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10-20-1976

Isaac Asimov: 10-20-1976

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Issac Asimov Interview 10/20/1976

Asimov: Insert knob A in hole B. Dave Woodbury and John Henson, grotesque in their spacesuits, supervised anxiously as the large crates swung slowly out and away from the freight ship and into the airlock. With nearly a year of their hitch on Space Station A-5 behind them, they were understandably weary of filtration units that clanked, hydroponic tubs that leaked, air generators that hummed constantly and stopped occasionally. "Nothing works," Woodbury would say mournfully, "because everything is hand assembled by ourselves." "Following directions," Hansen would add, "composed by an idiot." There were undoubtedly grounds for complaint there. The most expensive thing about a spaceship was the room allowed for freight so all equipment had to be sent across space, disassembled and "nested". All equipment had to be assembled at the Station itself with clumsy hands, inadequate tools and with blurred and ambiguous direction sheets for guidance. Painstakingly, Woodbury had written complaints, to which Hansen had added appropriate adjectives. And formal requests for relief of the situation had made its way back to Earth. And Earth had responded. A special robot had been designed, with a positronic brain crammed with the knowledge of how to assemble properly any disassembled machine in existence. That robot was in the crate being unloaded now. And Woodbury was trembling as the airlock closed behind it. "First," he said, "it overhauls the food assembler and adjusts the steak attachment knob so we can get a rare instead of burnt." They entered the Station and attacked the crate with dainty touches of the demoleculizer rods, in order to make sure that not a precious metal atom of their special assembly robot was damaged. The crate fell open. And there within it were five hundred separate pieces. And one blurred and ambiguous direction sheet for assemblage.

FitzGerald: Welcome to the "Writers Forum."

I'm Gregory FitzGerald of the English Department at the State University College at Brockport. And with me is fellow interviewers today are Joshua Duberman and Jack Wolf.

Wolf: Doctor Asimov, I'd also like to welcome you today. But in your selection from "Nightfall," you were again, reading a story that dealt with robots and robotics. And I think everyone in the audience is aware of the fact that you've given us, directly or indirectly, the three laws of robotics. But is there a correlation, in your mind, between your stresses in so many of your stories on robots. And your general feeling that you've expressed in various essays, for example, about the fact that science fiction should fundamentally be a kind of social literature? You speak of social science fiction often. And is there a correlation, in your mind, between the use of robots and your feeling about the sociological aspects, I would say, of the stories?

Asimov: Well, my own definition of science fiction, sir, is that science fiction is that branch of literature, which deals with the response of human beings to changes in the level of science and technology. And over the past two centuries, we have watched our society grow more and more machine made, so to speak. And I assume that one of the possible futures, is one in which machines continue to bulk larger. And play more and more of a part in society. In fact, to the point where eventually machines may

quote, "take over," unquote. So, that a good portion of my stories deal with this possibility. I have machines beginning to have human intelligence. I have machines capable of doing all sorts of complex tasks we associate only with human beings. And eventually, I write stories in which the machinery does, more or less, threaten to take over. My own feeling is twofold here. In the first place, I don't feel robots as monsters who will destroy their creators. Because I assume that the people who build monsters will -- beg your pardon. That the people who build robots will also know enough to build safeguards into robots. Secondly, when the time comes that robots, machinery in general, are sufficiently intelligent to replace us, I think they should. We have had many cases in the course of human evolution and the vast evolution of life before that, in which one species replaced another. Because the replacing species was in one way or another more efficient than the species replaced. I don't think that Homo sapiens possesses any divine right to the top rung. If there's something that's better than we are, then let it take the top rung. As a matter of fact, my feeling is that we are doing such a miserable job in preserving the Earth and its life forms that I can't help but feel that the sooner we're replaced the better for all other forms of life.

Wolf: Maybe we won't leave much that anybody can live among, except robots.

Asimov: And give us 30 years and the replacement will come too late.

Duberman: In your robot stories and in your "Foundation" trilogy, you outlined a possible future, which has taken over, to a large extent, future extrapolations, by other science fiction authors. Perhaps, it's because your view is more efficient.

Asimov: Well, as a matter of fact, we in science fiction, we authors, are all of us, more or less friends. We inhabit a small, specialized world in which we are comfortable. And the general feeling is that ideas are common property. That when one science fiction writer thinks up something which is, in its way, very useful. And you want to use it too, you put it into your own words, but to use it freely. Nobody in science fiction, is going to accuse any other person in science fiction, of using his ideas. In fact, we borrow so generously that there's no way of telling whose idea it was. For instance, in my novel "The Caves of Steel," it was very important to the plot to have moving sidewalks with an elaborate system of side strips that enabled you to work up to the speed of the sidewalk or to work down to the speed of the surrounding, motionless medium. And this had already appeared some years before in Heinlein's "The Roads Must Roll." Well, I borrowed it without any worry at all and made use of it. And I'm sure that Heinlein, reading the novel, as I imagined he did, would have recognized his system. But who knows where he got it from? He never said anything. It'd be different if I used the details of the plot. If I worked up a story that was so like his, nobody could fail -- that's plagiarism. But just to use the idea and build your own plot and your own story about it, why, we do this all the time. And you know, they do it from me, too. They use the three laws of robotics. They use the equivalent of an all human empire. And they're welcome. I have no objection.

FitzGerald: Now, you know, to turn back for a moment to something you said earlier about mankind being replaced. In an article that he wrote in "Extrapolation," Charles Elkins, writing about your work, said that he

interpreted it as your view, not seeing a change in the ultimate human nature. Did you think that's a fair representation of your idea, in the "Foundation" trilogies?

Asimov: Yes. Some people have pointed that out in my "Foundation", purportedly, which is taking place tens of thousands of years into the future. But although there is some evolution of science, there is some devices we don't have now. There is no evolution in human behavior. And there is a reverse evolution in political science. In other words, we go back to a kind of feudalism.

FitzGerald: Well, that's why I wanted to ask that question. I wanted to see how you could rationalize the non-effect of technology's and science upon the condition of human nature itself. In other words, don't you think that with changes in technology and science, that the human nature itself will be changed? Altered by perhaps, human beings themselves?

Asimov: Well, it's possible, but that was not my purpose in writing the "Foundation." You see, when I wrote the "Foundation," I wanted to consider essentially the science of psychohistory. It was something I made up myself. It was, in a sense, the struggle between free will and determinism.

FitzGerald: Yes.

Asimov: On the one hand, I wanted to do a story. The first thing that occurred to me, was to do an analog of the decline and fall of the Roman Empire, in a much larger scale, with the galaxy. And to do that, I took over, in a sense, the aura of the Roman Empire and wrote it very large. So, that the social system, is very much like the Imperial system, of the Romans. That's one thing. But that didn't bother me. That was just my skeleton. That's what I was going to work in. And at the same time that I started these stories, I was taking physical chemistry at school. And I knew that although the individual molecules of a gas moved quite erratically and randomly, nobody can predict the direction of motion of a single molecule at any particular time. The randomness of the motions, all worked out. To the point where you could predict the total behavior of the gas very accurately. You could work out the gas laws. You knew that if you decreased the volume, the pressure would go up. If you raised the temperature, the pressure would go up, the volume expand. You knew these things, even though you didn't know how individual molecules would behave. And it seemed to me, that if we did have a galactic empire, there'd now be so many human beings, quintillions of them. That perhaps you might have -- you might be able to predict how societies would behave, very accurately. Even though you couldn't predict how individuals composing those societies would behave. So, against the background of the Roman Empire, wrote large, I invented the science of psychohistory. And the attempts that individual humans might make to evade the psychohistory. And so, that constantly, through the entire trilogy, there is the opposing force of individual desire. And that dead hand of social inevitability.

FitzGerald: Would it be accurate to say, then, that you believe that the laws of history are as inexorable as the laws of physics?

Asimov: Well, I wanted them so, for this particular story. I could easily write another story in which I would take the attitude that the laws of

history are not in the least inexorable. And anyone can change them. This is an important thing to remember. It's very tempting to suppose that the point made in a story is something that the author believes. This is often so.

FitzGerald: Yes.

Asimov: But it is not necessarily always so. Because frequently, an author thinks of a motif. Which has the advantage of being interesting, exciting, dramatic, which he doesn't personally accept. And for the sake of the story, he'll put it in.

FitzGerald: Yes.

Asimov: I, for instance, I wrote dozens of robot stories, all of them designed to show that we need not have the Frankenstein complex. The robots are protected by means of the three laws. Human beings know that they're in no danger, etcetera. And then when someone asked me to write, what I considered the ultimate robot story, I thought about it and decided the only way I could make it ultimate, is to get around the three laws of robotics. And produce the Frankenstein motif again. So, I did. The title of the story was, "What is Man That -- I forget the title of the story. Isn't that wonderful? In any case, there's a complicated title that I took from a biblical quotation, which I now forget. But I wrote that story. And anyone reading it would assume that I was sure that robots would end up a danger to human beings. In fact, I got a number of indignant letters from fans, saying that --

"That Thou Art Mindful of Him," that's it.

"That Thou Art Mindful of Him."

I got a number of indignant letters from fans saying, how can I possibly bring up the Frankenstein motif when I'd spent so many years denouncing it.

Wolf: Did you get any letters from robots? [brief laughter].

Asimov: No, the robots were satisfied with my job. But my only answer to them was, that I thought up a dramatic story. And I wasn't going to allow my own beliefs to get in the way.

Wolf: But isn't, in a way, you're talking a lot of the charges, I think, that's levelled against science fiction. And that is, the erratic movement of the molecule. The Brownian movement is unpredictable. But the predictability is a statistical predictability. It doesn't deal with any particular individual. And one of the charges that is often leveled against science fiction projection is just the fact that it isn't a basic assumption in science fiction that the laws, which we have discovered, which we think are operable upon the Earth, are of necessity. The same ones that operate throughout the galaxy or throughout the universe. And that this is not necessarily the case.

Asimov: Well, scientists know that this is not necessarily the case and they keep looking for evidence that it isn't. So far, they haven't found it. And science fiction writers have sometimes assumed that the laws are different and based stories on that. Generally, they don't because it gets complicated if you try to invent a -- my novel, "The Gods Themselves," dealt with two universes in which the laws of nature were different. I just made a slight difference in one particular law of nature and tried to work out the consequences. It's not easy. But almost any assumption can be broken in science fiction, on one condition, that you know what the assumption is. And that you know you are breaking it

and can let the reader know that you know. Unfortunately, in many cases, people who write science fiction, violate the laws of nature. Not because they want to make a point, but because they don't know what the laws of nature is. And this always shows and it makes the science fiction inferior.

Wolf: Well, sometimes it's hard to be certain exactly what the law of nature is.

Asimov: Well.

Wolf: In following, we have an interoperative approach.

Asimov: But that's why it's better to have some sort of background in science. Not necessarily a formal one in school. You can work it up yourself. But, people tend to forget that the great revolutionaries of science knew thoroughly what it was they were revolutionizing. In other words, Galileo was an accomplished Aristotelian scholar. He knew Aristotelian physics. And Vesalius knew Galenic anatomy. And Newton understood all the previous theories of the universe. You don't revolutionize science by coming in fresh and not knowing what went before. And many people who write me letters with brand new theories of the universe, you know, make it quite clear to me that they haven't the foggiest idea what the present theories are. And you just can't do it that way.

Wolf: Can I get back to something that is somewhat off this topic. But you mentioned that if robots are in a position to take over some time in the future, so be it. Therefore, they are superior. But, this reminds me, I think it was in Moskowitz, "Seekers of Tomorrow." He mentions a rather, at least in his mind, a classic debate, back in '38, between you Donald Wollheim. Should, in case of an invasion, should the Earth surrender to a superior civilization? Or should they fight against it? And as I recall, your position was that the Earthmen should fight against this surrendering.

Asimov: Well, I tell you, all opinions have to be considered in the light of the surrounding times. And in 1938, was the year of Munich. And when they asked, should we surrender to the invading civilization? It was impossible not to think of surrender to the Nazis simply because it looked as though they were more powerful and they were going to win. At that time, it seemed to me, no, you have to fight to the death. Because surrender was going to be a lot worse than fighting to the death. You were better off dead, at least I would have been, since I was Jewish. And that reflected itself in my position. Obviously, times change. And now that we have a position in which the thermonuclear war, you might conceivably destroy mankind generally. When we come to that better dead than Red argument, I can't accept that. I'm perfectly willing to have the better dead than Red on a personal basis. If you would rather die than give in to the Communists, fine. But is it wise to kill the entire human race, rather than to give in to Communists? Because there, you figure, that if you give in, in some future generation, you might win out again. But for the entire human race to be dead is final. So, that at different times in my life, I might give different answers to the same question.

Wolf: I see now and I wouldn't dwell on it any longer. But obviously, as an analogy, you wouldn't really be giving into a superior civilization, had we given in to the Nazis. So, I think -- well, that's probably that was a matter of moral judgement involved in it that I was curious about.

And I think the ghost is laid to rest. And I'd like to move on with something else.

Duberman: The novel you mentioned, "The Gods Themselves," was your first science fiction novel, a new one, in a long time. Throughout a lot of the '60's, you were producing some of these magazine articles and books that people could further their knowledge of science, meeting those, without going to school. Why did you stop? And why did you start writing science fiction again?

Asimov: Oh. Well, in the first place, I never really stopped writing science fiction altogether. I always, every once in a while, I would turn out a small story or two. I didn't write any science fiction novels because I got interested in writing other things. And a science fiction novel is a very time-consuming thing. I don't think I can write a science fiction novel in less than seven months. And in those seven months, even when I'm not typing, I'm thinking about it a lot. And it just fills my time. Whereas, if I were to write nonfiction, that goes very quickly. I don't get involved with endless thinking. And when I'm not writing science fiction, I can turn out a book a month of various kinds. And this is fun, for me. I like to be typing. I like to be turning out books. I don't like to stay awake nights thinking that maybe I ought to change the plot to include this or, you know, it's very difficult. So, what it amounts to, is that science fiction is the most difficult thing there is to write. And I'm essentially a lazy person. So, I like to write other things when I can. Even mysteries are a lot easier to write. I mean, my most recent novel, "Murder at the ABA," was a mystery and not science fiction. And it was written in seven weeks. I couldn't for the life of me write a science fiction novel in seven weeks! I just couldn't!

FitzGerald: And --

Asimov: Pardon me?

FitzGerald: I'm sorry. Could you be more specific as to why, other than the amount of time that you spend on it science fiction is so much harder to write?

Asimov: Oh! That's very easy. You see, in science fiction, you have two aspects. First, you have the plot, the complications of events. That's the same as, let's say, in a mystery. But, secondly, you have to build a new society, one that doesn't exist now, if you want to write a good science fiction story. And this society, if you do it properly, should be just as interesting as the plot itself. In other words, the reader should be just as eager to read about the society and picture it, as they should to see the development of the plot. But you don't want to subordinate one to the other. You don't want the plot to be so intricate and to be so dense that you can never see the background through it. On the other hand, you don't want the background to become so prominent that you lose sight of the plot that's taking place in front of it. In the end, therefore, you have to maintain this perfect balance. As I think I maintain it, for instance, in "The Caves of Steel." Where I think I manage this balance best. And it's hard to work it out. You have to do a lot of thinking and a lot of writing and a lot of rewriting.

FitzGerald: Right.

Asimov: Whereas in any other, in mysteries, you're using the present society. You don't even have to give it a thought. You're just there. And when you're writing non-fiction, of course, you don't even have a plot.

FitzGerald: So, is it fair to generalize and say that in science fiction, the powers of invention are taxed more fully, than they are in other forms, for you?

Asimov: Yes, provided it's good science fiction, I mean--.

FitzGerald: I see.

Asimov: You know, bad science fiction is easy to write. But if you really try to turn out a piece of good science fiction and it just takes everything you've got in you. At least in my case. And in the case of "The Gods Themselves," while I came back to it, I planned to write a short story. I started out I to write a 5,000-word short story and it got away from me.

FitzGerald: The style, I think, is it's significantly different from that of your earlier work, in terms of characterization and this alternate world idea and alternate universe. Was that the first time you approached that?

Asimov: Well, I rarely, rarely deal with extraterrestrial beings in my stories. Not never, but rarely. And there was the impression that the reason I rarely dealt with it was because I couldn't handle it. I suppose that did sort of irritate me a little. So, when I wrote "The Gods Themselves," I deliberately placed the middle third in another universe and worked up a set of extraterrestrials. Which were not just humanoid creatures, not just human beings with antennae. But were really completely different in every possible respect. And it was a matter of -- I guess, I overcome. So, I tried so hard to show them I could do it. But I turned out what I think and some people agree with me, is the best story of extraterrestrials ever written. Also, my novels and stories almost never, well, never contain explicit sex and very rarely contain romance. And my explanation, when someone asks me, is that I'm essentially a pure person, at least in my fictional life. And this they tend sometimes to disbelieve and say that I just don't have the capacity to deal with sex. So, in this section, in the other universe, dealing with extraterrestrials, I also had the complete plot. That section of the plot completely involved with sex. Every line was involved with it. The plot just made no sense without sex and all its details. Of course, it was extraterrestrial sex, which was nothing like ours, you understand. But that's all right, I think the principle remains.

FitzGerald: Well, you're also a limerick writer. Could you -- mind giving us one of your favorite limericks for this tape?

Asimov: Well, now you see, my limericks tend to be what we call lecherous limericks. And I presume I'd better not be too lecherous on these tapes. So, I'll give you the most recent one I wrote, which isn't very lecherous. It came about because last week I gave a talk at Princeton University. And at the dinner preceding the talk, a young coed, long blonde hair, quite attractive, was sitting to my left. And I asked her name and she said it was Lin. She said, Lin, L-i-n. So, I thought a while and said, "There was a young woman named Lin, who said I'm prepared to begin any type of activity that suits my proclivity, provided it counts as a sin [brief laughter]." I wrote it out and gave it to the young lady. Who said to me, "that can't be me, I'm the daughter of an Episcopalian minister." It's proof, you can't always win [brief laughter].

FitzGerald: Marvelous.

Wolf: I'd like to ask you, in your "Foundation" series and the approach to psychohistory. Much of that, at least theoretically, reminds me of

some of the current "think tanks," in the Hudson Institute and a number of others. Were you -- did you have any of that in mind when you were --?

Asimov: No, I didn't because the essence of the "Foundation," appeared in the very first story I wrote. It originally appeared as series of eight stories in "Astounding Science Fiction." And the whole notion of psychohistory appeared in the very first story I wrote. Which was published in the June, 1942 "Astounding." Which was written in 1941, when I was 21 years old. And that was well before "think tanks." Because "think tanks" came in and I had no knowledge of them whatever, when I wrote it.

FitzGerald: I'd like to ask you a question about science fiction as literature. Now, you have personally written and been aware and alive during the periods of greatest change in science fiction, from 1938 to the present. What kind of a prediction would you like to make, if any, about the direction in which science fiction is going now? And you know, how do you characterize it, evaluate it for us?

Asimov: Well, it seems to me that at the present moment, science fiction is the only branch of literature that is flourishing, fictional literature, that's flourishing and growing and expanding. In general, fiction is in the doldrums, certainly compared to the way what it was when I first got into the field. In those days, there were literally dozens upon dozens of pulp magazines. There were many slicks that published fiction. There were all sorts of literary quarterlies and so on. And publishers themselves, were eager to put out novels. So, that the beginning writer had plenty of places to go. Nowadays, you know, the pulps are gone. The slicks, such as those who that exist, don't publish fiction. There are no literary quarterlies. Publishers don't like to publish fiction. They won't publish first novels, only second novels. And as a result, the young people who want to write and there are just as many as there ever are, are in a quandary. And since science fiction alone is flourishing, a lot of them are writing science fiction. With the result that there is a certain dilution of science fiction. It's becoming, somehow, more literary and more experimental in style. Less science fictiony. Because a lot of the writers don't happen to be full of expertise in science. And they don't think they ought to be. They don't think that we ought to have science fiction, but we ought to have, they think, is speculative fiction. In which you speculate, in various directions, the future takes in any style you feel like. And they're probably right. And I suppose that in the future, for as long as we have a future, science fiction will broaden, become more dilute. That it will tend to become coexist -- no, not coexistent is what I mean. That it will tend to spread out until it overlaps all of fiction. In other words --

FitzGerald: Coextensive.

Asimov: Coextensive, that's it. Coextensive in fiction generally. I think that all people who write fiction are going to have to take into account certain science fiction trends. They're going to have to take in the manner of change. The fact that that society is changing. Of course, it changes faster and faster. And that within this broad field of science fiction, there will be a narrower field of old fashioned science fiction, dealing entirely with scientists, with science. And I'll still be in that small bit. Because I'm very old fashioned to science fiction.

Wolf: Some of this, it seems to me, is due to, you're very careful in your essay, for example, in social science fiction, to specify that you're talking not about the term science generally. But and it's a definition more or less is technology. And you're quite specific about that. And it seems to me that's what you're talking about, in a way, here. Because the tendency not to identify sciences. In so many fields, science of psychology, psychoanalysis, sociology and so forth. Things that have never been traditionally connected with the natural sciences, as such. Which do not lead fundamentally to technologies. And if you're talking about science fiction, in those terms, you obviously are going to get a much broader kind of definition and a much broader field for interpretation, it seems.

Asimov: Yes. And in the "Foundation" trilogy, I deliberately and specifically dealt with what we might call political science or the science of history. And developed a technology for it, you know. And that was my attempt to broaden the notion of science in science fiction. But on the other hand, you know, we have extremely gifted writers like Harlan Ellison, who couldn't be less interested in science. And who concentrates entirely on human beings and their emotions. And does it very effectively. But it's only science fiction by courtesy and he recognizes that. He's in the forefront of the movement to use the term "speculative fiction." Before him, a forerunner in the field, a John the Baptist, so to speak, was Ray Bradbury.

Wolf: Bradbury.

Asimov: Who also knew no science and didn't want to know. And wrote stories of great poetic value.

Wolf: And he doesn't consider himself a science fiction writer.

Asimov: No, he doesn't. He's a fantasy writer. I called him at one time a social fiction writer. And he accepted that at the time.

Wolf: And yet probably, "Fahrenheit 451," or something is as technological as most of what passes as science fiction, generally.

FitzGerald: It's not very extrapolative, though.

Asimov: Well, it's very hard to make these hard and fast boundaries. Everything fades into everything else.

FitzGerald: Right. To what extent do you think, let's say that hard science fiction is distinguished from what you just been describing, is in any way a preparation for the readership for "Future Shock?" I mean, does it help or was that Toffler's idea, you think, not worth much?

Asimov: No, I tend to agree with Toffler. It's difficult not to be human. I don't like change that upsets my well-worn way of life. But it doesn't come as a completely outrageous thing to me. You know, I do know that change will take place. I may not like it, but I'm not outraged. No one can go, but, I never knew this would happen. I did know it would happen. I think, as a matter of fact, that what we might call the science fiction attitude -- now, I'm speaking about science fiction, proper hard science fiction. What we call the science -- what I call the science fiction attitude, is essential if we are to survive as a society. As a technological society. As a working industrial society. Because unfortunately, too many people just take it for granted that things won't change or if they do they shouldn't. And you should make every effort to restore the situation, status quo ante. You know, back to the good old days. And as a result, you're not prepared for the changes. And you make

no effort to direct them in optimum fashion. And we're going to be overwhelmed in a couple of generations with the changes that are now taking place, most of which are undesirable. And unless we can look these changes boldly in the face, try to figure out what one ought to do to prevent these undesirable changes and to bring about desirable ones. And in fact, to think hard so we can distinguish between undesirable and desirable ones. Because you can't always tell. We are certainly going to go under. Now, no matter what we do, we may go under. But I would prefer to do something, which would give us a chance, then do nothing, which would give us no chance at all.

FitzGerald: Well, now in connection with what you just said, you produced for us the three laws of robotics. But how about coming up with three laws for human beings? So, that when we manufacture human beings by means of genetic engineering, that we can have the built-in protections you gave us for robots?

Asimov: That's an interesting thought, which I've never had. You've come up with something new. That was, well, why don't I think about it? I'd hate to come up with something off the top of my head, A; because it wouldn't be as good. As what I have to do is give it some magnificent thought. And B; I'd prefer to give it some thought and maybe write a story about it.

FitzGerald: Well, that's good. You wouldn't mind if I wrote one about it, too?

Asimov: Oh, no [brief laughter], by all means. By all means. After all, it's your idea I'm stealing, right?

FitzGerald: No, you're not stealing, we're sharing.

Wolf: Exchanging [brief laughter]. No problem there. But this is, what you were talking about earlier, is something taken up by Susan Sontag, among others. And that is the idea that the imagination of disaster in science fiction films and all. That science fiction tends to, like a lot of popular culture, make us too willing to accept change, too readily. To grow, more or less, indifferent to the moral concepts that are involved. And figure well, change is inevitable. And so, it doesn't matter particularly what the change is, we're going to have to have change. And just go, more or less, roll along with it. With the result that maybe out of complacency or becoming inured to the fact that change is inevitable. We, more or less, abrogate our feeling about being in control of our futures. And so, we just tend to go along with what's given to us.

Asimov: Well, I don't accept that as a proper interpretation of the attitude of science fiction. Science fiction does not simply talk about change as an abstract thing. Every science fiction story describes a certain, particular change. And decides whether it's for the better or for the worse. Generally, in science fiction stories, the changes described are in one way or another, for the worse or threaten to be for the worse. Not because science fiction writers are essentially pessimistic. Not because change is essentially for the worse. But only because this makes for a more dramatic story. If you write a story about a change, which produces human happiness, you come out with a "Looking Backward," that Edward Bellamy wrote. Which is an interesting book, but a dreadful story, it's very dull. So, that we are constantly writing anti utopias. The idea being that this is a change we don't want to take

place. How do we prevent it? And in the story frequently, the villain is defeated. The change is aborted. Something better seems to be on the horizon. A threatened change for the worse is prevented and so on. So, that I think science fiction teaches that there are numerous changes and that mankind, by his actions, can pick and choose among them. He should choose one which is for the better and not one that which is for the worse. I think that is the proper interpretation of the role of science fiction.

Wolf: So, we have to accept the fact that there must be change. And then concentrate in directing that change.

Asimov: That's right.

Wolf: In the chance that we like.

Asimov: Exactly.

Wolf: Actually, this takes us back in the way to the earlier suggestion of Dr. FitzGerald, about the genetic engineering. The laws of genetics or whatever. Were you involved with the symposium in California a couple of years ago, when the soul searching took place about shall we continue genetic engineering or is it too dangerous and beyond our control?

Asimov: Well, that's, no. The trouble is I don't fly. So, I've never been in California and I may very likely never be there. But of course, I mean, I'm aware of the discussion. And it is indeed a dilemma. Because on the one hand, genetic engineering can produce a great many very useful and interesting results. On the other hand, it can conceivably produce a great many frightful dangers. And it's difficult to know what to do. I recently wrote a couple of articles in the "American Way Magazine," in which I first -- the first article described possible good that we can get from genetic engineering. And the second one, possible evil. And then, suggest that I have a solution on how one could keep up with genetic engineering, in order to attempt to get the good, without running to much risk over the evil. And that article has not yet appeared. It will appear in the next issue, the November issue, I guess. And there I suggest that since people keep talking about building space colonies or building solar power generators, which will be orbiting the Earth. That why not also build laboratories in space where various dangerous experiments can be conducted. In nuclear power, in dealing with genetic engineering. Dealing with dangerous biological or chemical poisons and so on. Where people who volunteer to work in those -- work in those space laboratories, will do so knowing the risks they run. And it's their right to run the risks if they wish to. And take all possible precautions to lower the risk. But at the same time, the space between the vacuum, between the space stations and the Earth, will reduce, considerably, though not completely wipe out, the possibility of spreading whatever the danger is.

Wolf: Contamination.

Asimov: So, that whether this is practical or this is feasible, whether we'll get around to do doing it, I don't know. But I think it's worth discussing.

FitzGerald: Well, the other side of genetic engineering seems to me to be behavioral modification. And we were talking earlier about the old distinction between determinism and free will. What side of that question are you on?

Asimov: Well, I tend to be rather non-idealistic about this. I think behavioral modification is something we all fool around with. There's

never been a parent with a child who hasn't tried behavioral modification.

Wolf: We're all victims of it anyway in society. Advertising and all, is behavioral engineering.

Asimov: Yes.

Wolf: We can't escape it.

Asimov: And heck, you know, my tendency, my ingrained tendency, when I'm at one of my university dinners, before I give a talk. Is that any pretty young coed there, I'm extremely suave to. But I have to limit the suavity because if I don't, behavioral modification will set in with a loud bang [brief laughter]. So, I'm not worried about behavioral modification itself. I ask merely to what extent and what direction, for what purpose?

Wolf: And isn't it who does it and for what purposes?

Asimov: Well, anyone who is -- anyone who has a greater power of behavioral modification, then we ordinarily accept nowadays, might be dangerous. I mean, we're now speaking of let's say, brainwashing.

Duberman: How about Loeb in New Hampshire, [mispronounced name] with the primaries?

Asimov: Loeb.

Duberman: Loeb, yeah.

Asimov: Well, you see, I don't agree with him. I don't agree with him politically, so I consider him a villain. I suppose if I agreed with him, I would say what's wrong with what he does. I mean, he's a good man.

Duberman: He's got more power, though.

Asimov: Yes, he has. But the reason he has the power is because a great many people in New Hampshire agree with him. And which is too bad.

FitzGerald: Behavioral modification isn't merely, I think, from an exterior point of view, it can be exerted for physiologically as, what's his name, the Spanish Delgado.

Asimov: Oh, yes.

FitzGerald: Delgado discovered.

Asimov: That's right. You hook up your brain to the appropriate stimuli, by means of a radio beam. You can stop a charging bull in midflight. He suddenly feels very peaceful. Yeah, this is -- you see now, in my stories, I generally make my machines very human. And in this way, you can make a living animal very machine like. And then you ask why? I can see where it might be useful, if you have a person who has certain tendencies to homicidal rage. And what's the punishment? Do you imprison him for life? He may, in between these periods of homicidal rage, be a very peaceful member of society. Or do you fit him up with a little button? Which somehow will, whenever he has these moments of rage, automatically set off a sufficient stimulus to quiet him down again? You know, make it self-limiting. I can see that as a legitimate means of psychiatric therapy.

FitzGerald: Now, let's carry that on a little bit further, it sounds interesting. What about performing an operation on a person's skull and inserting a little gadget in the brain, set to stimulate various paths of the brain from a remote-controlled position? And then perhaps remove the memory of that operation?

Asimov: Yeah, this sort of thing would be -- probably has been used in the movies, in the various spy stories. I fear that anything of this sort that can be done, will sooner or later be done.

FitzGerald: Isn't there a sort of law that states that principle? What's the name of that law?

Wolf: Anything that can go wrong will. Anything that can go wrong will.

Asimov: Oh, yeah, they call that Murphy's Law.

Wolf: Murphy's Law.

FitzGerald: Murphy's Law, right.

Asimov: Yeah, there's all sorts of variations of Murphy's Law. The chance that a piece of buttered bread on falling, will land buttered side down, varies directly as the square of the expense of the carpet. [Laughter]

Duberman: One change in your own life, since you left Boston University in '69, has been that you're a much more public figure these days. You're on TV often. You're doing commercials. How do you feel about this?

Asimov: Ambivalent. In other words, it gives me a feeling of power. People assume that I'm an important personage. And so, that I can get away with a lot of things. In other words, I can walk in somewhere and announce my name and everyone is very eager to help me out and so on. And it is convenient. On the other hand, I don't particularly like to be recognized in the street because I value my anonymity. I like to walk from here to there without being troubled by the surrounding world. And also, there are a great many demands in my time, which there wouldn't be if I were less well known. I'm afraid that I insist on keeping my name in the phonebook. I mean, that's the way I've lived my whole life and I don't want to give it up. And it does mean that every once in a while, I get a call from some young man or young woman who finds my name in the phone book and can't resist calling me up. Usually, they're very nice because they want to tell me how they like my stories and stuff. But there's always the possibility of prank calls. And if ever they start coming in an unacceptable density, I'll have to get an unlisted number. And I hate the thought of that.

FitzGerald: Well, it's often been said that you've been very helpful to young science fiction writers. And I was wondering, if you could perhaps tell us something that we could pass on to our young beginning writers that they need to know about starting off in science fiction?

Asimov: Well, I think that what any young writer, science fiction or not, has to know right away is A) there are no shortcuts. There are no secrets or tricks that will enable you, surely to sell your material. Which if you don't know, you will never sell it. That the only way there is of learning how to write is to write. That the first so many stories you write, might be considered your literary college education. They're not a waste of time, just because you get them rejected. Each one you write, teaches you something about writing. And eventually, you may be able to sell. Nobody, if you decided to be a brain surgeon, would expect to get away with not going to college and medical school and residency and all the rest of it. And yet writers, writing is a harder job than a brain surgeon. For which I deduce from the fact that there are fewer successful writers than there are brain surgeons. And yet writers expect that if their first story isn't sold, somehow that proves they're failures. So, ignore rejections. Keep on writing. Also, when you do write a story, don't bother showing it to your parents, your friends, your teachers, people you know. Because they're all going to say how great it is. And it's not going to do you a bit of good. The only people you should bother showing your stories to are editors who must consider it for publication. And who if they say it's good, it means something.

And if they say it's no good, it means something. And I would suggest that. Furthermore, I would suggest you never talk about a story in progress. Because you tend to blow off steam that way. You find that the more you talk about it, the less you're likely to write it. Keep it within yourself and let the steam pressure rise. And if you stick to it, if you keep on writing, if you don't let yourself be discouraged, then eventually you will sell. If you don't eventually sell, it's maybe because you lack the talent to be a writer. But you'll never know, unless you go through all this.

Duberman: Of course, often by the time you manage to sell, you've had to engage in some other profession to keep yourself alive. And you're in a position where you really don't want to make the choice anymore to be a writer.

Asimov: Incidentally, I'm glad you said that. Nobody, upon selling their first story, should quit their job [brief laughter] and become a professional writer.

FitzGerald: I think most have found that out [brief laughter].

Asimov: I did not quit working and become a professional writer until I had been writing successfully for 20 years. And had been making more money in my spare time writing than in my profession. Only then did I feel it was safe and it isn't. I know lots of writers who instantly become professional writers, instantly. And generally, they go through a very difficult period, both psychologically and economically. And have to eventually find another job and so on. I say avoid that, avoid that.

Duberman: Well, there are too many factors involved. One of them being that public and editorial tastes changes so rapidly. That even if you're successful for a couple of years, the wave may pass and leave you behind.

Asimov: That's true.

Duberman: And there's no guarantee on that.

FitzGerald: That happened to a number of the pulp writers from the '30's.

Duberman: Oh, indeed. "Black Mask" and all had a number of authors who didn't make it.

Asimov: Right. This is -- you might call it the talking picture syndrome. You know, something new comes in and all the people who have adjusted themselves to the old, find that they are no longer viable. And when John Campbell produced "System in Science Fiction," that dealt realistically with science and engineering. A lot of the old writers who were used to talking about monsters and mad scientists and stuff, couldn't make the transition and went out. And nowadays, the change over into a more accomplished literary style, for instance, has knocked out a lot of the writers of the Campbell era, who can't write in literary fashion. And I suppose this is true everywhere. In fact, one of the reasons I'm glad I write in every possible field, at all age levels, is that it gives me a kind of an ever-normal granary. If one thing becomes unpopular or no longer done, there are other things I can still do. And so, I feel that I can continue writing as long as I live.

Duberman: Tell me one thing, Campbell's insistence on technology or engineering as a solid basis for what I think [inaudible] called a hard-core science fiction. It seems to me that although we're becoming more and more technological and we have more and more scientifically oriented people in our society, we're getting less and less scientifically oriented science fiction as such. It seems to be almost a paradox.

Asimov: Not really. Partly it's a disillusionment with science. Partly it's because we're getting a lot of hard core science fiction in the --

I'm not being sarcastic, in the newspapers and magazines. Because my goodness, landing the Viking on Mars is hard core science fiction. Now we are doing it. But for years and years, this is exactly what we wrote about. So, that science fiction writers are tending to avoid this.

Duberman: They're being wiped out by the popular.

Asimov: And then, finally, as I said before, a lot of the people who are now writing science fiction, are doing so in default of anything else and aren't interested in science.

Duberman: Are you tending to move away from science fiction, to some extent because a kind of disillusionment with science fiction as a viable form of literature?

Asimov: No, I think it's extremely viable. I will admit that I'm a little, I feel a little ill at ease with modern trends in science fiction. The highly stylistic, science fiction of today, the emotion saturated science fiction of today. The decreasing percentage of hard core science fiction that appears, makes me feel like a back number.

Duberman: There's been any number of times the charge level that science fiction is fundamentally cerebral, rather than emotional. And therefore, character isn't developed in science fiction and all the ramifications of that. It seems to me that the current trend is really, not only away from character, but also away from that cerebral side and it's really more toward action.

Asimov: Yes, it is. And you see, when I described earlier in this conversation about the difficulty of having background and plot at the same time. When you do that, you do spend a lot of time in your background, you have that much less time to spend on your characters.

Duberman: Exactly.

Asimov: And, you know, you don't have the kind of characterization most people talk about when they say characterization. But if you consider your background society as a character, that's got all kinds of characterization. You see, but it's usually not considered by the critics. On the other hand, now, where the writers are trying to remove the cerebral quality and to add to the emotion, to work with the characterization in the older sense and so on. They do that at the cost of the background. And many modern science fictions, you have the people very sharply delineated. But you see a society only by flashes of lightning. You don't have it thoroughly worked out. So, that, you know, there is no such thing as a free lunch. If you gain something here, you lose something there. Now, when I said I felt like a back number, this doesn't mean that I don't write science fiction at all. And when I do write science fiction, often it turns out to be fairly popular. Last year I wrote a story called "The Bicentennial Man." Which has now been nominated for a Hugo. Whether it will win, I don't know. But at least it's been nominated. And in fact, one person reviewing it said and this rather touched me. I generally feel very cautious about reviewers. I don't like them. But this time he touched me. He said, "you read the book and for an hour and a half -- you read the story and for an hour and a half, you find yourself back in the Golden Age." That was sort of nice. I liked that.

FitzGerald: Well, look, I'd like to ask you something. What are you working on now? In both science fiction or otherwise?

Asimov: Well, let's see now. At the present moment, I'm going to be having a new science fiction magazine coming out the end of this year. It's a quarterly to begin with. If it does well, it will go to a bi-monthly and then to a monthly. If it doesn't do well, it will stay quarterly for a few issues and then stop. We all hope it will do well. The title will be "Isaac Asimov's Science Fiction Magazine." I will be writing an introduction to each number. And three, at least, are guaranteed. And I will have a story in the first issue and a story in the third issue. And some small items in the second issue. I don't know if I can manage to write everything for issue. But they would like me to. So, there's that, which is on tap. And except for that, I'm writing almost entirely non-fiction at the moment. I've got two books, one on food and nutrition. And another one, "Ultimate Sources of Energy." Which has been in the works for years now, very slow. I'm working on a fourth volume of my "American History." I am putting together a new collection of essays. I write my monthly column for "Fantasy and Science Fiction." My monthly column for "American Way" magazine. And periodic articles for whoever, almost whoever asks me to. And I write my limericks, also. So, that I'm always busy. There's no day in which I don't have plenty of writing to do, if I want to.

FitzGerald: Do you have any serious pursuits?

[brief laughter].

Asimov: No, as a matter of fact.

Wolf: Do you ever write any plays or screenplays?

Asimov: I have no talent. I'm not visual. And I can't keep track of characters. Generally, in my stories I have two characters talking. And then two other characters. And then one of the characters and someone else. There's always two people on scene because I don't know what to do with the third person, while the two people are talking. My "Black Widower" stories, which appears for instance in these "Tales of the Black Widowers," I routinely have seven people on scene. But I have deliberately modeled them on people I know in a real club. Which is now I guess the "Black Widowers," call the "Trap Door Spiders." And by visualizing seven people I know, you see, I keep their characters straight and what they're doing and so on. To me in a way, that's cheating. But I'm told that lots of people do that. That they model their characters on real people, just so they can keep track of them more easily. But if I have to write for the visual media, for movies or television, this ability to keep your hands on everyone. And to know when a person comes in and when a person goes out. And what a person is doing while this person is speaking, I find that so difficult. I don't want to tackle it.

FitzGerald: Well, with "Fantastic Voyage," how exactly did you work the writing of that?

Asimov: Ah! Well, you see, it was the other way around. Somebody wrote a screenplay. I don't even know who. And they made the picture. And then while they were making the picture, they sent me a copy of the screenplay and asked me to novelize it and I did. So, the picture came first. I had nothing to do with it.

Duberman: "On the Waterfront" technique. First the film and then the novel after.

Asimov: Well, they do that more and more, but I was the very first person to novelize a movie and insist that it come out has a hard cover. Until then and maybe since then, it's always come out as a throwaway paperback.

But I lent-- and you know, usually, these novelizations of movies, only sell while the movie is on and then die. "Fantastic Voyage" is still selling. The last I saw it was in its 26th printing.

FitzGerald: It's an exciting book.

Asimov: Oh, I liked it very much.

Duberman: A fantastic voyage.

Wolf: Yeah.

Asimov: I liked the movie or at least I liked the screenplay. And I also liked the acting. It was Raquel Welch's first starring vehicle. And I approve of Raquel Welch.

FitzGerald: I think we all do.

Asimov: She's a fine woman and has got a good head on her shoulders.

Wolf: Indeed.

FitzGerald: Well, Doc Asimov, we've come to the end of our time. So, I'd like to thank you for being our guest on "Writers Forum." And I'd like to thank you, Josh and you Jack, for being with us today.

Asimov: It was my pleasure to be here.