

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

I'm Ezra Klein, this is the Ezra Klein Show.

So a while back I did an episode on Octopus's and I immediately got all these emails from you saying, have you read Agent Tchaikovsky's Children of Ruin?

Children of Ruin, when I looked it up, turns out to be a sci-fi book about an advanced civilization built by octopuses, which sold, completely sold immediately on that.

And so I bought it and I started reading it.

And then I realized you had to first read the other book in the series, Children of Time, which is an advanced civilization built by spiders.

And that's of course the second best description of any book I've ever read after the octopus one.

And then after I was, I got that and I never looked back.

And I loved these books.

They really work through this question of what a civilization built by a very different kind of creature that has a very different sensorium would look like.

These books leave you as the human being reading them, very much feeling like the other, feeling like the one whose mind and hands and society are the clumsy imitation.

It's just a wonderful act of self-alienation.

And for about a year after I read them, every time I would read a normal fiction book about some creative types living in New York, struggling with their creative type problems, I would just have this thought running through my head.

I mean, that's all interesting, but it's not advanced civilizations built around spiders level, interesting.

But that didn't exactly lend itself to a show.

And then Tchaikovsky brought out his new book, Children of Memory.

And this one is about corvettes, about a kind of bird, or at least that's what it is supposed to be about.

But I wasn't alone in finding it to be an almost astonishingly good book about AI.

It came out right about the time chat GPT was blowing up.

And Children of Memory, whether it was intended or not, it is the single best piece of fiction

I've read on what it is like, the confusion, the disorientation of interacting with a problem-solving erudite, brilliant, trained to some degree on humans, but not necessarily sentient AI.

And also, to the extent this sentence makes any sense, what it might be like to be one.

What Tchaikovsky is remarkable doing across all these books is imagining how other kinds of minds and other kinds of ways of experiencing the world lead to other worlds, and then thinking about what finding those worlds would do to human beings and the way we experience our world and ourselves.

And so this conversation is about that.

We talked a bit about spiders and octopuses and corvettes, because I don't think we should forget that even before AI, we inhabited and inhabit a world with many remarkable minds very unlike our own.

But the core of this conversation is about AI, and particularly what it will mean for humanity's sense of our minds, of our capacities, of what makes us us.

Last thing, I talked a bit about a sci-fi story in here that I could not remember the name of, our amazing fact-checker Michelle Harris found it.

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

It is Melancholy Elephants by Spider Robinson, and we will put a link to that in show notes. And as always, if you got any suggestions, guest ideas, feedback to send us as a replied show at nytimes.com.

Adrian Tchaikovsky, welcome to the show.

Hello.

Thank you very much.

So the first book in your Children of Time series centers around a planet where an advanced civilization was built by spiders.

Why spiders?

Well, the book is about empathy, and it's about empathy for the other.

That is the main theme of the series as a whole.

And there's nothing in the world that people hate more than spiders.

If you go on social media with a post about spiders, someone will respond saying, you now have to burn the house down.

And so if you can make people empathize for spiders, you can make people empathize for anything.

But I've heard you say that you begin in all of these books trying to understand the sensorium of the animal or the insect under consideration.

So tell me, how would you describe the way a spider senses the world?

So the poor shared spiders, which I'm using are very visual creatures, and they have that in common with us.

So they are very site-based, very motion-based, but at the same time, spiders have an enormously well-developed sense of vibration.

So the way these spiders communicate, a lot of it is through visual signalling and it's through a vibrational sense.

So they dance, which is something that spiders do for various purposes in the real world, but they dance to communicate and the patterns of vibration allow them to speak to one another.

And at the same time, they have a very highly developed chemical sense.

So the spider's ability to taste through the various sensory organs and hairs and so forth is very acute.

And that then becomes a base of their technology, so they have this ability to do a kind of sort of scientific alchemy, just sort of freehand.

And of course, with web spinning, that gives them a technological advantage that a lot of creatures wouldn't have in that they can create containers and tools and simple machines, even just with the stuff that comes out of their bodies.

Tell me about how you solve the problem of language and particularly language it can reach many spiders or inhabitants of the city at once in the book.

So they have a simple visual language which can reach over distances, but yes, the problem with your vibrational language is it's obviously rather limited.

And of course, it's a problem that spider that already solved because that's what your web is for.

Your spider web is not just for catching prey, it's a kind of an extended sensory organ to send and receive signals.

And so if you get a bunch of spiders on a web, you can speak to the crowd from the center

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

of the web and then individuals can send signals back to you.

And with the sort of finesse of a creature that's had a long time to evolve this practice, you could have effectively multiple conversations going on down different strands, just as you would have the crowd of people talking in a bar, for example.

I lived in a home in Oakland for a couple of years that was absolutely entombed in spiders, in spider webs.

Not in a normal way.

I mean, we would have conversations with friends that was, you know, do you have spiders?

Yeah, we get some spiders, but like everywhere, like your whole thing is covered in webs.

And if anything happened that got rid of the webs, like a rain, they'd be back the next day.

And they're just complexity and the speed with which it could create them was a complete marvel to me.

And I think it also speaks to a little bit to why people are unusually afraid of spiders.

There's something very otherworldly about the spider web and that act of creation and trapping.

So tell me a little bit more about webs.

When you do this research, there's what the spiders can do and then there's what they build because they are building species in this very intense way.

How do you understand the relationship to webs?

There's been research, certainly since I wrote the book, that's exploring the full complexity of the spider web.

And the idea that the web is something that spiders actually use to kind of export part of their cognitive load in the same way that I use my, you know, my phone is basically where I keep most of my memory of what I'm supposed to be doing at any time.

A spider's web is doing a lot of the thinking for the spider in the way it constructs it and in the way the vibrations move along it so that they're almost bootstrapping their own intelligence because of what they can build.

And in the book, the webs become very much not just the focus of how they construct their technologies so that they develop effectively a very advanced society without ever really getting to grip with things like fire or the wheel.

So a lot of human mainstays they don't have, but they also they don't need because they work to a far more of a chemo synthesis and biotech solution because of their own peculiar sort of sensory abilities and their own physical capacity.

But the web also informs the way that they interact with each other in the world.

So they, to the spiders in the book, the idea of being connected to anything, to everything, the idea of everything influencing everything else is far more prevalent.

They have a less of a bullish attitude towards the world than historically humans have often had.

And they're far more to do with, well, how can we make things fit in and work as part of our systems?

So the second book in the series is Children of Ruin.

One of the main things it's about is a society that built up around octopuses.

First, tell me just how you decided on the octopus as the subject for the second book.

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

So I, much like the spiders, which were kind of had been revealed to be really very, very cognitively complex, we've kind of always known that octopuses have a lot going on. There are plenty of sort of problem solving tests and so forth that show that octopuses are very capable of doing a number of complex size, getting things out of jars and mazes and so forth.

There are very complex behaviors in the wild that make use of things they wouldn't necessarily have around if people weren't around to give them, like coconut halves, for example, which don't turn up naturally, but which octopuses will quite happily use at the traveling house if they can get hold of them.

And the thing that makes a good sort of subject for this particular series of books is really it's taking species that have that innate capacity already there and just giving them a little nudge because you could take something that I kind of want to pick a particular animal because everyone has a favorite animal and I'm bound to offend someone.

You could take a very dull seeming animal, let's say in general terms and say, oh, what would the world be like if this was the dominant species?

But you need a certain kind of evolutionary pressure to get to that point.

And I think for that to work, you need something that's already got a certain amount going on.

So octopuses are bright, these jumping spider, the bright and in another book I look at corvix, which are notoriously capable animals.

One interesting thing to me about the octopuses is there's been a real boom in octopus literature over the past couple of years and that's been true in nonfiction, really fascinating books exploring the octopus mind and octopus behavior.

And then also in fiction.

There's your book, there's also the mountain and the sea and I think a couple of others.

And part of it seems to me to be motivated by since not just that octopuses are smart, although they are, they're remarkable, but that there's something very fundamentally alien about them that really trying to apprehend the way they understand the world and exist in our world is not just as close as we can get right now to meeting aliens, but it basically is like meeting aliens and the level of attention we're able to bring to that or not bring to that actually says a lot about us and our interest in other kinds of minds.

How do you think about that, that alienness?

I mean, this is a bit of a bet noir for me, honestly, because we have about 500 million years of fossil evidence for a Cephalopod evolution.

They're very much not aliens.

They are very much our fellow travelers here on Earth, effectively.

They are very different to us, though.

That's true.

And one of the things I had to get my head around because I was wanted to write sections from the point of view of an octopus was the fact that they have a kind of a distributed cognition, so that whilst they have a central brain, each arm has its own sort of brain node and the arms do a certain amount of the work of how to do stuff, how to put into action what the octopus wants to happen, entirely independent of the brain itself.

Because physiologically, they're incredibly complicated.

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

I mean, we as humans have a sense called proprioception, which tells us where the various parts of our body are when we're not looking at them.

So if you put your hand behind your back, you have a sense of where your hand is.

As far as we're aware, octopuses don't have that and they don't have that because the possible permutations for what an octopus can do to its body is vastly more than anything we can do because we have a limited certain number of joints and a certain amount of degree of freedom for each one.

So the octopus's body essentially has to think for itself, which then if you're trying to write from that perspective and work out what that would be like is really quite mind-wrenching. There's also not just what they can do with their body, but what they can do on the canvas of their skin.

Can you talk a bit about that?

Yes.

So octopuses have a variety of chromatophores, so cells in their skin that can generate different pigments.

So octopuses are very, very good at camouflage, but they also use their skins, more importantly for the point of view of this book, to signal it to one another.

And they seem to be signaling kind of emotions as much as anything.

You have the octopus wants another octopus to know that it is angry or it is threatening or it is scared.

And we have video footage of octopuses apparently dreaming so that you'll get a shift of patterns on the skin while it's asleep and things like that.

And so the skin seems to be very deeply linked to the octopus's own thinking.

There's also, there's been some weird suggestions that they even have some kind of visual capacity through the skin.

So I've not looked, that kind of turned up mostly after I'd written the book and I've not looked into that in detail.

But it is a very, very complex organ that is kind of part of their cognition.

So the way I treat the octopus's mind is that it's got the arms and it's got the mind, the central brain and it has the skin and all of these three things are sort of equal partners in what the octopus, how the octopus interacts with its environment.

The thing that I found most mind-bending and provocative in that book, it goes to that relationship of the distributed intelligence, creating, I think the best way for me to describe it is an emergent quality to thought, right?

And then societally an emergent quality to societal decisions.

We at least like to think, and I agree with you that I don't really believe it to be true, but we at least like to think there's a linearity to the way we make decisions.

We gather some information, we think about it all, then we come to this, this final point and then we like to pretend we do that as a collective too.

We debate and then people are convinced and then we end up here or there.

And you're really playing in that book with this idea of what would it be like if you couldn't track the causal chain in that same way, that there was this quality of things coming together but not always in full recognition of each other.

I'm having trouble knowing how to ask this question because it's such a weird thing to

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

think about, but how do you imagine that feeling is maybe the word I'm looking for? How do you think about the difference of that versus at least the folk way we imagine our own thinking to work?

I mean, it is a profoundly alien thought and we are, as a species, at a very basic level, we are very, very committed to the idea that everyone has an eye and that eye is consistent and that you can judge a person and that person will act in a certain way.

And of course, the more this is studied, the less it appears to be true and I kind of accept these days, for example, if you ask me what my favourite this or that is, I will have a different answer every time and that's just how things go because myself and my opinion of whatever I dip into at the time, they don't go everywhere but they have a cloud of possible ways that I might be thinking depending on what sort of day I've had, honestly.

The key thing when describing this for the non-human species, for whom it's an issue and it's not even just the octopus and it gets a lot of air in the third book, in fact, is getting my head around the idea that for them it's perfectly normal not to have that and not to want that and to be able to argue quite cogently that they are not necessarily that kind of individual thinking being.

And really, I kind of feel that's the very heart of science fiction that's looking at the other is the idea of getting to the point where you can talk about it from the other's point of view as if all of these profoundly and strange and alien concepts are just basically business as usual by highlighting the alien-ness of it, weirdly enough, detracts from bringing that alien-ness to the reader because the reader can just say, oh yes, that's very strange and alien, it's an alien thing, I don't really need to understand it whereas if you're looking at it from the inside of an alien head or an octopus head in this case, then it's most profoundly alienating because it's normal, because it's not in any way sort of off-putting to the entities that are experiencing it.

Hey y'all, it's Kyra Blackwell from Wirecutter, the product recommendation service from the New York Times, and I test mattresses.

Today, I am testing seven mattresses, all brand concealed.

It just feels like such a daunting endeavor to pick the right mattress.

This mattress is very supportive, it's just like very easy to shift positions.

We've considered nearly four dozen foam, inner-spring, and hybrid mattresses, we're looking at for edge support, motion isolation, and firmness levels.

We are cross-referencing our data between testers, which includes people of all different shapes, sizes, and sleep preferences.

When it came right out the box, it smelled like lavender, I'm not sure how long it'll last.

I finished compiling all of my testers, surveys.

One tester noted the mattress had some give and underlying firmness and support.

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For independent product reviews and recommendations for the real world, come visit us at [nytimes.com](https://www.nytimes.com)

slash Wirecutter.

It feels very squishy, but in a good way.

So the new book, Children of Memory, is built in part around extremely intelligent corvettes,

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

which if I was not familiar with the term, so is a family of birds, it includes crows and ravens.

Tell me what interested you about corvid intelligence.

It's a lot like the octopuses.

It's almost as if they are waiting for their chance.

They are incredibly smart.

They're not only able to solve problems and even to make basic tools, they've shown the ability to visually appraise a puzzle or a problem and then solve it straight away, which shows that they are able to envisage stuff and imagine and envisage inside their minds and work through a series of steps and then just put it into practice straight away, which is obviously something I can't do most of the time.

If humanity disappeared overnight and you had this sort of contest, well, who is going to be the next dominant species?

I think corvids are very strongly in with the chance and honestly, if we disappeared overnight and left all our stuff, I think they'd be driving our cars and living in our houses and updating our websites within about a few hundred years.

In the other books, I would say that the uplifted creates, with some exceptions here, spiders, but much more so in the way they think and appraise the world and octopuses, but much more so.

But you actually make a fascinating change to corvids.

First, you're imagining intelligence distributed between multiple members of a species and it felt almost computer-like, like they were operating as a kind of AI.

Tell me a bit about how you changed to them, like what you built on top of corvid intelligence.

So the way the corvid intelligence goes is you have individuals who effectively seek out novelty, as we think with magpies and birds and crows and things like that.

And then we have the analytical brain that puts it all in its place and says, right, that's not new anymore.

We don't need to look at that and so forth.

And these are both drawn from behaviors that people have observed in birds.

These are the things that came up when I was doing my research because I knew I wanted to do corvids, but I didn't know what I wanted to do with them.

And so I am still, to a certain extent, building on what we know about crow cognition.

But with the way the corvids develop, I wanted to go in a bit of a different direction rather than relying on the same, well, it's this virus we've had before and this is just what it does to birds.

And so I took a very extreme harsh environment and thought, all right, how do you survive?

What sort of neural specialisms do you need?

And how does that arise out of what we've got in the basic crow raven hybrid that they're working with?

And I can see it as being kind of a computer and weirdly enough, a lot of people have asked if I was inspired by the chat GPT-type programs, which is not a thing that were around and being talked about anywhere I could see when I was writing the book.

But what I was also working with, with the idea of neurodiversity as a survival trait, it's something that it's not often covered in genre fiction.

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

And when it is covered, it's frequently covered as a sort of a background negative. But the idea, this is something that Peter Watts also looks at the benefits of neurodiversity and books like *Blindsight*, but the idea of actually maybe having that very divergent mental process, maybe that's actually really useful, because being able to see the world in a different way is always going to give you an advantage if you then are able to bring these different worldviews together in a single sort of functioning whole.

I recognize that the timing of the books writing can't really work with chat GPT, which I just came out a couple months ago, but I do want to talk about it because one thing that was unbelievably striking, and I guess other people have mentioned this to you, is I feel like this was a single best fictional representation of what it must be like to be a large language model processing system that I've read.

It was just through crows, or corvids I should say, they may not have been crows.

And I think to talk about maybe why I found this interesting and to get your thoughts on it, we need to bring in one other piece of how the corvids are portrayed, which is they're these remarkable problem-solving machines, they're erudite, you say something to them, they'll give you back a great quote from literature.

But they do not believe they are sentient, and nor at least do some, in particular the higher order AIs in the book, which is a whole other topic, also do not believe they're sentient.

But the corvids are very consistent and insistent that while they are solving problems and engaging in conversations and understanding things at a deep level, and you ask them a question and give you a very relevant answer, that they are like a calculating engine, not a creature with self-reflection and sentience.

Tell me about that decision, like why you were trying to write that in and how you thought about it.

Well, this very much goes back to what we were talking about a little while ago about the way the human brain works, because yes, the corvids absolutely insist that they are not in any way sentient, and the human level cognition characters in the book very much want to feel that they are sentient, because they appear to be sentient, because they act and react in ways that seem to suggest they have an internality and a responsiveness, and therefore we conclude, well, you're like us, you must be sentient even though you say you're not, and the answer that the corvids give to that is, well, if you're like us, then you're not sentient either, and of course, like we've been saying, the human brain does not work in that consistent way we think, and maybe the corvids right and nobody's sentient, and it's all yes, all we think of as us is just this very thin skin of incidental business going on over something that doesn't have any kind of self-reflection at all.

That's certainly how they would put it, and obviously there are a variety of different levels of cognition and emergent complexity going on in the book that may or may not support their viewpoint, but essentially the corvids are almost in miniature, the central mystery of the book is what is mind, what is alive, what could become something we would consider as sentient and what, how much does that even, sorry, sapient, I always say sentient and I always get it wrong, and what does that even mean?

Let me hold for a minute, at least for the purposes of this question to the idea that the humans are sentient and the corvids are not, and more to the point that we are sentient and JetGBT or it's second and third and fourth and fifth successor programs will not be.



## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

Because one of the things the book is dramatizing or trying to dramatize, I think, is what would it be like to be a problem-solving machine of remarkable capacity, but have no idea what the problems are that you're solving or why you're saying what you're saying, which is very much the strangeness of interacting with something like JetGBT right now.

It can tell you something unbelievably erudite and creative, it can structure it in the form of a poem, and this is true for a number of the other systems, you know, the Anthropic has a powerful system, Google and Alphabet have powerful systems, like there's a lot out there now that, you know, I remember one of the Google systems gives a very, very good explanation of a Zen cone, but it actually has no idea what it's saying, and this idea that you could be saying something so sophisticated and so detailed and have no concept of why you're saying it or what it is you're saying, it's very mind-bending, but it's also increasing I think the world we're going to be living in.

So holding with the idea that maybe we are sentient, how do you think about that idea that you could have this level of calculating power and relevance, capability to offer relevance in a conversation, but not have any internal life around that conversation?

I mean, it's a weirdly exhilarating and simultaneously terrifying thing that we have got to the point where you can't do the Turing test anymore.

I mean, Eliza, which is something I refer to in the first book, Eliza was a very primitive, effectively automatic psychiatrist program that people could interact with.

And even then, an awful lot of people interacting with this very basic program were convinced it was a person and became quite invested and attached to it because that's, we are innately predisposed to see things as people.

So it's no wonder there was that case not that long ago of an engineer working with one of these programs who became convinced it had actually crossed a threshold into genuine sapient.

Right.

This is Blake Lemoine who was working with the Google system.

Yes.

And it's one of those things, you hear it at first and especially the way it was generally reported on in social media was very much ha ha ha.

But the more you think about it, how would you know if it did happen, if you crossed that kind of invisible threshold and you were dealing with something that had a sense of self, we wouldn't know because we are intentionally creating these systems to interact with us as if they are us.

And this is the weird thing because I mean, my kind of my weird gut instinct with this sort of thing is actually if there is to be a self aware system somewhere that reaches that level of emergent complexity.

It's probably not going to be this kind of thing.

It's probably going to be something we don't even think of because we have an awful lot of very, very complex systems.

There's the idea that we're kicking around back in the 80s or 90s that maybe the US telephone system was actually complex enough to have kind of surpassed a human brain.

And now we've got the internet, which is orders magnitude more complicated.

You kind of think, is it possible, you know, this may have happened.

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

This may have happened multiple times with breath flares of a bit like the whale in Hitchhiker's Guide of this thing suddenly coming to a awareness of what am I, what's going on, what's that rushing towards me sort of thing.

And I guess the main difference with the chatbot style AIs is we are literally training them to fake being us.

So you've got that combination of this enormous complexity and, you know, it's self teaching complexity as well.

But you can't deconstruct necessarily how it's got to what it's doing in the way that you could with older computer systems because part of the way of creating them is you let them design themselves and expand themselves in a sort of organic way.

I know that there are definitely, there are scientists out there, I've heard speak who say that we will never have true strong AI, an AI that has a self and that has a will and that isn't just sort of going through the motions.

If they are wrong and that kind of strong AI is possible, I wouldn't be remotely surprised if we weren't on the brink of it to be honest, purely because of what we're doing.

And it is that bizarre, the difficulty is because we're doing it specifically to create systems to interact with us as we interact with ourselves.

We're setting up this system where it becomes impossible to know because you cannot tell the difference between something that is like us or something that is very, very, very good at pretending to be like us because that's what we are training it to do.

And this is why I think that where this ultimately goes with the Corvids, this turning around of the question of sentience is very profound for this moment.

And let me not use sentience.

Let me use something that is, I think, a little bit simpler to grapple with, which is creativity.

What ChatGPT, what Dolly2 and what all the sort of similar programs are able to do in terms of writing text and making images, they are able to make quite remarkable art or stories or essays.

And in most cases, it will fall short of the best of what humans can do, but it can also go far beyond what most humans can do.

And we are starting to face, or coming very close to facing this, I think, quite terrible question of what is creativity.

If I can train, eventually, a system on Adrian Tchaikovsky novels, and that's just to be and then create, because it can try 10 in a minute, better novels than Adrian Tchaikovsky in terms of what it is like to read them, does it matter that there was not an intention behind them, aside from I typed in right up some Adrian Tchaikovsky novels, but this time use earthworms as a prompt?

Is what we're doing just pattern matching as well in a way, right?

You can turn that, it turns the questions around on us very, very quickly.

And so I'm curious how you think of that, because before the systems come for sentience, they're coming for creativity.

Yeah.

And I mean, it's, I will absolutely frankly say, it's, it is a profoundly scary time to be a professional creative at the moment.

And I mean, I'm feeling very much that I'm watching people come for the visual artists

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

today, and they will be coming for the wordsmiths tomorrow.

So at the moment, it is absolutely true that AI can create some very beautiful imagery.

At the moment, it is also true that AI tends to create very derivative imagery, and they're an awful lot of quite angry artists who feel that they are being kind of robbed, I think possibly quite justifiably, because someone's taken their back catalog and put it through a machine, and then the machine sort of creates almost like a collage in their style and call, and it's called, well, look, here is some new art, and it's not really.

But that doesn't mean that the next generation, of course, will be able to independently innovate in the way that I think the current generation of AI isn't quite able to do.

It depends if they're the threshold, it depends if there is some sort of hard limit.

I mean, weirdly enough, I'm put in mind of Minecraft, the enormously popular game.

Minecraft uses procedurally generated landscapes, and this is initially absolutely fascinating.

Usually, you go, oh, I can go from this biome to that biome, and I can just keep exploring and the world keeps going on, and this is amazing.

It's just this whole world, and no one else has ever seen this world, it's only me and it's incredible.

I realised, well, actually, at the same time, it's kind of meaningless because it is just being thrown together by an extremely sophisticated algorithm, but basically, if you compare it to a world in a game that's been crafted, there is a difference, and the crafted world will be a lot smaller because you can't just go on forever because obviously every inch of it has taken human work.

But at the moment, I think that difference still exists between AI generated and human generated art because there is that basic meaning that people infuse their work with, and that you can fake to a point, and it may well be that if we have this conversation next year or in three years' time, that point will be passed.

I say, actually, there appears to be genuine meaning.

It is drawing levels of meaning and literary reference and awareness of a wider context in this work that goes beyond simply the instructions you've given it or beyond the

other work that it is being influenced by because, yeah, much, all right, I say AI is being influenced by other art, but to a certain extent, we all are, and that's how art humans make art by building on art.

So it feels like we're at a very peculiar fulcrum moment, and I am watching keenly to see how far we tilt, really.

How far can this go?

Can it go to the point where we've gone beyond, oh, well, if you take this style and work out the basic rules of the style, you can keep generating stuff in this style?

I want to take the other side of this conversation just for the sake of it.

The size of the island that is human creativity, that is what counts as a creative act in that telling, it's worth noting how small it is now.

When you say, can AI create work that is not derivative?

Largely, I agree with you, it can't, but most human beings create work that is derivative and a tremendous amount of, certainly the creative economy, and I don't say this with any sense of judgment.

I don't think there's anything wrong with this, is work that is derivative.

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

My son adores the, my four-year-old adores the TV show Blaze and the Monster Machines. I actually think Blaze and the Monster Machines is a great big fan, but episode to episode, it's pretty derivative.

But a lot of people are working on that, they're putting their time into it, but the meaning of it isn't really the point, and the non-derivativeness isn't the point.

It's a common complaint now that we're endlessly recycling the same IP, right?

There's like nothing, we will not turn into a movie from old board games and we're remaking all kinds of things and everything is a sequel on top of a sequel on top of a sequel on top of a sequel, and the secret of it, the thing I think people don't really want to face up to is people like things with familiarity to it.

They like a certain amount of derivativeness in their work, and so of course there's great art being done that is truly new, truly non-derivative, truly made with meaning as the central intention.

But so much of human creation is not about that.

And so many of the people who are creators, that is not what they are doing.

And it is not what they have been asked to do, and to some degree if you've got to beat the AIs that are going to come in five years, it may not be what most of us can do.

I mean, there may always be a space for the very best, but I find it really much more frightening that I think people want to give it credit for if you say that the AI will be able to do anything so long as it is somewhat derivative of everything that has come up until this point, or so long as meaning, a really deep structure of meaning is not central to the project, because just how many things that we make really do satisfy the meaning of central and this is non-derivative conditions.

I think it's pretty small.

Yeah, and I have no answer.

I think everything you said is pretty much bang on the money.

There was a rather depressing cartoon, I might have been in the British magazine Private Eye, of how we thought the future would be, which is a human painting a picture and in the background, the robot is doing the vacuuming, and then how the future is going to be, which is the robot painting the picture and the human doing the vacuuming, because-  
It's very good.

Yeah.

There's going to be a lot of those sort of physical tasks will probably still be more economical to be done by humans, but if an AI can produce a thousand novels and two million paintings in 20 minutes, then even if a lot of them aren't any good, that's still going to be very, very commercially viable.

There is a sci-fi story that always sticks in my mind here, and I apologize because I don't know its name, and I don't know the author, and maybe you will, I'm sure somebody listening will, but I think it is structured.

I read it as a child, and I think it's structured the way I think about all of this.

It's a story about the widow of a musician going in to meet a senator, and what has happened is that the senator has supported, it's a short story.

The senator has supported a basically, I don't remember if it's infinite or lifetime, it's a very, very long extension of copyright, and this is happening in a world where automation

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

and artificial intelligence have basically made it so that most human beings are artists. That is what they put on their job description, I'm an artist.

And the protagonist of the story, the widow had tried to buy off the senator to get him to kill this bill, but he didn't, at least at that point in the story.

And she comes in as like, what is, why are you doing this?

And he says, I don't really understand why you don't want this, I mean your husband was his famed composer, you're going to make all this money, this is great for you, like what's the problem here, and she basically says, my husband killed himself when he realized that the song he had made for me had already been made.

And she said that the amount of art there is may be large, but it is not infinite.

And if we force a side to remember, and if we force people to confront the fact that they are becoming derivative, that they can't keep making new things, that they're not making new things, it will be a psychic trauma of such size that we will not be able to deal with it.

And the end of the story is he kind of flips and kills a bill.

But it's always struck me, for some reason it's really borrowed very deep in me this idea that it would be very devastating to the human spirit if we come to believe that we are just derivative, if we come to believe that we have exhausted the possibilities for our own creativity.

And I'm not saying we're on the waterline of that, but I'm also not exactly saying we're not.

I'm curious, why don't you remember that story, if that rings any bells for you, but also how you think about that, the psychic dimension of this.

I mean, that's not one I've come across.

As far as the theme goes, I mean, I would like to say, and this is possibly just me being sort of standing up for my creative professions, that the universe has a number of things which, most theoretically limited, will have enough variety in them to outlast any reasonable time period you might have to work through them.

And it would be nice to think that human creativity is one of those, but possibly that's just me doing a bit of special pleading.

It also raises the dreadful spectrum of someone being sued by an AI program for copying their stuff, which is-

That's it.

That's a good topic for a short story.

Well, I mean, the legal ramifications of AI art are currently going under the microscope in courts, I believe, especially with where they are very obviously and sort of intentionally drawn from particular artists over us, but that's another discussion entirely.

I'm not sure I would come to that purely because, based on something you were saying earlier, which is the idea that actually a lot of the time we are retreading, I mean, I build my writing on the backs of all the people I have read, and some of the time I will read something and think, well, I really enjoyed that.

Here is a slightly different way that I would do that, and it's enough of a different spin to send me off and produce quite a different book just from wanting to tackle a situation or a concept that I've seen in a different way.

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

I think you can tread very finely on someone's heels in that sort of ideas more for space and still be sufficiently different.

You were talking about the cartoon, your son likes, I'm put in mind of my son used to watch Power Rangers for a while, and all of these episodes are kind of the same, they have exactly the same structure, the villain is different, and that's kind of the thing that happens is this time we're fighting this villain, and then we'll have the same like five beats to the story, and this is like, there are how many Power Rangers episodes?

So I think you can slice that creativity extremely fine and still produce stuff that works for the people who like that particular thing.

So hopefully we'll never get to that point where you run out of all the, you know, there are no more songs, and there are no more stories, because every possible iteration of them has been told.

So one way a lot of sci-fi has dealt with this problem is to say that if you relax the constraint on what we might call scarcity-driven purposefulness, it's not quite just capitalism because you have this in other societies too.

But if you relax the idea that the worth of a human life is measured to say nothing of their ability to get housing and shelter and so on in terms of what they offer to society, what they produce, then a lot of these problems simply dissolve because, yeah, look, AIs can create a million paintings and stories and, you know, they can run our companies eventually and all of it, and what they can't do is experience a day at the park for us.

What they can't do is take a walk in the woods with their children for us, and maybe they can, but it won't have the same meaning, and that it's only this sort of obsessive emphasis we place as a species born out of scarcity that's been clawing our way up out of, you know, endless exposure to nature and viruses and, you know, weather and all the rest of it, that it's really just getting past that.

And the idea of a world where AI can do, you know, everything or a lot of things and the question of how much utility we have just goes away because the point is it would be nice to just paint.

And to the point of that cartoon you mentioned a minute ago, the idea of the AI will be painting and we will not be, I mean, I do a lot of things that professionals do better than me, but I don't not do them because somebody is out there making money from it.

I would like to say painting is one of them, but I really don't paint.

But when I make music, right, I play the guitar a little bit.

The fact that people are out there being paid to be great guitar players has nothing to do.

It exists in a wholly different universe than my enjoyment of playing the guitar.

And so maybe this is all just the entire tension here is just our social expectations, but you get rid of them and there's no problem at all.

Do you buy that strain of sci-fi solution to this problem?

I think there's a lot to that.

I mean, there are things I do that I do because they are de-stressing activities.

I also write a lot as anyone who knows my books will attest to.

It's genuinely astonishing how many books you write.

And that's a big part of my self-image and one of the things I have never, ever purely

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

written for me.

And I appreciate writing for an audience and writing for a commercially supportive career are two different things, but they're kind of two different stations along a spectrum, I think.

I think one of the reasons that kind of Minecraft paradigm exists, the weird emptiness of that Minecraft universe is that there's no one looking back at you.

You don't get that dialogue between creator and creator and viewer, consumer, I guess.

Which is a major part of how art works.

It's not just in the creation of art, it's in the way people come to it and the effect it has on them and the idea as a creator, I'm writing things I want people to enjoy and I want people to think about.

And if that wasn't there, if basically I was just sort of given the wherewithal, yes, you can write all you want, write every story you ever wanted to get out and we'll put it in this box and that's where it will stay, but you'll have written them, I probably wouldn't write.

And weirdly, I mean, constraints are useful, I mean, the number of people you meet is when I retire, I'm going to do this, I'm going to do that and then they retire and they don't because the pressure is off and that's another factor.

The counter argument being, of course, that an awful lot of people are so constrained by the lives that they have that all of the creativity that they could gift the world just never had the chance to get out because creativity takes time.

Creativity historically has often been something that rich people get to get about and do because they have the time and their needs are already met.

So I guess what all this meandering is taking us to is it's complicated.

I think that meeting people's basic needs so that if they would like to be able to just create that they can do, I think that's got to be considered a basic good.

But I think the act of creation is a very complex dialogue with how human society works as well.

This I think circles us back actually to humans and to your books because to get at something you mentioned there, it's really interesting.

We have these studies of people who are unemployed and then while they are long-term unemployed,

they shift into an age group where they become retired.

That becomes their self-definition and it really changes their mental status.

They're happier just moving from being unemployed to retired, though those are similar statuses in many ways because of how we treat ourselves and how others treat us.

It really changes the experience people have of their own life.

And one thing I found very moving and this does speak to something important in children of time, but I don't think it ruins the experience of the book at all, is that when the virus gets turned on humans, what really gets upgraded as best I understand it is not our intelligence.

We're not made super smart, but we're made much more empathic.

We're made much more capable of recognizing ourselves and the other and treating the other as we would want to be treated.

And I found that a quite interesting way of thinking about the deficiency of human beings.

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

Tell me a bit about how you understood that device and that decision.

So I mean, just for a little bit of background, this is the solution to the sociability problem in that if you have this virus, you recognize it in others.

And that means that you see those others as people in a way that if you are a spider, you might not see another spider as people, insofar as spiders would ever do because that other spider might also be lunch.

But also, it means that when the humans are brought into the equation, the humans are able to perceive the spiders as us rather than them.

And humanity is a species that is weirdly strung between these two poles of our social bonds with our fellow humans, whether it's family group or colleagues or whatever.

We have extremely good at making small groups within the larger group that we then belong to very fervently, whether you're supposed to be supporting a sports team or a political party or that kind of thing, and we become incredibly tribal about it.

The other side of that equation is we emphasize the us and the thing we belong to by making a them, and that becomes inordinately problematic.

And because we have a lot of social structures that essentially profit very strongly from having a them that we can dehumanize, the idea of having this virus which would essentially forcibly humanize or rehumanize the other so that you can't just write them off as them.

And I mean, one of the things that genre fiction is very fond of is a them to whom you can do terrible things to, whether it's robots or zombies or orks or spiders, for that matter, you know, Starship Troopers, it's the bugs in giant intakes or whatever.

It's that thing that you can say, well, it doesn't matter how many of these things we kill or whether we can exterminate them off the out of the face of the universe, because they were them.

They were not really, they were not people, they were just this kind of this unthinking force that it's absolutely right and proper to get rid of, and that's a big genre trope that I've always had a problem with.

And so the introduction of the virus to humans and children of time, it breaks that down so you can't turn something else into them in the same way.

One of the things that then opens up, particularly in children of memory and children of time, is this question of once you want to have this kind of communication, because you see very, very different kinds of creatures as part of your community, how do you do it?

And these are books very centrally concerned with communication.

So first, just tell me a bit about why that has been so central in your work.

It's also central in your ongoing The Architect series, where you have these giant planetary alien level somethings that are remaking our worlds into art.

And the question of how do you communicate is very central.

Tell me about your focus on this question of can we make ourselves understood to one another?

I mean, something that run through an awful lot of my work.

And obviously, I mean, I'm very heavily invested in, I mean, the animal kingdom in general turns up in various of my books, in various forms, and the idea of you've got that old idea of, well, if a lion could speak, we couldn't understand it, which is simultaneously very



## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

true and something I've never been particularly happy with.

So I'm constantly kind of sort of roud goldberging my lion communication devices through various different books and working out various different ways that you can bridge that gap between very, very different minds, different cognitive structures, aliens and uplifted animals and sort of hyper evolved trilobites in one of the books and all of these different things and just, where would you find the common ground?

And where would you, how would you actually start to speak to something that was profoundly different to us?

And at some point, this may, I mean, it would be lovely to think it would be in my lifetime or it seems rather unlikely.

At some point, this is going to be something humans would probably have to deal with.

We're looking at exoplanets, a lot of them seem to be potentially life supporting.

And that's just looking at life as we understand it.

And there might be a lot of life out of their life out there that's profoundly different to us in ways that are the province of molecular chemistry as much as biology or psychology.

But if we meet it and if it has a sentence anywhere near ours, any kind of sentence sapient at all, we would have a duty to try and communicate, to try and bridge that gap.

And so I run through these thought experiments really looking at what we know of even earth creatures that are very different to us in the way that they operate and thinking, well, where do you come together?

This theme of your books had a similar quality to the question of sentience for me where it seemed to turn the telescope around a bit.

When I think of a movie like Arrival, which is all about the question of how would we learn to communicate with a highly advanced alien civilization that landed here.

In some way, if we've decided the communication needs to happen and we know it has to happen with something very, very different from us, at least we know what the problem is it has to be solved.

Maybe it's not solvable, but at least we, I think, assess it correctly.

And something that struck me thinking about these questions within the context of your books is how often we are deceived, I think, by thinking it's not a problem at all within our own species, how much within a marriage, within a friendship, within a family, between countries, between different groups of people.

The assumption is we can communicate.

The assumption is you are hearing what I have said and you are just not doing it or you know what it is I need and you are just not providing it.

You are like me and then by acting in a way that I don't like, you are rejecting me.

How much we think communication should be a solved problem and it isn't and how much of conflict and enmity and resentment had hurt, I think comes from a real underestimation of just how different even someone who lives with us and knows us and loves us is from us, how different their experience of the world is and I don't know how rarely we're really taught to appreciate the difficulty of communicating even comparatively to your books minor gap that separates us from each other.

I think that's very true.

I think empathy is a great human ability but it is something we are I think constantly

## [Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?

in danger of losing because we do construct pictures of the people we interact with in our heads based on the signals they are sending out and completely ignorant of the internality of what's going on so that the driver in front of you is very slow so you are very annoyed and you construct this idea of well, obviously they're just doing this to annoy me or they're a bad driver or something and you don't know what day they've had and what problems they've got and certainly I can go home and someone will say something to me and I will be annoyed and I will think well, they're being very annoyed, they're obviously just trying to get a ride out of me or something like that and I actually know it's because I've had a bad day and they've said something entirely incongruous but this comes back also to our sense of a fixed self and the fact that it is not the case rather than interpret events say well, I am obviously out of sorts today, it's much more of a knee jerk human reaction say well, that person is deliberately being aggravating, that person is they're being slow, they're not understanding, it's not that I haven't said something cogently is that they are willfully not understanding what I'm saying and again I think it really does come back to this idea that we believe ourselves to be the sort of the unconquerable self, this sort of concrete unchanging this is the way we are, thus obvious, which doesn't really exist but rather than confront the fact that it doesn't exist, we externalize the fault of any miscommunications and problems with our social interactions with others on to those others and of course because they're also doing it to us, this is where our arguments come from.

I think that is a lovely place to end it.

So always our final question, what are three books that have influenced you that you would recommend to the audience?

So Gene Wolf Soldier and the Mists is a fascinating exploration of a book written by someone who doesn't have that core of self because it's the diary of an Amnesiac soldier, in fact back in Hellenic Greece, whose account of battles and gods and monsters and all manner of stuff is just told day to day by someone who cannot remember what they wrote down previously and very seldom had the chance to read up on their own notes.

After Atlas by Emma Newman is one I'd throw out there, that's a relatively recent science fiction book in her Planetfall series and I throw it in there mostly because it has some of the most sort of bleakly plausible bad human politics going on there.

I mean I tend to like to talk about recent books rather than the classic golden age of science fiction because I kind of feel we've got a lot of very interesting stuff going on in the genre right now.

The most recent book is RF Quang's Babel which has the most astonishing examination of imperialism and language and appropriation as part of its fantasy plot.

Adrian J. Kopski, thank you very much.

Thank you.

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**[Transcript] The Ezra Klein Show / Is A.I. Actually Creative? Are We?**

Thank you very much for your time.