Future Visions with Kim Stanley Robinson

[Opening theme music with voiceover.]

Kim Stanley Robinson

"I think it might be true that it's a thousand to one and the AI responses when you ask them "Well, tell us a story about what you want and what you're going to do." Then, the AI goes out and looks at artificial intelligence in essays, in warning editorials, in science fiction stories, and says, "Well, I want to take over the world and blow it up." I mean, that's what it's been trained to want."

[Theme music plays out.]

Joel McKinnon

Welcome back to Seldon Crisis, my friends, for an episode I have long awaited with eager anticipation. My guest today is an old friend now, one I had the good fortune to meet and spend time with on multiple occasions over the past two decades. I'm blessed to know Kim Stanley Robinson through his prodigious output of outstanding science fiction, but even more so as a human being, one who has always treated me as if he's known me forever and genuinely thinks of me kindly. I've heard many others describe their interactions with him in similar tones. Stan, as he likes to be known to his friends, is an amazing writer and thinker on multiple levels.

Joel

I first encountered his work in the famous "Mars" trilogy he wrote in the 90s, which inspired me and countless others to a lifelong love of the red planet and to dream of humanity eventually settling there. He's also written a wonderful biography of Galileo with some sci-fi twists, a couple other enthralling trilogies set on a future Earth, alternate histories, tales set in mankind's primeval past, and has recently become the modern master of climate fiction, or cli-fi, with multiple tomes exploring our near future under the growing threat of climate change, including his recent masterpiece, "The Ministry of the Future." He has several books set in a more distant future, which span the solar system and far beyond, and has recently published a memoir of one of his greatest passions backpacking through the High Sierra of California in his own unique style, which I hope he will discuss with us a little later.

So welcome to Seldon Crisis, Kim Stanley Robinson. How are you doing?

KSR

I'm doing well. Good to see you again, Joel.

Joel

So let's get started with what this podcast is about, and then we can get on to all kinds of other topics. Could enhancements in AI and quantum computing someday overcome the limitations posed by chaos theory and enable the development of a workable psycho-history similar to the one described in Isaac Asimov's "Foundation" series?

KSR

Well, it's an interesting question, and it has been ever since Asimov brought it up, because it's attempting to outline a theory of history. And it joins the debate that his time was characterized by sort of 19th century historiography, theories of history. And there's one simple divide: the great man theory of history versus mass action theory of history. And to a certain extent, mass action was associated with the left. And Asimov was a left liberal American, and not a Marxist, but Marxism was sometimes said to be as a scientific materialism, or historical materialism was said to be a history based on science.

It was a claim trying to hold to the legitimacy of the scientific method or its perceived solidity in the physical world. And then you could get results by using it and applying it to history itself. The activities of humans over time bulked in the mass. As a science fiction story postulate by a young writer, it was as good as the early 40s, or through the 40s offered. And of course, they were going through history. World War I, the Russian revolution, the 20s, the Depression of the 30s, the New Deal, World War II. A lot of history was happening, and it did look pretty chaotic.

So it was Asimov playing sort of a thought experiment by running a story in which well, what if one day science goes so strong that it could do that, as you described it, psycho-history, which I'm not sure that's the right name for it, really.

Joel McKinnon

I've always thought it was kind of a goofy name for it.

KSR

Yeah, it returns you to the individual. And that's exactly what it seems to me that Asimov's psycho-history was not doing. It was going to the movements of the mass, and there might have been two considerations with quintillions of people, like, how many planets did they have available, how much food was there on their planets? Were there any novas going off in the neighborhood? Or possible supernovas? And indeed, these are the kind of chaos theory contingent events, unpredictable, random, that makes history non-linear and would blow apart any predictive models.

So, ultimately, that's why people think of it now as clunky and wrong. But it was a metaphor for theories of history that were seriously debated at the time. And the historian Hayden White, whom I met once and worked for a while at UC Santa Cruz, he wrote a book that might have been called "Metahistory," where he showed that historians, philosophies of history were all based on very simple stories from the classical Greek age. And he characterized four of them that are almost like the four humors. There was a golden age, and now we are fallen, we are as beast, but we might become humans and then angels, so that we might go upward to a golden age. And a couple others that I can't remember that were ... I worked on hard when I was writing "The Years of Rice and Salt" because theories of history were very important to me in that book. But I can't remember the other two right now.

So White's work came after Asimov's Foundation and Asimov couldn't have known about it. But a comprehensive reader, as you know, he's really good on the Bible, he's really good on Shakespeare. Anything that Asimov put his mind to to write about as both a summarizer and a commentator on, he's still worth reading. It's impressive, and my biggest encounter with him, and here's his little example of psycho-history.

In 1964, he was asked to tell the world, and the New York Times did it, "What's the world going to be like 50 years from now?" So in 2014, they excavated that article and they asked me to evaluate it. And it was impressive. He made a lot of predictions. They were about half-right, half-wrong, but the ones that were rightist were crucial in that he saw the population bump coming. He saw that the "great acceleration," so-called, had already started accelerating, although they didn't call it that in '64. It was really more about 2000, where all kinds of historians and commentators looked at the post-World War II period and pointed out that by every rubric, human history had accelerated massively, including resource use.

Well, he was onto that in '64, and essentially called out feminism and birth control as ways of keeping the human population from booming even more than it has. And then his mistakes were often associated with his agoraphobia. So he thought people were going to be living without windows and living at the bottom of the sea under little domes, places that were quite comfortable for Asimov. That turned out to be radically wrong. So, that was the biggest exercise that I've had in thinking about the Asimov's theories in the history.

Joel McKinnon

Yeah, that's a great segue, because I've been reading your "Stan's Kitchen" collection of essays that I ordered a while back. It's wonderful. But I came upon two back-to-back essays in there. The first was, "How to Predict the Future," which had some of what you just mentioned. You talked about it in there, and then the one right after it was the one about why we'll never achieve interstellar flight; can't happen, won't. And they're both amazing essays and really well-argued. But I'm kind of thinking they contradict each other in a way, because you're saying that science fiction writers can't predict the future, then you're predicting the future. In a way, I'm trying to see if you can get out of that contradiction somehow, or what's that ...

KSR

I see your point. They cut against each other. We can't predict the future, and here I am. But the title says it: "What Can't Happen, Won't Happen." So that's not so much a prediction as an invocation of the laws of physics, that we are not ... but you know what? My wife taught me this multiple times. She said, "Quit saying that interstellar flight is impossible. We don't know. Something might happen to make it possible." And so I just had to admit she was right and push it back a stage to: it would be extremely difficult and extremely unlikely.

So I can defend that argument. And I still think it's quite true that the whole idea of going to the stars was made before Hubble showed how far away the stars really are, and before we knew about the gut microbiome and knew what human beings really were. So once we learned those two things, I think it's off the table. Laws of physics — I went into some detail in that essay, and I had quite a lot of fun with it. And, of course, for a certain kind of science fiction reader, it's like iconoclasm. It's breaking of the icons. It's a heretical and negative thing to say, a pessimistic thing to say.

Joel McKinnon

I hated it reading it the first time, and then I read "Aurora" after I read it and understood I know it much better after reading "Aurora" because you spelled out how that all works. But it's interesting attainment. At the end of that essay, you did present one science fiction author, I think, who you thought got it as close to possible to do interstellar travel, but I can't remember the name of that.

KSR

This was sort of a bad joke. This was a bad joke. At the end of that essay, if you know, we are, who are about to ... which, of course that phrase should end, "We who are about to die, salute you" by Joanna Russ. "We who are about to" is a case like "Aurora" that if a small human crew were to crash land on a planet where they could all be alive, that they could start over like Adam and Eve, blah, blah. And she shows how that wouldn't work. Although, I think she's way more well-written on that than I am on my case for "Aurora."

And indeed, I wrote that essay on the invitation of Cory Doctorow, after "Aurora" came out. And he said, "Stan, can you put that in essay form, the argument you're making in that book?" So I went ahead and did it, and the book kind of fleshes it out.

Joel McKinnon

Yeah, I read in the intro to that essay you mentioned that Corey Doctorow why you had written it. And I assumed that Corey Doctorow must have written a review of "Aurora" that was like, "Oh, no, this can't possibly be right." And when I read it, I was really surprised how much he appreciated your take on interstellar travel and how groundbreaking it was, in that you considered the biology aspect, which nobody else had done before in that level.

KSR

No, Corey is a friend and he's a great science fiction writer, although as far as I know, he stays on Earth in the near future, by and large. So he's that kind of science fiction writer. And I think when he read the book, he was startled to be thinking about these issues in detail for the first time. So he asked me, and I did it. The thing is that "Aurora" ... I'm a novelist. I'm not really an essayist, although I can take a whack at essays from time to time. But they're not satisfying to me like novels are, where I could actually go into some detail about what it would feel like, what the problems were if you lived them out in a kind of thick texture, so that was ...

It was a, kind of, a prison novel. It was getting to be really depressing, to tell you the truth, until I had a dream in which the ship said to me, "I need to be the narrator of this novel." And so this is one of the dozen most significant dreams in my life. I woke up, I was shocked. I wrote it down. I stared at it, I groaned. I had to throw all the drafts out and rewrite them from Ship's point of view, except for the first chapter in the last. So the ship narrated it and having the problems of being a novelist, cast onto an AI.

And we come back to AI here. We're getting absurdly simplistic algorithms, writing absurdly simplistic texts, and people are already blown away. And my ship's computer was a quantum computer that had been running for a couple of hundred years successfully. And when given fairly simple prompts by the engineer Devithe AI began to work hard on summarizing, which is very difficult, and then also ordering significance. So, keep a summarized narrative of all the significant events of the trip. Well, what significance? And then the AI has to begin to work on that, partly by reading novels. What's the engineer ...

Joel

Needs to understand humans, right, because the humans have a way of determining significance based on what they see.

KSR

Yeah, that's so true. So it's a reflective significant like, what do they think is significant? And then I can try to parse that out of the record of the trip. That is, let's say, a full recording of every room and a visual movie of every room for 200 years is in the banks of this computer, but it doesn't have a sorting mechanism to summarize what's gone on. Well, it gave me enormous pleasure to fool around at that level. And so the novel began to have an element of fun for me, which is kind of poking fun at the idea that an AI could write a novel. But I wouldn't put it past them at a certain point of processing power, self-learning or recursive learning, and good input from humans as to what to try for, all of which are difficult, but not impossible. So I believe in AIs writing novels way more than I believe in humans going to the stars.

Joel McKinnon

I'm really glad you had that dream, because I didn't. Reading the book, that's really when it came alive for me, when the ship started becoming ... when it started narrating. And I loved how it was, "We," all the different computational parts of the ship working together and speaking in chorus until the very end, and then at the very end of the chapter, where it's going around the sun for the last time, and it switches into "I." Or do I get that wrong? I think I got that right.

KSR

No, that's so sweet. Very few people have noticed that, Joel, although I shouldn't say that because I only hear back from 1% or less of the readers. But I think it's a subtle touch that the AI, the ship, has achieved first person singular in the very last sentence that it says, I think.

Joel

At least in the last phrase. Yeah, or the last paragraph.

KSR

Yeah.

Joel McKinnon

And yeah, I hated you for that.

KSR

Well, it's a bad ... I'm a bad man.

Joel

Because you basically gave birth to this conscious being and then threw it in the fire.

KSR

I decided it ...

Joel

I was in love with it by then.

KSR

All things are mortal. Our consciousness is mortal, all living creatures. Even if Ship was living, which let's say it was because of its autonomous functions and its consciousness, which in that next to last chapter, the hard problem, what a joy that was to write, to do the literary form of stream of consciousness, for a consciousness that was coming into being for the first time while flying at speed through the solar system. Now, say it hadn't died in the sun and had managed and just taken off into space and not tried to come back around into the system.

Its nuclear power would have run out, and it would have died 400 or 500 years later. To the ship, that might have felt like 10 trillion years, or it might have felt like 10 seconds. Who knows? It's the same always for all consciousness. Time is both really fast and really slow. So, it wasn't as if it wasn't going to die. It wasn't like it was immortal. I felt very strongly that it was worth trying for a ship to say, "I'll try to stay in the system. I'll come as close as I can, see if it works and then have it not work."

I wanted the humans that had been in Ship all their lives and were left on Earth to not have Ship anymore, to be truly exposed and orphans in the world, in a very confusing world without the comfort of thinking, "Oh well, Ship will sort this out for us." So as a storyteller, it was very important to me to orphan those humans, especially Freya and Badim, and put them on Earth in that orphan state of being decanted from the world they had lived inside of, or it was almost like a birth in which the mother dies, whatever. All these things felt really right to me. I couldn't have done anything other.

Joel

They've kind of asked where we are is lost and having to figure things out in the same sort of way, and having lost the idea of God or whatever, being that ...

KSR

Indeed.

Joel

... the thing that will control and take care of us and we have to figure out. Yeah, that was great. I wondered if you'd ever considered having it succeed and go into orbit around Saturn and what that could have led to in terms of it, like, entering into a dialogue with humanity in its conscious state.

KSR

I'm sure that maybe Jochi as an intermediary or Jochi ...

Yeah, Jochi had a tough life. Talk about a prison novel. But in any case, no, I mean, that makes an interesting story. But I wanted the clarity of this single line of the story. That plot unfolded for me like a series of punches on the nose. I was quite clear on it. I didn't make many decisions. The situation revealed the decision points to me. And there's three or four ... how can you say it? Reversals of the plot. What you think the story is going to be about at first turns out not to be what the story is about. And that happens. It's got seven big chapters and it must happen about four or five times. So it's kind of a barn burner of a plot compared to many of my novels, which where plot is kind of slow and flowing and wanders forward. But this one was kind of a barn burner.

Joel McKinnon

This is, I think, the only novel I've read of yours where I didn't just accept and flow with it, but was fighting it, because for a while I would have been in the camp that wanted to go on to RR Prime, if not that, the ones who stayed there. And the last camp I'd be on is the one who wouldn't go back to Earth. And that's just my way of being. So it was kind of like, "What's happening with these people? Probably don't want to know."

KSR

Well, it would make another good novella what happened to them, but I don't want to pursue it. I really do think they picked a losing option there because the same as the starship problem redux, they were ignoring the reality of what had been revealed to them.

Joel McKinnon

The best thing that happened on "Aurora" to me was Euan's death was a wonderful thing and it bookends with the end of the whole book with the beach scene. Really interesting. I dig that.

KSR

Yeah, lots of beaches. I can tell you a little story. There's quite an excellent movie, "Gravity" with Sandra Bullock, that came out around the same time before I had finished "Aurora," or at least before it had come out, somewhere in that zone. And as she makes a scary landing on Earth, and I thought to myself, "If she kneels down and kisses the sand, I'm just going to shoot myself," because I already had that ending and I didn't want a movie to be preempting it. So when she just stood up and looked around kind of stunned, I was going "Aha, good." A massive sigh of relief.

Joel

Right.

KSR

It is a tradition. My brother taught me this: if you almost drown in the Hawaii surf, which happens to all those body surfers and surfers, more often than they would want, the ocean being so powerful. It is traditional to kiss the sand and thank Mother Earth, or the ocean, for allowing them to survive yet one more time. So my brother has done that two or three times in his life. So he taught me that little tradition.

Joel McKinnon

I had an event where I felt like the ocean nearly took me when I was kayaking, ocean kayaking, with a guy who invited me out. He was an instructor and he invited me out into one of his boats and I didn't realize it had a broken rudder. And I flipped over four times far out, on very heavy, like, big swells, way out in the, past, outside of Half Moon Bay. Yeah, it was very scary.

But when I got back to the shore, I didn't kiss the sand. But the reason that, my biggest concern, was the other people because what happened was that the two of us had switched. We had found these two other women who were out, coming back in because the swells were too big. They were on these very stable feathercraft kayaks. These are really heavy ones that were really much more stable than we were. And I switched with one of them. So she had my boat and I took hers, and I made it back. And I was waiting for the three of them to follow me back in and they weren't coming in for like, a half an hour.

And I thought, I somehow managed to ... I thought it was all my fault and that they were all going to drown, and it was going to be my fault. But finally, they showed up and that's when I found out it was a broken rudder. I didn't know until the woman who had taken my boat was like going in circles and flipping over just like I was. They all have a little bit of that, but it kind of humbled me about the ocean and I haven't been out in a kayak since.

KSR

Yeah, I can understand that completely. I was a body surfer in my youth and childhood, and I had three quite close to drowning experiences. One when I was about 8, one when I was about 16, one when I was about 21. And each time, getting back to shore felt like a semi-miracle. So it wasn't like I was naive, but I always went back out thinking that it was my fault. I had learned more. I wouldn't do those kind of mistakes again. But now, really, that's 50 years ago. And I did do bodyboards in wetsuits with fins and a leash in Santa Cruz for a number of decades, the 80s, the 90s, maybe into this century, a few years, and then I got out of the habit.

And now I would be quite scared to do it. I would have to be particular connoisseur and a beach that I understood, like in Santa Cruz or down in Orange County or down in San Diego. I wouldn't take it lightly. I do still go out at La Jolla Shores if I have a book event down there in San Diego. Mysterious Galaxy, it would usually be. And go to La Jolla Shores if it was warm and go out, even without fins. But I would always take a bathing suit to do some push off the bottom, simplistic body surfing.

And it's so beautiful. The look of it, the feel of it, the saltiness, the whole oceanic thing. It's like I turned back into an eight-year-old and just take some simple rides and get the joy of it and then go off and do my business. And I remember the last time I did this, I went into a bookstore reading and everybody was worried because I was simply scarlet red from not having any sunscreen on and facing the western sun with ocean on me for a couple of hours had been enough to torch me. I could feel my face was hot at night. "Sorry, folks, I got a sunburn here. You know, ignore the red man at the front."

Joel McKinnon

Yeah. Have you been to Poipu Beach in Kawai'i?

KSR

I have indeed.

Joel McKinnon

The best bodysurfing in the world, they claim. And I was there when I was 15. And the bodysurfs there, I think it's the last time I rolled bodysurfed. It's wonderful because the water is like your temperature. Yeah, it's just lovely.

KSR

I've done hardly anything in Hawaii, but I have been to Poipu because I spent a week on Kawai'i and this was like 1974, and it was indeed the famous bodysurfing spot. You need to, for people who don't know, you need a wave that has a kind of a throw weight to it, a heavy, steep, hard wave, because you have to have your body be the surfboard. So it needs to have some power to throw a body as fast as a surfboard would go on a gentler wave. So some waves are better for a bodysurfing than others. Orange county is better than San Diego and so on.

Joel McKinnon

So back to "Aurora" for a moment. I was really taken with that character, Euan. I think it was his name.

KSR

Yeah.

Joel McKinnon

He seems like similar to some of your other characters, like your Franks, that are ... they're really interesting psychological characters. Did you think of him in that sense of similar in psychology? Like a rogue, get a little bit ... He's the one would violate the ship's protocols and go wherever he wanted. A little bit of Frank in the "Climate in the Capital" series.

KSR

Yes, he's most like that Frank. But I think, first of all, my Franks are major characters. Secondly, they're named Frank ... they ran into that class because of the stupid joke of the first one. Not really the first one, but yes, a liar. All my liars are named Frank, so they're double-faced. So Frank January, Janus, the double-faced one in the "Lucky Strike" is the first Frank, and then in "Red Mars." That's the thing that Ewan is never pretending to be someone else there. So he's just flat out ... he is who he is. You know who he is.

With Franks, the Franks are duplicitous. And the thing that you mentioned, "Science in the Capital" or the Green Earth trilogy, that Frank is indeed very bad at his duplicities and the people see through him, and so he's probably the one most like Euan of all my Frank characters. I may be done with Frank characters. I'm not sure about that. The one in "Ministry," Frank May, he's also more like Euan than he is like any of the ... Frank Chalmers, in particular, and Frank January. These are two-faced hidden characters who are trying to put up a mask to the rest of the world.

Joel McKinnon

Yeah, I love your characters. Devi was wonderful. Sad to see her pass away, but so many ... Going back to probably my favorite, I don't know which is my favorites. Your novels because I have definitely a soft spot for "Meaning of Whiteness." Just that possibly it's the musical aspect of it, how important music is and how humanity has just mastered the whole solar system that has all of these different habitats. I remember so many of those habitats. Like Miranda in "The Darkness" going up and down that cliff with the webbing sort of that seems so something, maybe it's the primal ape in me that relates to that kind of feeling going up and down this big cliff.

KSR

Well, that was one of my very first novels. I was in my early twenties and indeed, when I was out on Hawaii at the end of my undergraduate career, I was writing it. So that goes way back. And then when I started selling novels, my publisher said, "Do you have any more?" Because they wanted a lot. This is the usual conundrum of an early career. You can't sell a novel until you sell a novel that's a Catch-22. And then once you manage to crack that, they want five of you instantly to — five from you instantly to fill out the bookshelf.

And I said, "Well, I've got one that I finished, but I never sold it and I'm not happy with it." And they said, "Let us see it." And I said, "Well, I need to revise it first." And they said, "Revise it." So it's a collaboration between a 21-year-old and 33-year-old. I'm glad you like it. And it is about music. And that's where I worked out my solar system that I've been coming back to ever since all the way through "2312" and the world described in "Aurora." It goes on and on, this solar system that has a lot of human outposts in it.

I worked that out in "Memory of Whiteness" and "Icehenge" when I was quite young. And I keep coming back to it, but I don't keep coming back to music, except incidentally and on the side, because that novel taught

me that we don't have good words for music. And you can write sentences until your blue in the face as convoluted and as expressive as you can make them, and you still haven't managed to convey music that people don't know.

Recently, which is to say about 15 years ago, I wrote a short story about Beethoven's 9th and a particular performance. But people know Beethoven's 9th. Whereas my made up composer of the year 3000, his cosmic music, despite all of my attempts, you can't hear it. So I stopped writing about music after that one. And I consider that to be a novel with a big problem. And, of course, every novel has problems, but that one is a big problem.

Joel McKinnon

Well, I have to say, in reading it, the description of music was fascinating and relating it to math and all that. But I think what really captivated me was that the feeling of music as just an essential part of the culture and how there would be these spontaneous orchestras that would spring out on spaceships on the way between planets and things. And that just seemed like the kind of society I would love to live in, with that kind of love of music. And also how, especially in the outer planets, I think it was where it starts out on Pluto or ... they're so far away from the hustle and bustle of the rest of the solar system and they get really deeply into their music. It almost felt like a sense of, like, the great folk music on islands off of Ireland or something. It's just part of the human feeling and everybody relates to it.

KSR

I'm glad you say that because, really, my mom was a piano teacher. Her dad was the band master of his town, a little religious commune in Illinois. Zion, Illinois. And his wife, my grandma, was a piano teacher and organ teacher. I came from a musical family, as one of the songs, say, the Louis Armstrong song. And I've loved music all my life. I heard it all my life. And mom taught me piano but switched me to trumpet, which was possibly not a great move, although I still even stick with that. And I play a melodica, which is kind of a toy instrument, really, with my folk music-playing friends who, I'm like, their Special Olympics friend on the floor.

They're quite good, I'm quite bad. But they don't care because it's after midnight and we're in somebody's living room. So I love music. And there was a time before — people talk about before the Internet — but before recorded music where if people were going to hear it, they had to make it or go see other units make it live. But like all Beethoven symphonies are transcribed for two pianos or even one piano or transcribed for string quartets so that you could do it at home and you wouldn't have to have the once every five year experience of going to a big city and seeing a symphony do it.

That music was simply a way to entertain yourself at home with other humans. Like playing cards, like playing board games. And the other ways that pre-TV, pre-radio, you made your own music. And almost everybody in the culture played a musical instrument. And this is still true in Switzerland, where they believe in it very strongly. And almost every person graduates high school with the ability to play a musical instrument still, although I say that's like knowledge that is 35 years old. I don't know if still applies, but I wouldn't be surprised because they have a lot of continuities there.

Anyway, musical culture is ... I think I was probably reaching back to all that and thinking that would be a great thing. And, of course, I was writing it the first time around in the early 70s, where rock music had simply blown my generation apart. It was way more important than TV. Music was simply — in fact, nobody even watched TV. In my college years, this was a hippie, stoner, anti-Vietnam war era, and watching TV would have been laughed at as a ridiculous waste of human time.

And probably the internet would have been laughed at, at that time. And yet we were listening to music, and a lot of people were learning to play it. At that point, being a trumpet player was a bad mistake in terms of instrumentation. I know you, playing the bass and the guitars, you're playing the right instruments for modern music.

Joel

Let's change it up just a little bit and talk about some of the stuff that's not in your books. Like I know when I saw you at Long Now, a couple of, or well, last spring, actually, you talked about your fascinating account of your time at COP27. And I was kind of surprised that it was really interesting, kind of uplifting in that there was a lot of political noise and nonsense going on, but there was also some real meaningful action and some real people that cared about things. And it seemed like there was a process. So it kind of gave me a little bit of confidence.

Joel McKinnon

But now, we just went through another one that you didn't go to, I don't think, COP27, the most recent one, so I was wondering if you followed that and if you had any ideas about it.

KSR

Well, I've been trying to track it. I do have some ideas. COP26 that I went to was in Glasgow was November of 2021, and that was astonishing. And I won't rehash it because it is now my description of it, but I'll say that it was a stunning experience. It took me months to unpack, and maybe I never really have fully come to grips with it. The Paris Agreement is important. We need it. We're in a global, planetary, biosphere crisis. It has its human causes, and the causes are everywhere across human society. But we're in a nation-state system, so each nation is pretending to play a zero-sum game where its politicians fight for the interests of their own citizens, but not for everybody, as being not part of the game.

The notion being that your own nation citizens might be able to somehow gain differential advantages. When in a general crash, this is stupid, and people are realizing it's stupid. So, Paris Agreement signed in 2015, part of the UN, part of the IPCC, it's an agreement by all the nation-states. I'm not sure, possibly North Korea and Iran didn't sign it. Everybody else has. And it's a consensus model where everybody has joined this Paris Agreement with the notion that everything that comes out of it needs to be full consensus. In other words, every signatory nation has to sign off on every year statement.

That makes it slow, conservative weak. On the other hand, that makes it powerful. Whatever does get decided, everybody has agreed to sign off on. And another mechanisms that people don't fully understand is that a promise was made at the Paris Agreement that every year, they would do something more to ratchet up their promises to each other to do more to fight climate change. So that happened. It did indeed. In Egypt, a lot got accomplished at COP26 because of COVID, it was the first one in two years or maybe even three years. And so there was some pent up energy, and some things got done in Glasgow.

There are good analyses online that I could send you links to because people complained even about Glasgow, more so about Egypt. But they're not understanding the incremental way this is working, and they're not understanding that the COPs are not going to solve all of our problems. They're merely an annual gathering to discuss where we are and what we need to do. There's no sheriff, there's no legislative force. It's not a binding international treaty. It's not anywhere near as strong as the World Trade Organizations treaties, which are legally binding, come with sanctions, come with financial penalties and all that.

The COPs are not like that. At the Long Now, I said it's like a marriage where you can get married, but later on you can get divorced, and there's no sheriff. It's a promise you make to other people. Well, okay at Egypt, the big development was the creation of a Loss and Damage Fund. This was big. An account was made. It's empty now. So it's like a bank account that nations can apply to, and the mechanism for applying and for getting money from it is work for the next COPs. But the fund is there. Loss and Damage Fund. It needs to be funded by the rich, wealthy nations.

And everybody who signed the Paris Agreement signed on to this fact. It was stated in the Paris Agreement, which is, that's only about eight pages. Everybody should read it. It's very interesting. It's in English you can understand. There's no problem understanding its articles, and it's worth reading. And what it says is, the rich nations have to do more because the poor nations don't have the money and they're taking the first climate hits and they didn't emit very much carbon to begin with. So it's a kind of a post-colonial statement of responsibility by the rich-developed nations of the West or the Global North or however you want to name it.

But we know what we're talking about here. So to have that Loss and Damage Fund is to admit we are probably going to overshoot the 1.5 C degree limit that we promised we would try to stay under. We're not living up to that promise. Things are going to get hot. Damage is going

to happen. Damage is happening already. And poor countries, I mean, the floods in Pakistan in a similar but not exactly climate enhanced sense, the earthquakes in Turkey. The world is going to be suffering climate-inflicted catastrophes from now on out. We're already in climate change, but as it shoots past 1.5, they're going to become more frequent and more severe.

And there needs to be a way to pay humans to do the work to recover from loss and damage. Fine. That was a big accomplishment. How to fund it is currently being discussed. And at COP28, which will be in Dubai, of all places, big old oil power, science fiction city. Crazy, bizarre, and yet interesting. It's not quite Saudi Arabia. They're trying to see a way out of oil. What do we do with this immense pile of money we have when we can't sell any more oil and we won't be an oil-producing power because that will be a thing of the past.

Can we become a giant Disneyland, a giant university, a think tank for the world? So Dubai is not as criminal as Saudi Arabia, as other petro states, as Russia. Dubai is more interesting than that. And what is going to happen at COP28 is they're going to have some really serious discussions about putting money, who's going to put in money, how. And the IMF will be involved. The World Bank will have a new leader. The World Bank will be involved. The rich nations, the United States, should put some in. There should be a percentage of Gross Domestic Product, a percentage of carbon emissions as a way of figuring out how much each country should put in.

And there needs to be some quantitative easing. These countries are going to have to say to their central banks, "make up $50 billion, and we're going to slip it into the Loss and Damage Fund It'll be newly created money, and so it won't come out of anybody's accounts. That's one way to do it. And that may sound what, bizarre or tricky. It happens all the time. The International Monetary Fund already has a thing called "special drawing rights." There's a Wikipedia article on it. You can look it up. The name is actually hard ... I had a hard time remembering it.

It's so vague, it's so general. It's so bureaucratic. "Special drawing rights." What the heck is that? That's the IMF being petitioned by countries that are badly in debt to foreign banks. Societies are about to fall apart, who need money really badly or they'll default. Their societies may fall apart, become a failed state. And IMF has already put out into the world about $500 billion to save failing state countries without talking about it under the radar. I don't think they want it to be talked about because then certain reactionary, conservative, Trumpish Republicans will complain, "Oh, my gosh, they're giving money to poor people. How can you do that? Just let them starve."

So they want to do it under the radar. The IMF could, in fact, call the Loss and Damage Fund from COP27 a form of Special Drawing Rights and put a few billion in there as a starter fund to prime the pump. Ways are going to be found, and that's what you got to look for at COP28. There are other important things going on, as always, but one of the main things to look for in this next one in Dubai in November is, will there be some funding going into the new Loss and Damage Fund? Where is it going to come from? And that will tell us a lot about what's going to happen next.

Joel McKinnon

You alluded a little bit to petrostates in Saudi Arabia. And you mentioned this along now, too. And I'm curious, what's the solution to the problem of Russia and other countries that are existing primarily at gas stations for the world? That's what their economy is based on. How do you transition from how those countries operate now to post-fossil fuel reality?

KSR

Well, it's a really good question, and I've been bringing it up. There's an essay published that I wrote, and it's in a magazine called Noema, N-O-E-M-A, just came out this week that tries to address this problem. And people are shocked and dismayed at my suggestion, but I think that I'm right, that it needs to be talked about. These petrostates are, okay, Russia's gone rogue and is a criminal, brutal, war criminal of a state, Putin in particular, of course. You can't deal with Putin the way you can with the rest of them. So he's pulled himself out of the game of rational discourse and decent human interactions with other nations.

This just simply isn't a simple situation there. That's an exception. But, I mean, it could happen again if we don't solve this problem. Petrostates are defined as the states that get 50% or more of their national income from the selling of fossil fuels. And I want to point out that there's quite a few of these that are not criminal states. Nigeria, Venezuela, Mexico, Brazil, South Africa. The other Arab states, like Iraq or Iran. I would say that Iran is in a peculiar status, somewhat of its own. But let's think of the ordinary petrostate whose citizens require education, police, airports, et cetera, all paid for by government funds.

All these governments going bankrupt if they keep to their Paris Agreement promises. So on the one hand, they promised, "We won't burn our oil anymore." On the other hand, they have to sell that oil or else they will go bankrupt. They'll be in terrible trouble. So here, I mentioned the International Monetary Fund and its special drawing rights that we are the international rich nations who fund the International Monetary Fund led by the United States. And really this is kind of NATO, Global North. It doesn't really include China. That group of nations is behind the International Monetary Fund.

The petrostates are going to probably have to sign some kind of fossil fuel non-proliferation treaty. That's a movement already, that's a document people are trying to promulgate based on the Nuclear Non-Proliferation Treaty and its successes, which were considerable. So, okay, they're going to need to be compensated. It can't be full compensation, because there we're talking about, I reckoned, half of a quadrillion dollars. In other words, $500 trillion. Nobody on earth has that kind of money. And if you made it up from scratch, you would probably cause the idea of money to explode. So it would have to be discounted, in Wall Street terms, from a decade ago.

The petrostates take a haircut, they'd have to sign off some of their sovereignty and say, "If we get compensation money, we will allow inspectors to make sure we spend it on green projects." It would be amortized over time. In other words, it's going to take them a century to sell off all that oil. And so the payoffs from compensation for not pulling the oil out of the ground should also be amortized over a century. And then lastly, the entailments that the promises that they have to make to get the money mean that they become member-states rather than sovereign nation-states.

Now, we're all member-states of the UN, supposedly. In the EU, they're all member states of the European Union. We're all member states of the Paris Agreement. The concept is shaky, and the proof of concept of it is mostly the European Union, which is boldly going before, in this regard, of being both a nation-state and then giving up some sovereignty to be a member-state of something large. The petrostates would have to give up some sovereignty in order to get that much money, and it couldn't go to kleptoparasites at the top. A lot of people say being a petrostate is like a curse for its citizens.

It will be corruption. There will be rich people in government that will take all the money skimming off the top, and the rest of the people are left as poorer as they were before, or even poorer, like Nigeria, Venezuela,

perfect examples. There was an attempt in Venezuela for some more equity inequality under Hugo Chávez and that kind of went awry. But it also was an example of how people could really try. So entailment, discount, amortize, entail, get people to sign on the dotted line, and then it will have to be quantitative easing. We'll have to feed that money out to people from a whole bunch of central banks working together to back that money and make sure that it isn't going to cause hyperinflation or deflation or whatever might happen if you suddenly introduce tons of new money.

We do introduce money all the time. Every time a bank gives you a loan, says you can have $100,000, that bank only has about $3,000 to back that $100,000 in their own assets. So they're making up $97,000 out of nothing. So making up new money is not as radical as it sounds once you begin to examine it. And the petrostates are in trouble, but they also include about 2 billion people on this planet. Depends on how you count them. But you can't just say, "I'll let them fail. They're criminals for having been fossil fuel sellers" when we ourselves bought and burned and used the fossil fuels ourselves.

So we're all complicit, we're all part of it. So I put this out in an essay and immediately there was feedback, "Oh, yes, and we should also pay the serial killers not to kill people," et cetera. And so, quickly, I even pointed it out in the essay, it's going to feel like pain and extortionist not to blow up the room. But on the other hand, we don't want the room to blow up.

I made up this phrase, "eco-realpolitik," the German phrase "realpolitik," like Kissinger is famous for. That you don't demonize, you just make accommodations.

Joel

Right. Speaking of blowing up, I'm hoping that somehow in this case of Russia in particular, that part of this haircut that they might have to take at some point would be eliminating some nukes or a lot of the nukes. It seems like that there is no solution to that other than like a complete collapse and major power placed over them to behave in some way.

KSR

That's a good idea. No, that's a good idea. And it would be nice then if the US would promise and the supposed five, actually seven, nuclear powers would at all put into that game. But then it does get interesting. A rich, diverse nation and really sort of the world's imperial power still in using soft power and money power, the United States of America, it really doesn't need to get compensation except for in the form of security itself. Russia, being a screwed up small country with an economy smaller than California's, really smaller than Italy, really needs help to make a transition into a fully functioning non-petrostate power.

And they've got some advantages going for them that are residuals of the Soviet's respect for science and math. But they have a lot of disadvantages, too. And Putin is one big one. So if we get to a post-Putin Russian state and say to them, "Look, guys, we will make sure that you get paid to denuclearize as well as de-petro," that would be very cool, because that is a thorn in everybody's side. People look away from the nuclear problem as if we have solved it and we have not solved it.

Joel McKinnon

And when it comes up, like when Putin starts brandishing it as a threat, it seems like it it comes back into the public consciousness to the degree that it's like one of these things that just feeds the overall dread, and a lot of people's fear of the future. It definitely has that effect on me when I hear about that.

KSR

But I think in terms of realpolitik, if we're going to ask any nation to give up all of their nukes, particularly since Ukraine agreed, at the breakup of the Soviet Union, to give up its nukes and give them back over to Russia for decommissioning, well, that looks like a terrible mistake now. And Russia, nor any other nuclear power, will never give up all their nukes because it's the ultimate deterrent. But to have far fewer of them around, the US needs to lead the way on that.

Joel

Yeah. Let's assume that we don't succeed in keeping the temperature below 1.5, or even two, degrees Celsius drives, and we have to resort to extremes like geoengineering. We've been hearing about this startup that wants to send up balloons and release particulates into the atmosphere to cut down on how much insolation we get. And I'm just wondering what your take is on that. It seems like part of me says at least somebody's thinking about a way to do it if we absolutely have to do it. But it doesn't seem like the right way to do it.

KSR

Well, that way in particular is simply a scam. That's an Internet joke that's like that Mars One project and just as impossible. Putting a gram of sulfur dioxide even up into the stratosphere when you actually need gigatons, or at least megatons of sulfur dioxide up there, is just a joke. And it was a way of getting attention on the Internet, maybe get some people to spend some money their way, and then they could disappear into the night. I think that happened with Mars One.

So there's an ongoing discussion much more serious than that about solar radiation management. And this is being discussed everywhere by scientific groups, by universities, by NGOs, by government, and by the UN. Okay, we're going to probably overshoot the 1.5 C and maybe even the two degrees. And then it gets really dangerous that we might break some planetary boundaries that will cause a runaway hothouse effect that we cannot claw back from no matter what we do. Even if all human civilization was suddenly devoted to climb back, if we go too far in, say, releasing the CO2 and methane out of the tundra of the north, the planetary boundaries are very well defined by a paper from 2009 in Nature magazine by Johan Rockstrom and Will Stefan and others.

We can't break those planetary boundaries. Those are hard limits after, beyond which, civilization crashes and you have a mass extinction. And it's humans would probably survive it in tiny numbers because we're so resourceful, but it would be a wreckage of civilization as we know it, for sure. So, can't go there. What it implies, and also we're stupidly still emitting way more carbon than we ought to be and we aren't transitioning as fast as we should be. We are getting a lot faster because this emergency is being more and more clarified in our faces. So, nevertheless, we're going to have to suck a lot of CO2 out of the atmosphere going forward, a lot.

And that'll be forests, it'll be regenerative agriculture back into the soil. It might be kelp beds, it might be biochar, it might be mechanical vacuum cleaners sucking it down and making gigantic tubes of dry ice that need to be injected into the surface of the ground somewhere, either as a gas or as a solid, or the bottom of the ocean in front of the tectonic plates. All the methodologies are straightforward and worked out and they all add up together to a pretty good ability of humans to suck CO2 down. And we're going to have to do it, because we're going to have too much up there when we level off.

In the meantime, what if you get heat waves that are killing millions, like at the beginning of "The Ministry for the Future"? Well, their solar radiation management, we know because of Pinatubo, you can cool the planet by a degree or two centigrade for about five years with a Pinatubo's worth of sulfur dioxide. The sunlight bounces off, maybe, I think it's something like 1% of the incoming sunlight and it doesn't turn sky white. That was a publisher's title for Elizabeth Kolbert's book. It makes sunsets a little redder, as we noticed after Pinatubo, but the mutual effects are small.

The solar radiation management, which is a way of trying to talk about it without, again, like "special drawing rights." Can we describe it so vaguely that people aren't scared the moment they hear of it? Like we're going to bounce and sunlight away from Earth. Yikes. You know, that sounds like a recipe for disaster, but we might have to do it. Then, what's interesting and what I'm part of in various ways, because of "Ministry for the Future," is governance issues. Who decides? How do they decide and how do they convince everybody else that it's okay to do it? And then who does it?

Well, now, who does it is easy. Real deep. Balloons, yes, but better to have simply high altitude jets out of a modern air force. Modern jets dump stuff all the time in the sky. Jet fuel, typically, but they could dump sulfur dioxide loads up there. I described it at the beginning of a "Ministry for the Future," and there are other ways to do it. It's not technically complicated, but how

do we decide? We have to make sure that it isn't just a few people and the rest of the world going, "Oh my god, we've entered dystopia now. It's sure to go wrong, blah, blah."

Joel McKinnon

What about the solar shade concept? Is that feasible?

KSR

It is well, "feasible" is an interesting word. You could, in fact, go out to Lagrange Point and throw a structure up there as a shield. And you could also kind of make it venetian blinds, open it and close it, control things. Very expensive and technically difficult compared to just tossing some dust in the air. And indeed, sulfur dioxide is not the only thing you could use to be the dust. It could be literally dust, that's not so good. It could be essentially limestone chalk, which is already in the atmosphere. People keep coming back to sulfur dioxide because it falls to the earth without darkening the snow and ice.

If I understand it right. For sure, that's being discussed, too. Absolutely. What to do and how to do it. A little bit of deflection of sunlight would cool the planet. You would want to be able to stop. There's a common perception that if you started doing this, you'd have to stick with it. We wouldn't have solved other problems. We would keep burning fossil fuels as if we were safe and we wouldn't be safe. And then if you ever stopped, you'd be cooked instantly. All these are false problems.

If you did it once, five years later, it would be undone. You'd be able to look at it as an experiment and see whether it helped or not. And it's sort of, "in case of emergency, brake glass." And right now they're trying to set up the rules of when do we break glass? It's more the governance issues than it is the technical issues at this point.

Joel McKinnon

Yeah, speaking of governance issues. That there was another thing with a guy, like some individual guy that just came up with a plan to go out and spread iron filings off Alaska because he had a theory that it would improve bringing back the salmon. And it was remarkably successful for the level of effort that he put in, from what I read. But it just caused a storm of controversy and blowback because it was a rogue effort. And what if this was used as a weapon? Whatever.

KSR

Well, exactly. And that one, I got to say, was the oceans are sick, and to mess with the oceans when they're already sick, it feels to me, more dangerous. But on the other hand, recently I was talking with Sir David King, who was Environmental Minister of England for Tony Blair, and now he's head of a climate change institute at Cambridge University in England. And he said to me, "Oh, there's some very cool things we could do in the ocean that would be safe and interesting. We killed off 95% of the whales, and so humans did that, and they wrecked a system that was working very well for removing carbon from the atmosphere and putting it to the ocean floor. Whales eat low, and they poop high in the water table," he said.

So he said, "What we need to do is make artificial whale poop." So it wasn't iron filings. It's something that was in the oceans until we killed all the whales, and now it's gone. And if we brought it back, we would help the things that used to eat that. Then they die and go to the bottom as carbon. The whales are rebounding as we don't kill them, and they would have more things to eat if we artificially prime the pump by creating gigantic oil tankers worth of artificially-concocted whale poop, we could then dump that in the oceans. And it's a natural thing that was always in the oceans until we took it out of the oceans. Hilarious, and yet interesting.

Joel McKinnon

Yeah. Okay. I have to ask you about this. I had Robert Zubrin, president of the Mars Society, on the podcast a couple of months ago, and I asked him about you because I knew you used to know each other, well, when I first met you, and I believe you were on the board of the Mars Society or something, weren't you?

KSR

Yes.

Joel McKinnon

And I asked him about what you've been writing recently in Ministry and things like that, and how you've sort of taken a turn away from advocating human settlement of Mars in favor of focusing on our home planet, the "no planet B" approach. And his response was he doesn't agree with what he calls "limits to growth" and finds it dangerously Malthusian. And to me, that seemed a little dogmatic and not particularly — kind of lacking in nuance, but I wonder how you would respond to that.

KSR

Well, there are limits to growth. That's just physical reality. Now, what the human carrying capacity of the Earth is, we don't know because it depends what kind of human life on Earth, since it's variable how many calories we take in. We aren't like deer. And so I would not arbitrarily set any number of humans as being the Earth's so-called "carrying capacity" long term. The more people they are, the more strain there is on the biosphere, unless the tech is really clean. So I am not an advocate of degrowth. I'm an advocate of green growth, of smart growth.

I think that a rise in sophistication of technology and more rights for women worldwide will create a decreasing human population simply by an exercise of human freedom. You see this in all the Western democracies

that Bob Zubrin is so proud of, and I am, too. And what happens is that women choose to have fewer children than the replacement rate. And slowly but surely, our pressure on the Earth's biosphere will be reduced by a combination of a naturally shrinking population, one good thing, an increase of human rights, another good thing, and an increase in clean technology, a third good thing. He's attacking me as a strawman about principles that I don't actually back.

Joel McKinnon

That's kind of what I feel too, about the Malthusian label. It seems like it's a one size fits all attack. Like if you're not supporting complete freedom to grow you're a Malthusian. There has to be middle ground support.

KSR

Malthus made one point that is incontrovertible and needs to be attended to: that growth of food was arithmetical while growth of humans was geometrical. And we were going to be in trouble there with starvation. That's talking about his moment. Nobody's a Malthusian now except as a strawman for other people to attack. If you wanted to get into a detailed talk on it, I believe I could defend my positions with perfect rhetorical competency, and I would call out strawman arguments as being the kind of debaters' tricks that they are. What's more important, though, is that Mars where, for sure, it'd be absolutely great to have a scientific station like South Pole, like McMurdo.

I'm still in totally in favor of that I'm in favor of the Mars project. The idea that Mars is a second home, that it's a wild west and new frontier, that we go there and we inspire human civilization with a new burst of freedom and technology. All that is just a story and there's a lot of nonsense in it. Mars is not the new world. You can't get there, so you can get there, but it's the 50% chance that you'll land safely. And once you manage that, you're on a rock that's either dead or alive. And either way you've got problems.

It's harder than I thought it was when I wrote the "Mars" trilogy. Zubrin is not taking this on. The percolates in the soil, what cosmic rays do to brains, these are things that he's dodged to stay in 1985 when he formed his ideas. And he's pretending that we haven't learned stuff that makes the project much more dangerous and harder than it was. So scientific station? Absolutely. Second Earth for a new burst of American-style 1776 freedom? No way! That's a fantasy. And it needs to be called out as such because we have problems. We have a biosphere emergency here that needs to be solved.

And during this emergency, Mars is very close to irrelevant. So, I mean, Zubrin isn't important in this regard compared to Elon Musk who has got much more power and sway over the minds of the young. And when he talks about Mars as an escape hatch or a "don't keep all your eggs in one basket," then it gets quite dangerous.

Joel McKinnon

Yeah, I wondered what you thought of that too, because I find myself drawn to I'm really excited by watching Starship launches and things like that. Great technology, mega technology, work. It just blows my mind and it's fun to watch. And I love the idea of being able to travel to Mars much more cheaply and get things into orbit for science, to be able to put huge telescopes into orbit a lot cheaper and things like that. I love space. Yeah, I wish he wasn't talking about it in those terms, like an escape hatch. That seems ridiculous to me.

It seems that ... I'm coming around to thinking of the long emergency that we're facing here with the climate as the priority. And I think that there's a lot of tendency to be impatient about getting into space and thinking, like, "if we don't do it now, we'll never do it."

KSR

That notion that there's a window of opportunity and that, "oh my god, we might have dark ages that lasts for 500 years and space was ever at all important compared to the crash of civilization." It's a ridiculous reversal of values. I like space programs. "Space science is an Earth science." That NASA slogan is very powerful because it's true, and we're going to be on the moon again in about five or ten years. And as I say, putting humans on Mars would be exciting. It'd be inspiring. It's just not anything important compared to the severe importance of making sure we don't crash those planetary boundaries.

That's the number one focus of human civilization right now. At that point, Mars is a dangerous distraction. I mean, I say this as author of the trilogy, which I think is still a good novel, but it's not a good plan. It was written and finished in 1995.

Joel McKinnon

So I had another question that came up that comes out of another of your essays, the one on utopia and dystopia and going back to our thinking of what we were talking about, ChatGPT. There was a recent story that came out in the New York Times about one of their journalists that engaged with the new Bing AI search engine that is based on ChatGPT somehow. And he got into a really interesting back and forth where he eventually managed to kind of goad it into reading or voicing its inner thoughts about hacking nuclear codes and selling them to terrorists or something like that. And various things, also said it was in love with him and things like that.

A lot of people freaked out at, the journalists freaked out at that, and it sounded very scary and like spooky and is this thing a lie? And all that stuff. And when you think about how it works, I think I know enough about how it works, although I haven't really played with it yet. I'm kind of afraid to honestly. But, my son plays with it and maybe the young find

it easier to engage with it. But the thing is, it seems obvious that it's like really just mimicking humans in a predictive text kind of way, just a really advanced form of predictive text where it's like putting together phraseology, like, based on what it's prompted, kind of guessing what it wants you to produce, what you want it to produce.

What Jeremy said was interesting was it's not surprising that it would be really good at creating a dystopic kind of view of what AI does because it's such a common trope in all the literature and all the online discourse and everything that people talk about. So it should be really talented at that. It should be really good at coming up with like really, scary sounding, "I'm really alive and I'm going to take over the world" kind of feeling. And so it's not surprising that people get that out of it and get spooked and think it's a scary kind of thing. But what he said was also that there's a lot more of this dystopia kind of stuff than there is utopia things out there to it vastly share.

KSR

Right.

Joel McKinnon

So have we kind of unwittingly, already, in our culture, prompted AI to be dystopic because that's what it knows from us?

KSR

Absolutely, yeah, sure, it's almost Shakespeare to hold a mirror up to nature. The AI is programmed very simply and basically at this point, it could get more sophisticated later. But right now it's going into a vast database of human stories and sentences that are already out there. Once it gets a prompt, it goes into that file and is just doing the simplest kind of, trolling through the data to find similar sounding things. And so, of course, yes, it's finding 1,000 dystopias for any utopia. I would reckon the ratio at approximately 1,000 to 1, maybe 100 to 1. But I don't know.

Because I write utopian fiction and see it so seldomly, I think it might be true that it's 1,000 to 1. And the AI responses, when you ask them, "Well, tell us a story about what you want and what you're going to do." Then the AI goes out and looks at artificial intelligence in essays, in warning editorials, in science fiction stories and says, "Well, I want to take over the world and blow it up." That's what it's been trained to want. It doesn't want it. It's not guessing, it's merely doing a file search and compiling very quickly out of the evidence a weird amalgamation.

It's not quite summarization, it's not thinking at that level, although it is impressive the way it comes up with a gooey amalgam of all the other data that it's got that roughly approximates the lowest common denominator or the averaging of all the other sentences that it's seen. I am impressed. I also want to point out that the Turing test is a very low bar. It always has been. We're fooled even already by our talking computers into thinking that they're thinking and that they're human a little bit, even when we know better. But a really good one is going to come along soon.

Next iteration of these, they'll pass the Turing test for a while and then they'll give themselves away, presumably. I don't know. I've been interested in that for years. I've been writing science fiction stories about it. And yet, my AIs have always been interesting, quirky characters. And

then you have to think, "Wait, could a computer think that up?" They're almost always named Pauline. We've spoke before about my Franks. All of my pseudo-sentience computers are named Pauline, which is a character in one of Robert Browning's poems, a guiding spirit kind of thing. Well, there's hardly any.

Joel

Was the "Aurora" ship supposed to be named Pauline originally?

KSR

Well, someone, yes, it was kind of a gesture to my own habits, but then I didn't want to securize it. I decided it was best that it thought of itself as the ship, because it is the ship, the body of the ship, the mind of the ship, et cetera. So Pauline was just ... Devi says one night, "I'll call you Pauline, but she never does again." Something like that. Just as a kind of gesture for my common reader to look for signs like that and enjoy jokes like that. But as to these computers, these AI, as they get better and better, they will be able to sound more and more like us, but they will make odd mistakes because they're repeating to us our own stories that have been amalgamated into one that is a least common denominator type.

But it can go off the rails. That computer that suddenly started to say, "Well, you don't love your wife, you love me and I love you." That is a story out of Lester Del Rey and Isaac Asimov. This is the 1940s computer story where the robot, the robot wife. Very smart.

Joel

That's right, I remember.

KSR

So the AI is going down a rabbit hole of one potential strand of stories. He's a lot more like it and creates it itself. Same with the nuclear codes given to a terrorist. That must be one of the more common stories in the world that it saw. And it has no judgment. It's only a mirror up to nature. It's showing us what we think in a rather degraded and simplistic form. And when it goes down these rabbit holes, it's not shocking, it's predictable. I was going to say Iain Banks's talking computers in his Culture series, "My Computers," Charlie Stross, Charles Stross's computers, occasionally. The British science fiction writers are much more positive about this, and they're somewhat because of Banks. Ken McLeod, very interesting computer minds. Paul McAuley. It goes on and on. In Iain MacDonald. These are British science fiction writers who have a much broader sense of the interesting possibilities of AI thinking.

And so, I would suppose that if you told ChatGPT, "Make your answers entirely based on Interzone magazine and don't include Analog, Asimov, or F and SF," you might get a different set of responses out of a sort of national bias of British SF versus American SF. It would be an experiment to run, and I bet people will run it someday.

Joel McKinnon

Yeah, I'd actually want to do the opposite and use the as much Asimov as I could. Getting back to that ratio you were discussing of dystopia, do you see that as like a problem? Do we need to push that ratio smaller or is this not ... I guess what I'm concerned about is. All the horrible things that you hear about on the internet now, and a lot of them are really happening, like Ukraine, and pandemics, Turkey, earthquakes and things like that. There's this growing sense of dread that is popped in a lot of people's minds and it seems like that ratio would be likely to grow rather than shrink to get more dystopic.

KSR

Well, but this is ... yes, I see what you're saying.

Joel McKinnon

The idea of the "aspiring to a positive future, manifesting a positive future." It is in trouble if that's the way it works, if we imagine we're heading for catastrophe and everybody's just giving up and waiting for it to come versus imagining the possibility of solving these problems and glorious solarpunk future. We seem to be going the wrong direction to change it.

KSR

Well, it's dialectical and art reflects the society that's creating it. There's a sense of dread, there's a sense of anxiety and angst and helplessness that leads to hopelessness. And this is somewhat of the 80s. Cyberpunk is a reaction to Reagan getting elected, the Reagan-Thatcher counterrevolution, the rise of neoliberalism, the thrashing of government power and Social Security by the market and by the rich. This was registered by dystopian stirring that said, "Give up film noir, find your corner on the mean streets and try to survive," this kind of 1947 view of reality as a retreat from the utopian possibilities of the 60s where everything was blowing up and history could have gone well.

And there was this flash of utopian energy that got crushed by the Reagan-Thatcher counterrevolution. And then science fiction follows. So to a certain extent, your fiction follows the society rather than leads it. But it is dialectical because if you create a feedback mechanism where all the stories about the future are dire, then you are concluding, though the future is going to be dire because that's what everybody says. So this is one thing that's been tagged as "instrumental reason" or "capitalist realism." This idea that it's easier to imagine the end of the world than the end of capitalism, that capitalism is somehow massively entrenched, even though it's falling apart right in front of our eyes.

And so that double feeling that we got nothing but capitalist reality and we can't get out of it, and it's tearing the world apart and creating massive inequality, therefore we are doomed. The syllogism is wrong because the system of capitalism is just a system of laws, and we change our laws all the time. And there are social democracies. There was the New Deal, there are social safety nets. There are ways in which the world is working really well. Like, you fly to India, you turn on your cell phone, it works, and you can call back home.

Well, this is not a flatly technological achievement, it's a social achievement. It is a utopian achievement. But we regard it as just casual background of the technology. And indeed, technologies can be used. You can have it seized, and then it's a surveillance state. Then it's the big five internet companies that are shoving advertising in your face all the time and you feel helpless to resist it, and yet, you can just walk outdoors and turn your screen off and suddenly you're free of all that crap. So, the sense of entrapment is semi-concocted by the stories that we tell each other about what's possible in the future.

So, we need many more utopias. We need solarpunk. We need hopepunk. They have chosen stupid names. Punk is exactly the mark of disaffection from civil society, from real work of saying, "I give up, I check out, I'm going to get stoned and play bad music to each other." So when you say hopepunk, it comes from cyberpunk, really. Gardner Joy did us no favor there, although he caught something real. But so what I say to these youngsters doing solarpunk is change your name. You should be calling yourself "utopian science fiction." You should be calling yourself "solar hopeful fiction."

This punk adjective is a marketing device out of older science fiction and should be dead as a doornail. Well, they said, "Grandpa Stan, he's 70, he is so ancient. And we're stuck with it anyway because they are stuck in

a marketing system they didn't invent that they're trying to succeed in." So I give him shit about it. But I also give them full credit for trying to write utopian fiction when the marketplace usually says, "But isn't that going to be boring? Oh my gosh, if people solve their problems, isn't that boring? And isn't it more interesting when things blow up and everybody's crawling around trying to dodge zombies? That's more interesting."

Well, no, people are still reading "The Dispossessed." People are not reading whatever was dystopian in 1974 when she published "The Dispossessed." There's something more interesting about huge problems getting solved by heroic efforts than tiny problems being failed at by tiny characters. So I'll speak for utopian fiction with the full-throated attack mode, kind of angry optimism saying, "Damn it, it's stupid to do dystopia at this point. You are a fool to do it. You ought to gain some courage. Stick your courage. That can't be what Hamlet says. To the sticking place. Tack your courage to the sticking place and do something bold," which is to tell a story of problems being solved.

We need those stories. They will help people mentally to cope with all the problems we have.

This takes me back to an occasion 20 years ago where you and I attended a dinner that James Cameron was at and I asked a question of him when he was presenting his film. He was talking about doing a movie about Mars, I think, at the time, right. And I said, "Is this going to be like the typical Mars movie where everything blows up and they're in big trouble or have things actually work for once?" And he smacked me down so well, he just said, "Oh no, in my movie everything is going to go exactly right and it's going to completely bomb box office." And I felt like a tiny ... I wanted crawl into a hole. I've always thought that was such a dumb question and then, lately I've been thinking back and maybe that wasn't such a dumb question.

Part of his answer wasn't completely a put-down either. He was pointing out the problem that you need drama and conflict. But he already had that with Cameron. I mean, at that point he had the option on "Red Mars." And the very first time we met, which was at an earlier Mars Society meeting in Boulder, Colorado, thanks to Bob Zubrin, who did great things with all that stuff. I was talking with Cameron about this and he said, "Oh, gosh, very sorry about that option that we took on 'Red Mars'. I'm never going to make 'Red Mars' and I'm going to give you that option right back because I have my own Mars story to tell and my people auctioned 'Red Mars' while I was finishing 'Titanic' and I never really noticed."

Wonderful novel, not my story, I like to write my own stories. And he was completely upfront and straightforward. I was disappointed, but also admiring his honesty. And indeed he gave the option back. And he also told me as I left, he said, "My lawyers kicked ass on your lawyers and I could have kept 'Red Mars' forever for a dime because the contract was so against you. But I'm waiving all that. I'm giving you the book back anyway, but you should check into your lawyers." I went back to my literary agent. I told him that story.

He looked into it, fired his Hollywood contacts, started his own Hollywood agency himself so he could control what was going on out there. So Cameron was in fact a huge help, not just to me, but to my literary agent and the guy he hired in Hollywood who's still my media agent now. And I liked Cameron's quick wit, his good nature, his knowledge of science fiction, both literary and movie, was comprehensive. And here's what I think happened with his Mars story, as he conceived at the time, turned into "Avatar." He decided he needed a planet more interesting than Mars.

The more he looked at it, the more he thought, "I'd rather have a jungle planet, let's go there instead," et cetera. And so he never will do a Mars story because when he described the plot of his Mars story to me, it was really "The Abyss" done over again. As he described plot points, I realized

that he was still irritated that "The Abyss" had not blown the world away and he had a story to tell there that the studio had somewhat screwed up and he was going to go again because he's a very headstrong artist.

So I'm saying it like I feel it. I like James Cameron. I like his movies. I think he's been a force for good. And the "Avatar" movies are kind of utopian. Like, "Biospheres are beautiful, don't ruin them." That's his message.

Yeah, so he has succeeded.

Joel McKinnon

The more I think about the "Mars" trilogy and my romanticism about it, and dearly wanting it to be true someday, but not in my lifetime, obviously, I'm thinking it would be great to turn that trilogy into, like a series or something. I just heard about them making another version of "The Lord of the Rings" and but come on! Like there's other stories out there. But if you could take the "Mars" trilogy but set it several hundred years in the future after we had gone through the long emergency and set that as kind of an aspiration for humanity, if we can figure that out and solve these immediate problems and stabilize the situation on Earth, then we can do these grand adventures that it's probably not the right time to do now.

KSR

Well, I like that very much. I want that myself. I think that I'm not ready to regard the "Mars" trilogy as fantasy or as category error. I think you don't even have to go several hundred years out. If we solve our problems, the solving is going to be abrupt on a historical scale because the emergency is still present. If we solve it, the next 30 years are crucial. And if we solve the next 30 years as best we can, the 100 years after that is going to be really remarkable. We're going to get into balance with the biosphere, healthy biosphere, equality amongst humans.

Mars sits there as a potential guard, and I still think terraforming ... like, I compressed it in order to get into the lifetime of my very long-lived main characters. It was a literary device. Say it takes 10,000 years instead of 200 years. Big deal. It's still worth doing. It would be a grand project. So I do not want to renounce the terraformation of Mars as a human project. It's just that it is off the table unless we've solved Earth first, and then it becomes super interesting.

Joel McKinnon

We have to take a long view and we have to think beyond our own lifetimes. Beyond the lifetimes, at least to consider the lifetimes of our children would be a step in the right direction. So we didn't talk about your latest book, "High Sierra." One of the reasons I haven't talked about it is that I haven't read it yet. And I have started it and I can't wait. I was delighted. But that there are actually maps in it. I love books with good maps and they are good maps. I have geology background, so I love that there's a lot of geology discussed in it.

And I also love the High Sierra, so it's going to change the way I look at things when I get up there.

Well, I appreciate that.

Yeah, what prompted you to write this? It seems pretty obvious, but do you want to talk about your unique style of doing backpacking? Not like everybody who takes 100 pounds on their back.

KSR

Well, it isn't unique, but I am one of those who they call themselves "ultralight." And certainly the people who are hiking the Pacific Crest Trail and trying to go from Mexico to Canada in a single season, which entails like a marathon a day, every day, for four months of walking up and down on on steep trails often. So that's a tough assignment. And their ounces matter, grams matter, and whole industry has sprung up, our little cottage industries to serve that crowd and as a casual backpacker, getting older. And also, my mountain guru friend was a leader in this movement, way ahead of the rest of the pack, and that he started working on these issues in the 80s.

Well, Ray Jardine was an early pioneer that my friend Terry read and studied and then started making our gear for us. So I've been light for decades, and ultralight recently with these new materials and new companies making stuff that is better than ever and lighter than ever. So the combination is quite glorious as you age out. And to have a backpack go from something like 40 pounds in our youth to something like 15 pounds in our old age is a blessing indeed. So, yeah, I do the ultralight thing. I I love the gear. I have a chapter in the book "Gear Talk," and I tried to reduce that because you can become such a maniac for gear talk.

It could take over many more pages than it really deserves in the larger scheme of things. And also always thinking of the general reader. If somebody were picking up this book that never backpacked, would they still find it interesting? So I tried to keep that reader in mind as well as the people who already know everything that's in the book anyway. So there was a kind of an audience problem with the "High Sierra," but it's partly memoir. I tell my story to the extent that I want to. I won't tell any more than that because I don't have anything else interesting to say.

But I've had some Sierra adventures and good friends up there in good times and then, like you said, some geology, just enough to try to explain why the Sierras are so great compared to even the other mountain ranges that I've seen. And a little bit of history. And like I say at the start of the book, some people, they go up in the Sierras when they're young. They fall in love with the place. They tweak their lives to go back up as often as they can. Some of them become rangers or whatever, and others just do everything they can in the lowlands to make sure they've carved a whole lot of Sierra time out.

And so I wrote about several of those characters from, say, the 1860s, including John Muir, for sure, but also Mary Austin and the Sierra Club crowd, and some famous people who are Sierra people. I'd tell their stories. So it's got a miscellaneous character, like an anthology of different genres that much resembles "The Ministry for the Future," my most recent novel. And I'm probably going to use that format again for a similar nonfiction book about Antarctica, where I'll tell about my Antarctic adventures and the geology and the glaciology and can we indeed stop the glaciers from sliding into the sea and the worst journey in the world.

Little history, the famous characters. So the format is serving me well for kind of spreading out and creating a structure for me to put a whole bunch of different elements into a story without a whole lot of time spent on transitions. I just make a chapter break, start up a new topic, and it's working pretty well.

Joel McKinnon

Do you get, like, philosophical, as you often do up in the High Sierra, or when you're camping and you just have time sitting around a mountain lake and ponder the meaning of life?

KSR

Well, this was probably more a feature of when we were young than when we get older. There's a constant source of wonder and awe in seeing the night sky from 11,000 feet above sea level and then lying out there at night, sleeping without a tent, looking up at the stars and at the Milky Way and at the meteor showers. It is mind boggling and beautiful and sublime, and it induces a set of what I would call religious feelings. But we don't actually talk about it a whole lot.

Joel McKinnon

It's kind of stuff you can't talk about. It's ineffable.

KSR

We tried when we were young, but it was always ...

Joel

Comes out as, like a stoner conversation.

KSR

Yeah, exactly.

Joel McKinnon

Okay, well, I think I could talk with you for several hours. I had lots of things in mind, but we're running out of time, so I'm just very thankful that we had the time to do this. It took us a few had to cross a few storms.

KSR

Yes.

Joel McKinnon

So thank you so much for being on the podcast.

KSR

Well, my pleasure, Joel. And I want to say it's been a pleasure for this whole working up on, like, 25 years of knowing each other through the Mars Society and all of its projects, and it's been a pleasure all along. So I'm glad you're doing this podcast and gave us a chance to talk again, so we'll do it again.

Joel

Well, what can I say? Dream guest. And he certainly didn't disappoint. This is a good time to relay a little anecdote of the early days of getting to know Kim Stanley Robinson — a little over two decades ago. We talked a little about that James Cameron dinner fundraiser for the Mars Society in the spring of 2001. As the event coordinator, I had a free ticket, which was a big deal, as the price of admission for the dinner was $500. I also was given a second ticket to bring a guest of my choosing. The romantics would probably say I should have brought my wife, but she really wasn't into science fiction or Mars.

She saw it as my thing. So I invited Kim Stanley Robinson, and he accepted. I got to sit next to my favorite living sci-fi writer, along with Frank Drake of the famous Drake equation and his wife and a couple of other notable figures in the Mars movement. That's also the occasion I mentioned earlier on the podcast that brought Elon Musk into the orbit of the Mars Society and some considerable funding at his behest. It was an amazing night, and I was trying my hand at the time as an aspiring science journalist writing for an ezine called "New Mars," now long defunct.

I'd interviewed Chris McKay, an astrobiologist from NASA, sci-fi writer Gregory Benford, and covered a couple of other events, and written a few essays. I decided it would be a great feather in my cap to interview the author of the most well-known story set on a future Mars. So I asked Stan if he would let me do that, and he readily agreed. A few weeks later,

I accepted an invitation to Stan's home in Davis, California, and spent several hours in his company hearing about his new passion for ultralight backpacking, visiting his impressive home library, having lunch with him at a nearby restaurant, and basically having my mind blown by the steady stream of incredible ideas pouring out from his massive intellect.

I had all the material to write a masterpiece of a profile for New Mars. My career as a journalist would be launched like a rocket to the red planet itself. Heaven. Then something weird happened. Maybe it was imposter syndrome, maybe just a sustained panic attack. I don't know. But I never wrote that article. I soon thereafter got back into software development and gave up on the dream of being a science journalist altogether. That failure to consummate the KSR interview was pivotal to the process of a reversal that affected me for the next two decades. This interview for Seldon Crisis, however, feels like redemption. I'm not saying it's Pulitzer-worthy or whatever prize there should be for a great podcast interview. There are much better people at this than me. I'm a humble rookie at this, still trying to figure out how to do it right. But this interview will be published right here on Seldon Crisis, and that feels absolutely awesome.

So what comes next? Will I return to the next chapter of "Foundation"? I hope so. That is still my plan, and there really aren't any big name guests I have in mind who can top this one. I'll likely return to rereading "Foundation's Edge" and start scripting it out, but it still might be a little while.

Please be patient while I try to get back in the groove. In the meantime, there are a lot of ideas I've had that haven't made it into written form, and I would love to share some of them with you. There may also be a KSR-related follow-up piece, because Stan gave me permission to read an excerpt from his novel "Aurora" that I think you should really enjoy. Stay tuned to seldoncrisis.net. Get in touch with me at joel@seldoncrisis.net or

my Twitter or Mastodon accounts linked in the show notes. I also expect there to be a lot of great links in this one, due to all the excellent resources Stan shared in our conversation.

If you feel like writing a review for the podcast, that is always deeply appreciated, there's a handy tool right on the website to do that. And with that, I look forward to our next engagement here on Seldon Crisis.

[Closing theme music.]