

Is Science Fiction Science?

MICHAEL CRICHTON: The notion that every single thing we do is recorded, that every, not only every mouse click but every purchase, you know, that we can be tracked in every way, that there is no part of our lives, except maybe going to the bathroom, and that is soon to change, you know, where we can truly be alone and where we can say what we are doing is not available for observation. I actually think that 1984 came to pass.

SHOW OPEN

ROBERT L. KUHN: How is science fiction constrained by known science?

MICHAEL CRICHTON: It's fiction, it's not constrained.

ROBERT L. KUHN: Should it be?

MICHAEL CRICHTON: No, I don't think so. I mean, I think that there's something about whether or not it makes, eh, it makes sense whether it's internally consistent or whether it relates to contemporary reality in some fashion that's recognizable and that's more important than whether or not every bit of the physics really works right. I'm very troubled if something really can't possibly occur. I mind if there's theoretical running room, but if it's very clear that something really can't happen, can never happen, and is never going to happen, then that's a problem for me and, in general, I try and avoid that.

OCTAVIA BUTLER: That isn't a constraint, I think it's fantasy.

ROBERT L. KUHN: How would you differentiate science fiction from science fantasy?

OCTAVIA BUTLER: Fantasy, I think the only requirement is that it be internally consistent and science fiction, well, if you're going to use science, you should make some effort to use it intelligently, not necessarily correctly, but intelligently, you know, so that, if you're doing something odd, you are at least aware of it and justifying it.

ROBERT L. KUHN: Take telepathy, most scientists would say that doesn't exist, how, how do you deal with that?

OCTAVIA BUTLER: I had a whole series in which people were communicating that way and, I didn't care whether it was real or not. I guess I was looking at was how that kind of communication, how a deeper form of communication would affect and they're involved in, pretty much, a war because they understand each other far too well. So, with me, I wasn't using it as science, I was simply using it as a tool to take a look at the human condition.

Is Science Fiction Science?

ROBERT L. KUHN: Do you ever feel the compulsion to push science or to prod science or to predict science?

DAVID BRIN: Oh, sure, all of the above, maybe I feel a little bit more liberated because I write the hardcore science fiction, you know, about physics and stuff like that some of the time, so I feel at liberty to press the envelope in any direction I choose. Even if it's implausible, even if it's impossible. But I feel a compact with the reader to make it clear which kind of science fiction it is. We're taking a vacation from reality in this short story. In this novel I'm going to try to play with the net up and this is going to be what might fit within the plausible range of human science. That most science fiction authors only a small minority are scientifically trained but almost all science fiction authors, the reading that they enjoyed most while growing up was history. And so, perhaps an alternative name for it, could have been "speculative history" because we deal in different pasts, alternate presents, extension of the human drama into the future.

OCTAVIA BUTLER: I have a problem with alternative histories, if I can say something about that. So many of them seem to figure out how to lead us to where we are now, in one way or another, instead of going any place else. I mean, maybe different people are in charge, but the same basic things are happening and I have an ambition to write an alternative history in which things truly do turn out as they haven't.

ROBERT L. KUHN: Can science fiction, though, enable us to deal with alternative futures in a rational way? I mean, "Jurassic Park" in a sense is an alternative future, something that may happen. Is this a vehicle for dealing with alternative futures?

MICHAEL CRICHTON: There's no question that the kinds of things that we're doing, broadly speaking, are scenarios and that the value of scenarios is to explore futures in a way that's safe and to see something about what it might mean without...

ROBERT L. KUHN: When you say safe, it's in a fictional world.

DAVID BRIN: Einstein used the word *gedanken* experiment and he coined it, he said that just sitting on a streetcar in Bern, leaving the clock tower and imagining he was riding on a beam of light, was 50% of the work. And we all do this with these little nubs above our eyes called the prefrontal lobes, what the Bible refer to as lamps on the brow, to look into the future, doing this thought experiment, "What might happen if...?" But, no science fiction author predicted the home computer. Murray Leinster and John Brunner came close and backed away at the last moment because they thought, computers in the home, it seems logical, it's heading that way, people will laugh at me.

OCTAVIA BUTLER: Or more like, what would, what would they do with them?

ROBERT L. KUHN: Clearly, "Jurassic Park" is great entertainment, but is it more? You're probably the wrong person to ask, but I'll ask anyway.

Is Science Fiction Science?

ROBERT L. KUHN: I'll give you an anecdote. The book came out, and I was at a resort in Kona and there were a lot of, as it turns out, a lot of physicians from my old *alma mater* there who were who come every year, and somebody handed the book to one of these guys who was a bioengineer. And he read it, and he slapped it down and said, "It can be done!" And I thought, this is exactly the opposite of what I'm trying to accomplish here.

ROBERT L. KUHN: What was your motivation going into it?

MICHAEL CRICHTON: Well, I felt, at that time, concern about two things, which remain concerns, the first is that in my lifetime, one of the biggest changes that's occurred in science is that it has become commercialized. Because when I was a student, the majority of scientists worked in academic settings or they worked in places where research was freely available unless you were in a classified situation. Now, more and more that's not the case, more and more of it is private, more and more of it is secret, and more and more of it is rushed. And the problem with biotechnology in particular is, unlike nuclear technology you don't need a tremendous amount of money, you don't need an Oak Ridge Processing Plant you can get a little kit and start doing it yourself.

ROBERT L. KUHN: So it's a warning?

MICHAEL CRICHTON: Meant to be a warning about incautious research.

OCTAVIA BUTLER: Do you think you seduced a lot of young people into thinking about paleontology?

MICHAEL CRICHTON: Well, you know, I think it's actually great if kids become interested in science as a result of this.

ROBERT L. KUHN: s So you're making more of those scientists who can work for more of those secret companies to do more of these biotechnology things.

DAVID BRIN: But, if you take my sunny attitude, my sunny interpretation, the more educated and enthusiastic a public we have, then it's going to be hard for a small conspiracy to keep things secret.

OCTAVIA BUTLER: I don't think, though, that conspiracy is really the problem, I mean, there is a serious problem with people knowing, for instance, what is science? You know, why shouldn't creationism be in the science classroom? That kind of thing.

Is Science Fiction Science?

MICHAEL CRICHTON: Most people don't have any idea about what constitutes scientific information. A lot of the people that I knew 10 years ago, who were having experts come down from San Francisco, and were walking around their house with these little meters to check the electromagnetic fields [OR RADON] because of the health hazard. Those people are now buying, at great expense, magnet devices that they stick in their back and on their arms in order, because now it's understood, they think, that these are actually providing a health benefit. So, in 10 years we've gone from a health hazard to a health benefit.

ROBERT L. KUHN: Michael "Jurassic Park" probably taught more people about DNA and what that means than most colleges in the country. Is that a way that science fiction can eh, influence society?

MICHAEL CRICHTON: You know, there's a lot of discussion about that book as being anti-science.

ROBERT L. KUHN: Why?

MICHAEL CRICHTON: Because it took a critical posture to a new technology. I mean there was, at one point, a congressman was going to introduce legislation to ban dinosaur creating research. [THEY LAUGH] Someone whispered, I wish it had come to the floor, but someone apparently whispered in his ear that this was not really likely to happen.

OCTAVIA BUTLER: And they tend to believe the movies because they see it. I can remember having an, an argument with somebody who was insisting that a tornado was the greatest storm the world could ever know. And, there was nothing I could say that would convince her otherwise and that's not true at all.

DAVID BRIN: Let's watch out for our anecdotes because, if there's anything that we need to watch out for, as writers, it's clichés and the biggest cliché in our civilization is that everybody else is stupid. I don't know anybody who calls themselves a member of the masses.

OCTAVIA BUTLER: Not that everybody else is stupid, but that it's terribly easy to fool people and we've all been fooled.

DAVID BRIN: As authors, I think that there's some very serious issues we have to think about. Our job is to keep a character, or several characters, that the reader or the viewer identifies closely with, in peril, in jeopardy, for 90 minutes of film, or 600 pages of a book. The easiest way to do that is to simply posit that they're not members of a civilization filled with skilled professionals who will help them if they're in trouble. Or, to have a really, really plausible excuse for why your heroes are in jeopardy, and this is

Is Science Fiction Science?

one of the things I liked in “Jurassic Park” is they were very isolated, they had taken precautions, and somebody deliberately destroyed the precautions. So you have the ridiculous situation of people running away from dinosaurs who should be properly penned up, really having been fairly well explicated how you can have 90 heart-thumping minutes, even though help should be on the way, well, it is on the way, but it’s going to be there too late.

ROBERT L. KUHN: So, do you feel a desire to use future fiction to deal with the lack of scientific knowledge in society?

MICHAEL CRICHTON: I don’t know, no, I think, actually, I don’t know in what way we can help people to understand, when they see a number, how that number is arrived at, unless you’ve been doing some experiments yourself.

DAVID BRIN: My wife is a science teacher and she finds it appalling that so much of the testing going on, the latest big fad is attempting to emulate what foreign kids do to enable them to test well on these standardized exams, and that is memorization, when the thing that is the font of our creativity, the reason why 90 out of the 100 best universities on the planet are in the United States is because that’s not what our kids do, our kids are taught. This emphasis on memorizing facts from lists, from worksheets undermines the entire basis of science where she enjoys best teaching is experiments and getting them to draw conclusions and then criticize each other’s conclusions and come up with new experiments to settle the matter between them.

ROBERT L. KUHN: Are there issues in the world that you would like to see handled in a science fiction kind of model?

DAVID BRIN: I think the most powerful science fiction stories are not those that accurately predict the future, but, rather, those that have prevented futures, the self-preventing prophecy that came across so chilling, and so many people read it and were so moved, that the very scenario that might have plausibly happened didn’t happen, the two that really prevented the futures they described, “1984,” by George Orwell, and probably the greatest science fiction author who ever lived, Karl Marx’s “Das Kapital,” which utterly prevented the scenario that it described.

MICHAEL CRICHTON: I actually think that “1984” came to pass.

ROBERT L. KUHN: Why?

MICHAEL CRICHTON: Orwell’s writing about a totalitarian state, and that part isn’t the case, but the notion that you might live in a society that rather rigorously limits your available behavior, and that watches you to make sure that you do. You know, I think we

Is Science Fiction Science?

are increasingly seeing, but what's interesting is, that it's not Big Brother, we're doing it to ourself.

DAVID BRIN: But I think that's a major distinction. We are not falling into Orwell's failure mode of allowing the cameras to just look one way in a pyramidal social structure, which is what he feared, the ancient elites lording it over those below. My basic point is that we've gotten our freedom from elites. Instead, most of the cameras are coming into the hands of private people, not in England, not in Europe, but here, in America, most of the cameras are going into private hands.

MICHAEL CRICHTON: Why is that a good thing?

DAVID BRIN: Well, what we're talking about is evading Orwell's failure mode of the elites staring at us and us not staring back.

MICHAEL CRICHTON: The notion that that every single thing we do is recorded, that every, not only every mouse click but every purchase, you know, that we can be tracked in every way, that there is no part of our lives, except maybe going to the bathroom, and that's soon to change, you know, where we can truly be alone and where we can say what we are doing is not available for observation. And I think the notion that, I mean, we're all on camera now, and we're all having a conversation, we were having a conversation before the camera started, and I at least, experienced some subtle, but genuine difference now that the cameras are rolling, I'm being, you know, I'm on the air, I'm being shown, and I'm not being my normal self. And I'm concerned that there isn't going to be any part of my life where I can be my normal self.

ROBERT L. KUHN: Isn't science fiction a vehicle for taking contemporary problems and moving it to a different environment and, therefore, being able to dissect out that problem away from the normal trappings of society.

DAVID BRIN: One hopes, but the problem is this, Orwell warned us about the State looking at us without us looking back, so we're working on a society that might prevent that. Where's the science fiction's warning about the kind of society Michael was just describing, and that is a society in which everybody has the cameras – all right, so now we're free from elites, but we spy on each other incessantly and nobody has any privacy.

MICHAEL CRICHTON: Let me tell you a story. A friend of mine, her husband works in the State Department. They're going to have a farewell party for this person, and this friend of mine, she cooks the dinner herself, she has her son serve it, and she has her son's school friend also serve it, because she knows, if she brings in an outside person, a catering person, that everyone at the table won't talk. And I said to her, "This is great, how is this different from living in the Soviet Union?"

Is Science Fiction Science?

DAVID BRIN: In all of history no government ever knew as much about its people, as ours. And, in all of history, I contend, no people have ever been quite this free. It's still true after 9/11.

MICHAEL CRICHTON: Well, I'm not sure of this at all.

DAVID BRIN: Well, you know, we can argue about that, but, you find me the historical counter-examples.

MICHAEL CRICHTON: Well, I can give you an easy one just to start.

DAVID BRIN: Yes.

MICHAEL CRICHTON: When Bork was nominated for the Supreme Court and it appeared that it was going to be difficult to knock him down on intellectual content alone, which I would have thought would not have been that difficult, but, when it appeared that it was going to be, one of the things that was suggested was that they might introduce his video tape rentals.

DAVID BRIN: And there's a law that resulted from that.

MICHAEL CRICHTON: But, I mean, the fact is it's recorded.

OCTAVIA BUTLER: Yeah, I'm not sure that's the thing that we have to worry the most about, but yeah. I mean, I have a feeling that some of the things that we're doing environmentally, for instance, are things that are going to hurt us a lot worse than the fact that we've got cameras trained on each other.

ROBERT L. KUHN: Have you dealt with that in your fiction?

OCTAVIA BUTLER: Particularly global warming, yes. Yeah, my books "Parable of the Sower" and "Parable of the Talents" global warming is a character. I mean, it's there doing things while people are trying to live their lives. And it's not a very popular notion. I mean, it's something that people can still forget about, ignore and, no matter how many novels come out mentioning it's just not that important to, I think, most people right now.

ROBERT L. KUHN: David, in your latest book, "Kiln People," if you look at it beyond entertainment, which we're trying to do, do you see an alternative future, do you see pushing science?

DAVID BRIN: This is one of my less plausible ideas, most science fiction has fallen to the cliché of more life by extending it serially, tacking it on the end. So, "Kiln People" is

Is Science Fiction Science?

basically motivated by the notion, instead of doing it in series, how about having more life in parallel where you could really use it. Every morning you lie down on a home copier and out spill five or six clay Golum copies of yourself with your memory, your motivation, so you can be in two places at once, collect the memories at the end of the day, be in five places at once the next day, and work out the permutations. And, so it's a real science fiction novel in the sense that it works out what such a society might be like.

OCTAVIA BUTLER: Do you really think that that would be enough

DAVID BRIN: People will never have enough, but, I believe that human sanity is based, to some degree, on satiability in that, if you get what you wanted, if you're fairly sane, it should at least make you a little bit happier. And it should move your ambitions from what they were to something else.

OCTAVIA BUTLER: I think one of the worst things that could happen to you is you get what you want and you're finished, you know, might as well cut your throat now, it's done.

DAVID BRIN: Humans are monkeys, that's not going to happen.

OCTAVIA BUTLER: No, I know.

DAVID BRIN: People complain that the average American watches 40, 50 hours a week of television or that 30% of Americans do, well, the same 30%, a hundred years ago, watched the fire for 40 hours a week.

MICHAEL CRICHTON: Better programming though.

OCTAVIA BUTLER: I don't know, I can remember being a kid and, I mean, I got to live a 19th Century existence for a little while. My grandmother had a chicken ranch and there was no electricity and the well for water, that kind of thing. We told stories. Actually, I think they enjoyed scaring the heck out of me. But just, some of them were true, some of them weren't. It was...

ROBERT L. KUHN: It enriched your life.

OCTAVIA BUTLER: It did, well, for one thing, I got a real love of being read to or having stories told to me.

ROBERT L. KUHN: Why is science fiction more mainstream now, what's happened?

MICHAEL CRICHTON: I think that technology is phenomenally important in our lives. And it's going at a much more rapid rate. I mean, I was born in 1942, so I spent 10

Is Science Fiction Science?

years without television, in the way that we're talking about, and the arrival of television made an enormously different world. And, a few years after that, the arrival of jet aircraft made an enormously different world. And, by the time, you know, you get personal computers, you know, it's, it's very, very, very different. You know, kids, say to me about an early book I wrote, "The Andromeda Strain," they say, "Well, why did you write it that way," meaning that old way with all those old things. I mean, they can't conceive it's 35 years ago, it's a totally, totally different world.

ROBERT L. KUHN: Some people say that actually prepared us for things like bioterrorism, how we'd react to anthrax.

MICHAEL CRICHTON: See, I always thought it was a remake of "War of the Worlds."

ROBERT L. KUHN: Do you see science fiction in other cultures having a different character to them?

DAVID BRIN: Japanese science fiction uh, Brazilian science fiction and, very interesting science fiction literature that arose out of the Soviet Union, out of enthusiastic socialists, very different, in many ways, than ours. But if you travel around the world you can, as a science fiction author, know the difference between those countries in which science fiction is popular and that which it isn't. In Japan people will pick me up at the airport, in India they won't.

OCTAVIA BUTLER: I remember going to a conference in New York, it was a African Women of the Diaspora, called The Yari Yari Conference, actually, The Future of the Future. There were a lot of people from third world countries where it wasn't a matter of press freedom so much as finding the necessities, a printing press for one, finding some way to get your book on paper and then to distribute it, all yourself.

DAVID BRIN: But there's another essential point for why this is an American literature to some degree, and that is all of the propaganda mills coming out of the American experience, promote suspicion of authority and to some degree, tolerance. As Octavia was saying, there are a lot of cultures in which authority is a much more revered thing, or, much more of a problematical thing in day-to-day life.

OCTAVIA BUTLER: Or, just in which there are a lot more needs that aren't being met.

DAVID BRIN: That's exactly right.

ROBERT L. KUHN: Let me ask you this, if we had somebody here from India or China or, or Africa how do you think they would react from those societies?

Is Science Fiction Science?

OCTAVIA BUTLER: I think they probably would want us to focus in places that were more important to them. I'm thinking about the writer, whose name I can barely remember to pronounce. Arundhati Roy who is last I heard, was under arrest because she went beyond her writing fiction and criticized something that I think was very worthy of criticism that her government was doing. I think probably people, especially in third world countries, would want us to pay more attention to what's really going on and what shouldn't be.

ROBERT L. KUHN: Theoretically though, all of your fiction is non-culturally based, if you're in a different era, a different time, a different galaxy...

OCTAVIA BUTLER: But really, it's all culturally based, of course.

ROBERT L. KUHN: Because most of science fiction may be generated in the United States, building into it a cultural bias?

MICHAEL CRICHTON: Or building into it a bias that has to do with a level of technological sophistication.

MICHAEL CRICHTON: Which is not worldwide, but it's technology, as opposed to social.

OCTAVIA BUTLER: I think it's both because I don't think you can have this level of technology without it affecting the social, and therefore it has to be social.

ROBERT L. KUHN: What are some of the future issues you'd like to see discussed in the genre?

OCTAVIA BUTLER: I think there's a problem with, we don't have a focus now that was like, for instance, the cold war or the space race within the cold war, we don't have anything that grabs everybody. And since we don't have that, what we write probably seems more scattered than we intend it to be. So, we're not, you know, no matter what the future of science fiction is right now, I don't think it looks, I don't think it's like what we thought of the future of science fiction many years ago.

DAVID BRIN: Especially since the best science fiction is about the human response to change. And since change is a salient feature of our civilization, although it always has been to some degree, I think that science fiction has, simply logically speaking, philosophically speaking an important role to play. The issue is whether or not it's playing that role well.

Is Science Fiction Science?

MICHAEL CRICHTON: I think that, that to do these kinds of scenarios is valuable, but it is not the same as holding a newborn child, it is not the same as holding a parent while they die in your arms, and how you explain that feeling, is orders of magnitude different from what we do.