particular generator, it's called Mid Journey, have said that there's a paternalistic approach of not trusting users. They say, we don't want to have checks and balances on our machine, we want to trust the users. And human nature being what it is, it's just used for the worst type of things. How does this happen? We haven't looked at the chat bot yet. But if AI is going to be running huge parts of our lives, and it already is everywhere. What are the implications, if most of the developers, the CEOs, the programmers, et cetera, how are we affected if majority of the people involved in AI are actually men? The startup founders, they're all men. How does that affect this technology?

[01:10:41.800] - Terrie

How does this technology go bad? Is the question we'll finish with. In 2018, there were a group of three journalists, three women, journalists from NPR. That's equivalent to our ABC. And they founded a startup company. Now, startup companies are companies that are in the first stages of operation. You've got an idea, you've got some technology behind you and now you need to get it funded. They started this startup company and they're looking for funding. What they're wanting to create is a type of virtual assistant. If you've heard of Siri, which is the Apple assistant. This is another assistant. But what they were aiming to do was have an assistant that would help librarians and museums and students to have more culturally reliable, machine ready data on women. That's the idea of this assistant. In 2018, they're researching and they spend the summer with Topcoder. Topcoder is a crowdsourcing company. Where do you get all the images, all the information to put on these machines? You go to crowdsourcing companies, there is data that is available for everyone.

[01:12:29.060] - Terrie

It's public data sources. That's what all the AI technologies use to create their inventions. To begin their technology. You've got to access these public data sources. What they found. If we look at one, for example. They went to Wikipedia. If you look there, it's a public data source. Connected with Wikipedia is also Wikidata. They went into that source, and what they found was that the majority of male terms in Wikipedia, the thing we use very, very often, all the male terms are associated with science, and female terms are associated with the arts. There was a clear distinction in Wikipedia on gender bias in wiki data, in particular. There's another public data set called Pantheon. Pantheon lists 70,000 biographies of famous people. If you want a biography on something you might google, you might go to Wikipedia, you might go to Pantheon. It's not one of the most well known ones, but for people at research, they are aware of Pantheon. So, 70,000 biographies. They filtered the females in public figure occupations going back to 3500 BC. And what they found the visualization in Pantheon.

[01:14:10.730] - Terrie

The images and the descriptions of the women in Pantheon illustrated that the major occupation for females in the past 5000 years is modeling and pornographic acting. And I'm not making this up. This is the data that they've pulled out of these public resources. There is another public resource that has since been taken down, and that was created by MIT. So, the Massachusetts Institute of technology, the number one technological technology university in the world. They began their own public database and they called it 80 million tiny images. That's the name, 80 million tiny images, because they were uploading 80 million tiny images. However, what they found was that, you see, everything gets tagged, you upload an image, it's got to have a description. When they went into all the descriptions of these women, they were either called whores or the C word. All sorts of names, platinum and blondes. With such a big problem, they couldn't fix it. They just scrapped the whole thing. Because to go back and untag those things or retag them was impossible. Understand it's not the researchers. Where the whole exercise went wrong was that they didn't have the ability to scan everything, to sift all the material.

[01:16:06.980] - Terrie

It all got uploaded without oversight. They couldn't filter or screen it enough. People with good intentions are uploading all this information, all this data that is on computers and books and encyclopedias for thousands of years. For however long you've got, information to be uploaded is so embedded with sexism that you cannot filter it into these data resources. All this data is what is being uploaded into these new AIs. It's not like it's being programmed purposely. We know that sexism is the longest, deepest, worst, most fundamental form of discrimination. That's the information that is out there. And if you transfer that information into the machines, you can't rid it of unless you go back through all that data and retag. And it's just impossible. MIT just gave up and scrapped it. The reason we have Dall-E. The reason we have a lot of these image generators, is because of the work of one particular woman. She's brilliant scientist, Fei-Fei Li. In 2014, they introduced this. It was an AI revolution.

[01:18:06.640] - Terrie

Sorry, not 2014. This is 2012. And this starts this AI spring. And she got the idea to build a giant visual resource. Because she said, if AI is going to get intelligent, it just needs to have data. It needs to have as much information uploaded into it. They set about doing that. I'm just trying to find the name of that. It's escaping me. ImageNet. That's what it's called, ImageNet. They wanted every object in the world uploaded to the computer. You can imagine what a task that is. They spent hours, days, months, couple of years doing it when they realized, I couldn't do it all. They outsourced it. There's this outsourcing company called Amazon Turk, and a lot of companies use it. Basically, you can be living in the world, anywhere across the world, and you get paid a pittance, but you get paid to do these very menial jobs, like upload data. They got 50,000 people across the world to upload all these objects onto the ImageNet. And then there were two people, a researcher and a journalist, who wanted to demonstrate the dangers of AI.

[01:19:51.750] - Terrie

And they invented this game, and it's called ImageNet Roulette. And it took off across the Internet. And what you did is you uploaded a selfie into ImageNet and you got ImageNet to categorize you. And the categories that came back were full of sexism. What they found. It wasn't just problematic, it was offensive, very offensive. And it was racist as well. But women were labeled everything from cheerleader, platinum blonde, to sluts. Slovenly women, trolley's, and slatins. I haven't heard the word Slatin in years. But these were what was tagged onto these images. So what they've had to do is called de-biasing. They've got to go back through all this material and de-bias it, which is a huge job. What's the problem with AI? One of the problems is, to make it effective, it's got to have tons of information, whether it's visual, whether it's language. Why AI is getting smarter is the computers are getting faster, and the amount of information going into them is increasing exponentially. Because they believe if we put more information into it, we make the computers faster, we've got an intelligent machine. The problem is, all that data has all those years of embedded sexism in it.

[01:21:39.390] - Terrie

There's two examples that you're probably familiar with. One is Google. They wanted to use artificial intelligence to employ people. You would send in your resumes and your CV's. And instead of having people go through them all. You can imagine, Google is a huge company. They get tens of thousands of applicants a year. Everybody wants to work for Google. Very hard to get you put in the door. They develop this artificial intelligence. The problem is, the artificial intelligence works on the data. And the data says most of the people that work for Google over all these years have been men. That when it went into the CV's and the resumes. If they saw anything that indicated the person was a woman, it got discarded. This was a Reuters article from 2018. Amazon scrapped secret AI recruiting tool that showed bias against women. This made the mainstream media as well. The machine learning specialists uncovered a big problem. Their new recruiting engine did not like women. And then it goes on to explain why. And they had to scrap that.

[01:23:12.930] - Terrie

I think they've got another one. De-bias. Everything has to be de-biased. The other one was in 2014. If you've ever seen Apple launch a product, it's a huge event. You might have seen Steve Jobs when he was alive. He'd be on the stage, big screens. In 2014, it's not Steve Jobs, it's one of the directors. Why is a tech magazine. Apple's upcoming health app is the start of something huge. Apple is reportedly poised to launch a health tracking app called Healthbook. That's fantastic news for all the app makers who have been struggling to get people to use fitness monitoring apps. Here's why. What it's going to do. It's going to monitor all your vital signs, your salt intake, everything, this amazing app that was going to be on your iPhone, on your watch. And what could possibly go wrong? This was launched 2014, and does anybody remember what did go wrong? It tracked your weight, your medical conditions, your high blood pressure, your diabetes, salt intake. What didn't it do? Does anybody remember? They copped a lot of flak over this.

[01:25:14.540] - Terrie

Half the population of the world has a menstrual cycle. Doesn't register at all on their health app. Everything else is there. They had to pull and they had to tweak, etc. But why wasn't it there? Were these

people just totally oblivious or what they're doing is they're working on the data. They go to these data sources and everything is innately embedded with sexism. And they've got to go back and de-bias these things. When we're talking about image to text generators and maybe next time we'll talk about the text to language generators. Which is the latest huge thing that's going to be a huge problem going into 2023, and coming up to the next election. The information that has been uploaded to create these programs is faulty from the beginning. It's amazing what they can do, but it's problematic. Brenden.

[01:26:45.380] - Brenden

So to be bias would be to try and bring a equality. I guess that's what that would mean. Is that what you agree with? You've got this battle between whoever is driving this AI technology, if they're prioritizing freedom over equality. Already, you can see whether it's a company or a government, you need big, big business, big employee base, big government to manage equality, to bring equality. If you're bringing freedom to cut costs, you wouldn't be worrying about de-bias anything. You've got this massive problem.

[01:27:49.240] - Terrie

It's the new frontier of the speech wars. It's raising it to another level. And this is all happening now over these new chat box. The text to image, that's fun, but none of us really wouldn't play around with that kind of thing. What we will look at next time is these language generators. And this is a game changer. And to de-bias something is a painstaking work. It's much easier just to upload everything. But if you've got to go back and retag. These algorithms set in. The machines aren't thinking, the machines don't have values, they're not biased, but those algorithms are set. And then you've got the arguments between the creators. Like Elon Musk and the discussion about content moderators. Let's sack all the content moderators and let's give everybody the freedom and the liberty to do what they please. And that's the fight that's going on between the creators at the moment. If you regulate, who's going to do the regulations? You're going to have people on the right that will say, we don't want anything that will aid a person to explore their own sexuality.

[01:29:31.300] - Terrie

We don't want anything like that. They're on the right wanting to regulate, regulate. And then you got on the left saying, no regulations. Freedom, freedom. And then in court, in the middle, it's just a mess. When we think of what we have to fear from AI are the two things that this movement has recognized. One sexism, two, disinformation. And that's what it'll be promoting. Especially as we go into 2023. What we've seen come out this year is, as marvelous as they are, they're prototypes to what's coming around the corner. They're already planning their big releases on the next language generators. What makes them better is just more data, more pictures, more images. What's coming out next year will apparently have 500 times more images. That's a lot when you think that there are hundreds of billions of images on there. Sorry, I should say hundreds of billions of words on these computers, and they're going to increase that by 500. That's a lot. Josephine.

[01:31:08.620] - Josephine

I was just thinking about the enormity, the scale of sexism that's been uploaded into these databases or the sources. And thinking about a message. And as we go towards the Sunday Law, it's quite scary. It's

not just spreading person to person, but it's through the Internet. It's so fast. The velocity in which it's traveling is huge.

[01:31:53.760] - Terrie

We need to understand parables, because parables are going to protect us. It will be our methodology as we prove if something is true or false. Our parable methodology is going to become more and more important. But also understand that fight is going out on in the world, too. We're not the only one saying, looking at analogies and recognizing what's intelligent or not. We're watching the fight in the world, and it is mirroring the fight within Adventism as well. The aim of this is to dispel what is not to be feared about artificial intelligence, to embrace what is not to be feared. But also to recognize the big problems that it is creating, especially if we're going into Sunday Law. The level of disinformation and the brilliance of it, we can be in awe. But at the same time, we have the tools. Brenden.

[01:33:26.870] - Brenden

Just with what you've just talked about over the past 20 minutes. The scale to de-bias the data that's being uploaded. How do you catch up now to de-bias? It's running away. How do you catch up? I don't understand. How do you content moderate that level of data? Isn't it now just perpetuating sexism? And it's built into the system and built into the algorithms? I don't see how that can be fixed. How many hours would it take to fix the bias in the levels you've just spoken about? My mind can't even comprehend what it would take to fix that problem. Therefore it would perpetuate. You can't fix that.

[01:34:39.990] - Terrie

You see articles on our new services about how there are efforts to take the sexism out of medicine. And there's so much artificial intelligence used, in good ways, to diagnose and treat, et cetera, but even all those things have been affected by the data that is uploaded into them. We could have the media broadcast or the TMW broadcast full of articles every day. If you're watching, and I'm sure you all are, and just looking at headlines, there's always these things popping up. And it's surprising how often artificial intelligence is behind them. The world is run by it today. So it can't help to be affected. It's not evil in of itself, but it's the information over thousands of years, and especially since the industrial age that has been uploaded. Information on women has been limited. There just hasn't. Nobody's bothered. We know that those studies have been done. Even it might not be negative information, it just might not be much information. Just like Wikipedia. There was an article. My mom sent it to me, I don't know, it was this year or last year, and it was a woman from Ballarat or Bendigo who spends every day she uploads a story of a woman to Wikipedia. Because it's really well known just how unbalanced Wikipedia is on the biographies of women.

[01:36:38.460] - Terrie

Very little about women scientists in any particular field. So she's doing her little bit to correct it and that made the news. These things shouldn't be a surprise to us. But then we have to sit back and recognize that that's all the data, whether it's Wiki data or Pantheon, that is being sourced and used for this AI. Especially if you use something like Amazon, Turks. 50,000 people from all over the world, their views on politics, on culture, on sex, they're going to affect how they're going to tag these things as they get

uploaded. But if you want to create something intelligent, you have to put as much information in as possible. I hope you feel inspired in the sense that how marvelous our brain is, that we don't have to be Philadelphia lawyers or rocket scientists. But we do need to understand parables. And if we can make analogies, then that is a sign of true intelligence. When we can reread that. When we can see those similarities and make applications, that's what we're being tested on. That's what Jesus was trying to do to the disciples, to the Jews in his time.

[01:38:10.310] - Terrie

And it divides. As God is using parables to try and align his people with Himself, it's going to divide. It's the work of the everlasting Gospel. We have an alignment problem. God's church has an alignment problem. The world has an alignment problem. We're just looking at external events. So, Brenden, anything else you wanted to add?

[01:38:45.490] - Brenden

No, thank you.

[01:38:48.610] - Terrie

Would you like to close in prayer?

[01:38:53.990] - Brenden

Sure. Hopefully it doesn't break up. If everyone could bow their heads.

[01:39:08.090] - Brenden

Dear God in heaven, we thank you for this Sabbath day. We thank you for the things we've learnt. Help us to get back to the basics with our methodology. Just the gratitude that we have, that we have learnt these things. Help us to review, to practice and to understand what we're experiencing, what we're seeing. Be with us all now as we rest. Please be with our leaders, especially at this time. We just thank you for all your blessings. We thank you for bringing us back in line with you. Help us with that work individually, and help us to be a good influence to those we come in contact with. Lord, we thank you in Jesus name. Amen.