AI and You

Transcript

Peter: Welcome to a very special episode, it is episode number 52, and that means it is the one-year anniversary of *AI and You*! And we are starting now right in the interview with my guests, who I'll introduce very shortly. What we are doing is a special episode about artificial intelligence in fiction: books, TV, movies. And we're not going to try and be complete, we don't have the kind of time for that, we're not going to try and address it in strictly chronological order because we would have to start with the ancient Greeks and there would be Galatea and Talos… and we would be not out of the 19th century by the time the time was up. This is supposed to be fun, we are not charging for education here—and who is we? I have with me two dear friends that we go way back on; Jim Gifford and Dr. Robert James, and we were partners in crime back in 2007 for producing a very special unique convention for the centennial of the science fiction author Robert Heinlein, who will be talked about later on in this show of course! And the work that went into that was just staggering, Jim produced the graphics, he was underwriting the event, he produced a fantastic program book, he signed all the contracts, a huge amount of work. Dr. Robert James was our point person for a huge number of the tracks; he was constantly running around from one session to another, leading a panel, participating in a panel… And we had so many tracks going simultaneously and what made that convention unique was that, half of them were non-fiction, they were about the space industry, we had the administrator of NASA, we had a senior administrator from the FAA, we had the heads of just about every private space company there, and that was one of the unique sort of crossovers that Robert Heinlein represented and made possible for us to do. It was a very special event: one of our keynote speakers was Brian Binnie, who was the pilot of the first commercial spaceship, just an incredible time, and these gentlemen are here with me now. So, I want to ask them to introduce themselves and tell you what they want you to know about who they are and what they've done, andwhat's important to them. Jim, why don't we start with you?

Jim: Oh, look at me. Well, Peter already did a pretty good job; we have been a trio for a long time, mostly around the Heinlein centennial in 2007. We've stayed in touch since; we have a lot of common interests besides Robert Heinlein. I'm a writer, editor, publisher and general commentator on radical consumer economics, and I share a lot of Peter's interests; I helped him publish [his] first book on AI and I have a long background in both classic and fairly recent science fiction which is probably what I'm doing here.

Peter: Thanks. RJ?

Robert: Well, I'm a teacher, I have a PhD from UCLA, and I teach predominantly in an inner-city high school and I've taught English and history and government and science fiction and creative writing and a number of other things. I'm also a writer predominantly non-fiction, quite a few things about Robert Heinlein with my dear departed best friend and sometime co-author, Bill Patterson. He and I wrote most of the introductions to the Virginia edition of Robert Heinlein. And in recent years I've been doing a revisionist history of the academy awards, basically going through year by year by year, trying to argue and decide on which movies and which performances and such, should have won that year in each and every category and that's called *Who Won? An Irreverent Look At the Oscars* and I've been desperately trying to finish the fifth book, the last few years but life got in the way but it's getting out of the way. Now I'm almost done with it. So that's where I'm coming from.

Peter: And we'll give a shout out to those books and Jim's as well in the show notes and at the end of the show. And thanks for mentioning there Bill Patterson, the late biographer of Robert Heinlein and one of our co-conspirators at the Heinlein Centennial in the core group there. So, let's talk about artificial intelligence in fiction; and of course there are so many places that this shows up; where should we start? But I want to use as a framing device here that it should be where it has shaped our understanding of that field. So, I think one of the early ones that did that - I was thinking about this earlier - was Rossum's Universal Robots, the play that gave us the term and I think it was Karel Čapek - gave us the term "robot," and it came out in 1921 because before that - I was thinking, well look at Jules Verne and H.G. Wells, they invented just about every science fiction trope there is; and yet they didn't cover AI or robots but they preceded *RUR*. So what do you think, why was there that gap there in that Victorian fiction when Wells and Verne did everything else that didn't cover any kind of artificial cognition?

Robert: That's a very good question and certainly you know Rossum's Universal Robots ('RUR') was not just read by science fiction fans because of the community; there wasn't a science fiction community in 1920, 1921, there certainly wasn't a fan base dedicated to it the way there was just 10 years later under Hugo Gernsback. But, it was just a phenomenon and everybody was fascinated by that but it's a social argument novel as much as anything, it's been quite a few years since I've read it and I've never seen your performance of it. But, it was quite a phenomenon in the '20s. But I have to wonder if World War I, and the emphasis on technology that had been developing, obviously over the previous century with the industrial revolution… but World War I really brought all of that technology home to people and opened up their minds in the sense of breaking with the past and trying different things and trying new things in ways that perhaps it happened -- maybe Wells and Verne just didn't think about it, although certainly were automaton figures about: the chess players and the toys and things like this. But the idea that one might have one that was autonomous and capable of thinking is really quite a breakthrough for Karel Čapek.

Peter: And if it hadn't been for him we wouldn't have the word 'robot' and that's really significant. Next up in that genre has got to be *Metropolis*, right? When did that come out?

Jim: '27.

Peter: Okay, so it had to have been heavily influenced. What did that movie do for our understanding of robots? Was that like the first time we had that vision of what that might look like?

Jim: I would say so. I can't think of any, I mean, even the Gernsback - and that was well into the rise of scientifiction, the earliest and so forth and I can't think of any robot, a significant robot story, that predated that I'm not really sure where Lang got the idea other than from the... I know it was written, I believe the story was written by... I can't remember her name right off hand.

Robert: Thea von Harbou his wife and future Nazi.

Jim: Yes, right. Thank you. How could I forget that? But I don't know where the idea came from at that time but I think that the Maria figure in Metropolis is probably one of the genesis figures.

Robert: Definitely! Metropolis was a worldwide hit and it certainly had an enormous influence on the development of a science fiction fan base and I hope you guys ever met Forrey Ackerman but that was his favorite movie and he saw it in a theater, well more than a hundred times and he spoke quite clearly about and the imagery of that robot is the image that most people for many decades that was their first introduction to a robot. But I think that film, which is more about the mechanization of human beings brought on by the industrial revolution and by automation in the way in which the working classes were being turned into pieces of the machine and this mad scientist creates an artificial intelligence that can further manipulate and you know wreck the humans who are trying to establish. If you've ever seen the uncut or actually better way to put that, the more recently about 10 years ago, they finally found a lot of the missing footage, it's a really awkward kind of construction between the head and the heart and the way that they're trying to figure it out and the parts of the film that we remember aren't the parts that we lost because the parts that we lost, quite a few of them are really difficult to watch and take seriously. But, the image of the robot and the creation scene which is obviously playing off of Frankenstein and then influencing the James Whale Frankenstein just a few years later, it's one of those moments that radically remakes our vision of what's possible and that image has been seared into our brains for decades, if not, a century now almost.

Jim: It's a stunning visual, I mean, it's a stunning visual now and that Lang pulled it off in 1927, every time I see it, it's absolutely staggering.

Peter: We see it so much now. Am I thinking that's because a copyright expired, so that we can air clips of it; or not?

Jim: It's pretty close to the copyright being expired, if it hasn't already in Europe, I'm not certain what their copyright law is.

Peter: So then comes along Asimov around this time, I believe writing about robots and…

Robert: Late 30s, early 40s.

Peter: Okay. I don't know how much there might have been in between but that's certainly one of the next things. So, let's just jump to Asimov and he said that his reason for writing about robots - and the short story series, *I, Robot* is the seminal work here - he said that his reason for doing was that robots had been portrayed in the pulp fiction up until that point as pretty straightforward aggressors that were just there to carry off helpless females and do unspecified things with them. So, he wanted to something where you could see that they, having been created by us, we might be in creating them to be useful and to be friendly and then he evolved this whole ecosystem around how they might work and how the ethics of them might work that is still quoted all over the place today in fact probably more than in the last 20 years. And what do you think the influences on him were and the extent of the footprint that he's left with those stories.

Jim: I'd say that he defined our modern interpretation of robots. I mean his stories are… he was not the best workmanship he was not the best writer in a storytelling sense, he tended to plot a bit and if you notice most of his stories are told - it's three people sitting around a table talking about something that happened, the action is almost always off screen but with the Three Laws of Robotics and everything that they represent and the way he presented robots to us, I'd say he probably did more to define the modern idea of robot, at least in fiction than just about anyone else.

Robert: Yeah. You can find the Asimov's robotics laws, that they're in Star Trek with Data, they're also… I mean *Big Bang Theory* did a whole episode organized around that whether or not Sheldon was actually a robot and they went through the three laws of robotics but Asimov himself, you know, certainly he's reacting against the pop imagery of a robot as a dangerous creature. Think of the Flash Gordon series of the late 30s that were done before the robots are attacking, you know, Flash Gordon and such. But, Eando Binder, the brothers had created all series about robots called and that's where the title *I, Robot* came from and Asimov was annoyed that his publisher insisted on using that because that was not his title but they're logic puzzles and that's what really Asimov loved to play with logic. And you're right, he's, honestly, I don't think his fiction is aged all that well much of it, the dialogue in particular is so corny and difficult to take seriously but his gifts as a non-fiction writer, of course! Are unparalleled, I think he's still the best non-fiction writer, we've ever had. But, those fiction stories always a logic puzzle, always having to think your way through it, the rules are set, why he also gravitated to murder mysteries, which have a very set specific set of rules that he could follow as well. But I don't know anybody else whose image of a robot other than *Metropolis* and the female robot that's come even close to Asimov's influence.

Peter: And also now we're in the golden age of science fiction and we get some other stories about computers, I think these are probably post-war though. But, there are Arthur C. Clarke's

Nine Billion Names of God, the computer that's conscripted to enumerate all the possible names of God according to one of the eastern religions and discovers that when it gets through them all, that means the universe no longer has a purpose and then there is a short story, a very short story about the computer that was constructed to answer the question, "Is there a God?" and when that was put to it, replied with a thunderclap as it fused, its power circuits closed, so they couldn't be interrupted there is now and I recall that exactly that happened in a *Star Trek* episode, *The Ultimate Computer* but we'll get to that later. But, now we're operating off the understanding of, there are computers in the world, so we can have intelligence that not necessarily walking around on two legs.

Robert: I want to point out one more story to you. That is really, I think is even more critical here, it's by Murray Leinster and he's called a lot, *A Logic Named Joe*, if you've never read it, really shows you, almost exactly in many ways how the internet was going to be a total access to all the world's information and a computer - in the home - a very large one down in the basement but it is a home computer, this is in the late 40s early 50s, long before these things were even thought possible, he;s the only one that suggested the computer have ever been small enough to fit in your house, much less in your pocket. And it's the Internet and he's doing searches and all of a sudden this one logic named Joe starts to break the rules and pass that information without following the rules - and I haven't read it in many years but I remember being blown away by what a predictor of the internet is but, he definitely develops intelligence, this is really the first time other than, maybe one of Asimov's stories where the robot isn't just following directions, the robot seems to be following a desire and a will of its own. And at the end of the story, I've often thought that end of the story predates Robert Heinlein and *The Moon is a Harsh Mistress*, and the supercomputer Mike, because at the end of the story the technician wants to be able to find Joe again, because Joe has been shut down, he misses that the same way that Manny misses Mike at the end of *The Moon is a Harsh Mistress*.

Jim: Well, that of course, that was the original title; *A Computer Named Joe*, was the original title from *The Moon is a Harsh Mistress.*

Jim: Not that I'm aware of, I don't know.

Robert: Yeah. That's one of, you not to get too much aside that's one of the few ones he wrote twice. He wrote the most of the story out with the computer, was named Joe HAMTRAMC and it had a Polish background and he gets three-quarters of the way through him and starts to evolve into the ending we know. Now he went back and rewrote the whole thing from the beginning, it's the original working idea with a Computer Named Joe.

Robert: Interesting! Yeah. You would know you're the expert on all those details.

Jim: Yeah. Not much else.

Peter: I wanted to know to what extent these stories reflected, not just the culture, but the history of the time, certainly post-war and we'll get into this in a moment, there was a lot of

Cold War-inspired themes. Was there, anything perhaps during the war or pre-war that was shaped by what was dominant in our western culture at the time?

Robert: I can't really recall other than using Heinlein training in the kind of analog computer before there were and then during the… obviously computers were developed to be able to break codes and calculate artillery things and so forth and so on. But, I don't think the average American or the average European was really aware other than kind of the vague idea that there were these things called computers and certainly the giant computers that could actually perform mathematical functions and were developed with MANIAC and ENIAC and all that stuff in the 50s. I think it took time for that to filter down in there but science fiction writers typically somebody, like Murray Leinster who really was a technological inventor himself, he did a lot of work on rear screen projection for the movies for example. I think that it really does take time, it's really the late 50s, early 60s, and in late 60s, especially with like HAL in *2001* and *Colossus, the Forbin Project* and of course Mike in *The Moon is a Harsh Mistress*, where the idea of a massive sentient computer becomes much more understandable but even then those things were a surprise to readers and viewers, most of them never even thought about that sort of thing before.

Peter: And a lot of this is based on extrapolating the trends at the time which were computers getting bigger, they were the size of the room. So, the story said; well, we will build one the size of a city block that will be much more powerful, and it completely missed as you say except for Murray Leinster the trend towards miniaturization which was of course necessary. But, now looking at the post-war and the Cold War, that had a huge impact on movies like *Dr. Strangelove* and *Colossus, the Forbin Project* and *War Games*. *Colossus, the Forbin Project* was based on a book and if you're dissatisfied by the lady-and-the-tiger-type ending as I was, it's because that's where the book ends and the book ends there because there's another book after that goes off in a completely different direction that's really…

Robert: Two more books actually.

Peter: Which were not to my mind nearly as filmable and so that's why it ended but the theme of this, if for anyone who hasn't seen *Colossus, the Forbin Project,* is that the US develops a supercomputer in a NORAD-like facility in a mountain. it's got its own power supply, it's able to defend itself, its purpose is to defend the United States against the Soviet Union and control the nuclear arsenal even if no one is left alive in the United States which also is what the one in the doomsday machine and for the computer in *Dr. Strangelove* was doing. But this one becomes conscious and establishes contact with the equivalent supercomputer on the Russian side and they decide what we can do a better job of running the planet than you guys and it threatens them quite graphically and demonstrably until people start doing what it says. How was that received? Am I just thinking about it because I'm a science fiction fan or did it have any impact beyond science fiction fans?

Jim: I can't think of anyone outside of science fiction, who's really ever mentioned the movie or the book. I don't know if it ever leaked out into a more general understanding or more general and it certainly didn't hit the level of *Frankenstein* or M*etropolis* or anything.

Robert: It's also *Colossus, the Forbin Project* was made in the wake of *2001, a Space Odyssey* which I think is far more influential film. I think they said; oh that was a great evil super computer, let's do another one and they found this little book that they get cheap and they cast nobody in the film who had almost any kind of reputation and it's filmed very cheaply, it's just get rich quick as you can off another, a one of Hollywood endless Me Too! projects.

Peter: Alright, so let's go there, *2001 A Space Odyssey*, HAL 9000, which is a pure AI, has no face, it has the most mechanistic voice, you can construct, although people have often said that it's one of the most human characters in the story - because of the way everyone else acts, not the acting but the way the characters are; and yet it's actually a side plot, isn't it? You could do without that. It seems that - isn't the purpose of HAL to make sure that only one person makes it to the Star Gate?

Robert: Interesting argument!

Jim: Yeah. That's, I hadn't thought of it that way.

Robert: I definitely think you're right Peter in the sense that HAL is the most interesting character in that whole film because he's the only one that seems to have any human qualities at all. People have talked about Stanley Kubrick's movie being very cold, and they quite often are, they're very intellectual, they're very cold. Arthur C. Clarke has much the same problem in his own stories. I mean his favorite character in *2010*, the sequel is HAL it really is, you know. Heinlein once famously wrote to somebody that basically Clarke couldn't give you anything other than a cardboard character and if he tried, he didn't really have a strong sense of how human beings were, it was his non-human characters that were much more interesting. But I think it's interesting in the late 60s, it's not just HAL - and I do want to speak some more about Hal in a minute but it seemed to me that there's this whole rash of books and films that show AIs like we had somehow reached a kind of black hole, impacting itself because not only do you have it in *2001*, you have it in *The Moon is a Harsh Mistress*. Although certainly HAL is, you know, a more insidious AI than Mike is, Mike is like having a big friendly puppy who can control the world because he has so much power, computing power and control over things but you've also got in *Star Trek*, *The Ultimate Compute*r which can run anything and threatens to destroy the Enterprise. There is this sense in the late '60s of computers running amok, that they're out of our control, that the automation cycle will not only take away your job, ultimately it will take away your humanity, will take away your autonomy, and not too long after that, you get *Cyborg* and the *Six-Million-Dollar Man*, that merging of technology and human that we haven't quite gotten to an AI, that can talk to a person, that's merged with him yet. But, that's certainly on, that's certainly coming in Marvel comics, nearly 70s with Deathlock, he has a computer that he speaks to quite regularly that's kind of an AI. But, I do think, it's just by the mid to late '60s, the

general fear of technology had replaced a lot of the trust and hope and belief and what it could become in the general mindset and you can see that in the New Wave science fiction writers, the '60s and '70s being much more pessimistic about the future of science fiction, much more pessimistic about the potential of the form to bring this upwards, much more questioning of the progress and so, there is this cultural divide in the '60s that I think these AIs, other than Robert Heinlein who probably saw that and said I'm going to give you a friendly AI because I think technology and progress is a wonderful thing. And it really strikes me that there is this kind of this impact point in the mid to late '60s where AI becomes a much more common trope all across the board in TV and film and in movies.

Peter: And I think there had to have been a tipping point; and I think it was around *2001*. I think up until that point you had to have a positive view of technology because it was what was going to win the space race, it was what was going to get us to the Moon, every kid had a model rocket, ray gun, knew how rockets worked, was gung-ho about the future, you look at Tomorrowland in Disneyland and it was all positive, you've got the Jetsons and so forth. Now somewhere around the time, we get to the Moon and had forgotten to set any larger goal, you get *2001* coming out and it starts to poke holes in that and say, "Well, what if it's not all roses?" and then I think we get into the question of, is this technology going in the right direction. What do you think Jim?

Jim: Well, in thinking about this discussion, I came up with, I think something we've kind of touched on several points, I think there's four types of AI, there's the AI, the computer, the robot who is evil by construction, there is the one who is built for one purpose but because they're maltreated or because they're superintelligent, they're like Forbin, they're like Colossus, they realize they're so superior they become evil. And then there's the ones that HAL was never evil how, HAL was doing his job, he was a very positive force in his light. It simply had horrible consequences for the astronauts. And then the fourth type is the Mikes, the Asimovian robots who are basically benevolent and never change. And actually there's one we skipped way back when in 1937 Jack Williamson wrote a story basically about robots who are, it's called *With Folded Hands* and these robots come along and they're going to make the world perfect for humanity and they do it by, basically putting them in kindergarten. I think there's a line in that where I think one of the characters says something like, "Well why don't you just give me a box of crayons?" and the guy says and the robot says would you like some? And basically they wrap humanity in cotton batting to protect it which is ultimately evil but it's not their intent. HAL again, HAL is never evil, he is a thing, Colossus turns evil… and if you go far enough back then basically yeah you go back to the flashboard and stuff they were all guilty. So, I think everything falls into one of those four categories.

Peter: We've mentioned *The Moon is a Harsh Mistress* several times here and we should go into more detail. Especially for anyone that's not read the book. Bob, do you want to introduce us to this? Imagine you're talking to people who are going, "What is he talking about, what's that book?"

Robert: Well, *The Moon is a Harsh Mistress* is a magnificent novel by Robert Heinlein, many people think of it as his last great masterpiece, although I think there are books you could make an argument for later on, particularly *Time Enough for Love* which I think is every bit as much a literary masterpiece as anything you ever wrote, it's certainly a major experiment in style and how you tell stories but you look at *The Moon is a Harsh Mistress*, it is very much in keeping with the New Wave, it's trying to create a stylistic innovation. It's told from the point of view of Manny, a computer repairman on the Moon and he is essentially in charge of taking care of the computer that runs all of the Moon's facilities. It makes sure that the air is being refreshed and make sure the launch is taking off and on time, and Manny becomes friends with this computer that he nicknames Mike after Mycroft Holmes, Sherlock Holmes' older brother. And essentially what you get is, Mike becomes sentient and then proceeds with Manny to help overthrow earth's control of the moon. So, there's a kind of lunar revolution mounted, *The Moon is a Harsh Mistress* is a replay of the American Revolution as well one of Jack Williamson's earliest books about the America, the birth of... oh god! I can't remember the title of it, early 1932 or 33 book he wrote with a co-writer that nobody remembers anymore either. But, *The Moon is a Harsh Mistress* I think is really occupying this crossroads between classic science fiction which is very much plot-oriented and very pro-progress and the New Wave where Heinlein is showing the youngsters, I can do stylistic innovation, I can do something interesting with the way I tell a story, better than you can, because I can combine it with all this other wonderful stuff from science fiction and I think it's really him trying to show the young guns that he can outdo them but Mike is one of his great creations of the character as is Manny.

Peter: So, Jim what do you want to add to the story of *The Moon is a Harsh Mistress*?

Jim: Not an awful lot in the vein of this. I have about 10 different conversations on that book but that Mike is benevolent, remains benevolent, and something that I just thought about recently is the reason he disappears at the end of the book. He apparently goes into a coma, his personality vanishes, he could be said to have died, and the short coda to the book is Manny trying to get him to come back - and then Heinlein came back 20 years later and rescued him but that's another story. My interpretation that I just kind of came with is, he was so human that he realized all the horrible things he had done in the process of freeing the Moon and it was the moral crisis that drove him into a coma.

Peter: That's an interesting interpretation and very thought-provoking and Mike is an example and perhaps one of the first, if not the first example of emergent consciousness, a computer that was built not to be a free agent, but by virtue of becoming more and more complex evolved self-awareness and free will, it's something we saw not long after that a few years later in David Gerrold's *When Harlie Was One*, which we won't cover in detail here because he was on the show, a few episodes ago we talked at great length about that and then you had *The Adolescence of P-1*, a couple of years after that which was again in the same vein and then it happens in... I'm not sure how many other examples of computers becoming accidentally conscious.

Jim: Well, that would back to you, don't forget that, back to Clarke, did that. In a short story and I think '61 and it's really a bit of a more of a joke story, *Dial F for Frankenstein* and its three characters again three characters sitting at a table, talking about it and the global phone network has just gone live and they start talking about, well it has as many neuristors or neurons as a human brain and basically it turns into a giant electronic baby that wakes up and takes control of the world, which led to a horrible pun for an ending. But the concept was around, even significantly ahead of *The Moon is a Harsh Mistress*, the emergent consciousness…

Peter: And you say Frankenstein there in the title and these stories with this trope have got to owe a lot to Mary Shelley, right?

Robert: Of course! Science fiction owes a lot to Mary Shelley.

Peter: Yeah and didn't she write that because her husband said "Why don't you do something useful with your time?"

Robert: I haven't heard that version.

Jim: It was a contest, they were all stuck in some house in crappy weather and they all decided to write a story, basically you probably know, it's better than I do. What was the point of writing the story?

Robert: Basically they were trying to entertain each other by telling a ghost story of some kind that's right, *Dr. Polidori Creates a Vampire*, that's pretty much loosely based on Byron and Percy shelly, never wrote one at all and I've forgotten what Byron wrote but Mary Shelley of course created a masterpiece. Yeah. Even though try to get somebody 14 or 15 to read it these days and they'll fall asleep because it's really just a long dissertation on the concepts of good and evil and how we learn and what the morality of the creation is, the monster is not quite what we've been led to believe, it is, even with Robert de Niro trying to restore that version of it with Mary Shelley's Frankenstein but…

Robert: Fortunately James Whale brought us the good parts first.

Jim: Yes.

Peter: How did they handle that in the Boris Karloff version?

Jim: Left it all out.

But it was the Karloff film as big a contribution to cinema as the book was to literature?

Robert: Well, it along with *Dracula* launched the horror movie trend in the 30s and 40s but certainly our image of Frankenstein has been cemented by Boris Karloff that when we say Frankenstein, we think that's the Frankenstein monster. Who, in a kind of way, it's kind of a recreated intelligence because the brain is deposited in there and then brought back to life and

doesn't act the way that it was supposed to act. Which brings us back to this whole idea of AI that's meant to do one thing and then become something else, in the same way that you mentioned *Dr. Strangelove* earlier. *Dr. Strangelove*, there is a computer that is meant to protect us but ultimately it ends up destroying us because there's no way to stop it, it does more than it should have been allowed to do.

Peter: And now, with that movie, we're in the Cold War mentality where so many movies are pointing out the madness of the gamewe were playing of holding lighted matches over a pool of gasoline and so that brings us to *War Games* where we've got a computer that evolves the kind of consciousness and it like, *Colossus* is in charge of the nuclear arsenal. But now we've got perhaps some different tropes because we've got the children as a force because you get kids saving the world in some form or other in a lot of movies around that time. don't we?

Jim: There were a whole bunch of sort of high school science movies, my science project, *Weird Science*, which I remember fondly.

Robert: Every adolescent male does.

Jim: Yes. There's another one of that general stripe *My Science Project*, he created a time machine, that the one where he's dealing with some form of plutonium, that's going to explode if they don't do something or is that yet another movie, the same trope ran through about.

Robert: Yeah. There's a kid that's building a nuclear bomb in his backyard or something like that and there's a whole range of 'em. I haven't rewatched those, they're coming up in the next couple years of my research but lucky you. There's definitely a sense in *War Games* that this is a computer that is out of control but yet you still get that sense of each kind of a trial because his whole programming is based on the lost son of the inventor of that computer and you have that again, that playing with that idea of a computer that is doing more than it was meant to do.

Peter: There's a different effect here, a different trajectory, if we go back prior to the '60s, if we go back to things like *Forbidden Planet*, then at that time the AIs, the robots are there for us to figure out how to defeat or contain them. But in *War Games* the computer is there to give *us* a lesson for us to learn what we're doing to ourselves and how reckless we're being with holding the world to ransom through mutual assured destruction, right?

Robert: Definitely!

Jim: Well, the final scene where it's running through a scenario after scenario after scenario is, I mean it's not a great movie by any means but that's a very powerful scene at the end.

Peter: Right. It's there to say, Look: best computer in the world can't figure a way out of the hole, you've dug yourself into, that's your fault when with the rules the way you've set them up, you can't win.

Robert: Right. The computer teaches us what we should learn. It reminds me of that for some strange reason of the computers in *Star Trek* that they can talk to and tell to solve these problems and look for information and come back. They're useful servants, tut, one does not want them to be running the starship themselves that they should be useful servants and not any more than that.

Peter: That's exactly Spock's line in *The Ultimate Computer* which is not just a computer run amok and killing people, but it's there to evoke this fear and this question of what if computers take out jobs, because this one takes Captain Kirk's job. But, then eventually Spock says, "computers make wonderful servants, but, I would not wish one to be my master; a starship runs on loyalty to one man and nothing can replace it or him." and so this is going to split into two episodes. So, for the podcast, for right now, I'm going to say we're going to take a break. You, audience will hear us, come back next week. Hold that thought, and we'll be right back.

A note on that segment. We referenced Cyborg without saying what it was. That was the book that *The Six Million Dollar Man* TV show was based on. It was by Martin Caidin, it featured Steve Austin, a test pilot who got horribly injured, and… if you saw the pilot for the TV show, it followed the book reasonably well. The tech was more realistic in the book – in the book, Steve Austin couldn't see through the bionic eye, but he could take pictures with it, and he couldn't do things with his arm that would have resulted in crushing loads transferred to his spinal column, but the TV pilot did reproduce the book's depiction of the emotional turmoil of a man who would rather be dead than part machine. The TV show didn't spend long in that territory, though. And there were two or three sequels to the book, too, which make for fun, if dated, reading.

Listener Steven Flythe writes, "A wonderful example of early AI in films is the original *Superman* (1978) with Christopher Reeve. Because the producers couldn't afford to shoot Marlon Brando appearing in the fortress of solitude, viewers were rewarded with the gift of a disembodied head. Kal-El is taught twice via AI. First, on his voyage to Earth and the second time when he transitions from a young adult. An important tool is the "green" crystal which seems to possess the Kryptonian knowledge."

I agree, the Jor-El device is basically a reanimation of him through AI, and interestingly enough, we now have essentially exactly that capability available to us now. The Samsung Neon is a full-body avatar that came out at CES 2020 and is made by digitizing a real person but then animating it to answer a real-time question with voice synthesis and gesture animation. Microsoft, also, has patented a chatbot that would recreate the conversational style of a dead person. So I reckon we *already* have exactly the capability of the Jor-El AI.

Yes, this episode is lighter stuff, but it's still rich with opportunities for introspection. How we depict AI in fiction is a reflection of our fears and dreams, and you can extract that sort of insight out of it if you look deeply enough, the sort of thing that anthropologist Beth Singler in episodes 38 and 39 does.

Robert James' books: https://www.amazon.com/Robert-James/e/B00AAA73SW/ . Jim Gifford's books: http://nitrosyncretic.com/

As part of celebrating the one-year anniversary, I will give away a free copy of the audiobook version of my book, *Crisis of Control: How Artificial Superintelligences May Destroy or Save the Human Race*, to the sender of the first email I receive before June 21, 2021, at this address: audiobook@aiandyou.net.

Next week on *AI and You* we'll finish the AI in fiction panel discussion. Until then, remember: no matter how much computers learn how to do, it's how we come together as *humans* that matters.

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