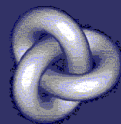


John Sladek

**Science Fiction  
and  
Pseudoscience**



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## SCIENCE FICTION AND PSEUDOSCIENCE

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## Science Fiction and Pseudoscience

### John Sladek

Some of you may have seen Jonathan Miller's recent television talk on science fiction. I think I can summarize his conclusions in one equation: science fiction equals pseudoscience plus bad writing. (I might add that the only science fiction Dr Miller ever read was in preparing for his talk.) We might similarly summarize Shakespeare's *Julius Caesar* as pseudo-history plus good writing, but it doesn't say anything about the play. Instead, I'd like to unravel science fiction from pseudoscience, and compare the two.

First of all, science fiction writers don't claim to be "doing science", they claim to be writing stories. Whereas pseudoscientists, as we'll see, think they are scientists. Pseudoscience can be defined very loosely as any enterprise which looks like science to the layman, but which

lacks rigour. That lets out religions, since they seldom claim to be sciences – except for Christian Science and Scientology. It also leaves a fringe area containing the social sciences perhaps, and psychoanalysis, which *sometimes* behave like pseudosciences and sometimes, well, behave themselves. Finally we have the hard-core shams: whenever we find a chiropractor curing cancer by rubbing his patient's spine, or Rosemary Brown playing the latest works transmitted to her by Chopin and Liszt, or an astrologer claiming to have predicted the death of Kennedy, we are in the presence of genuinely false science.

The main problem of the pseudoscientist seems to be that he doesn't know what science is, or how a scientist works. The genuine scientist, according to P.B. Medawar, does four things:

- 1) He understands that a hypothesis is just a guess. Until some testing is done, it is on probation.
- 2) He uses a hypothesis to start his inquiry and to give it direction.
- 3) He realizes that he can never "prove" his hypothesis (without an infinite number of experiments of an infinite type) but he can *disprove* it.

4) He knows he must test his hypothesis.

Of course in reality this isn't so neat. Hypotheses are broken down, reshaped, patched up, and regretfully abandoned. Scientists are probably a lot more zestful about attacking other people's hypotheses than they are their own. Medawar mentions scientists who operate like philosophers, detectives, artists and even metaphysicians. I would venture to say that science and its false counterpart do actually overlap in spots. An example, I think, is the work of Professor Gerald Hawkins on Stonehenge. Hawkins' hypothesis, that Stonehenge is an astronomical computer, is perfectly respectable science in one sense – that is, he seems to have shown that Stonehenge bears certain mathematical relationships to movements of the sun and moon. On the other hand, he, or someone else, has yet to show how the people who built it, even if they were as astronomically sophisticated as the Egyptians, could have kept the kind of records they would have needed to build such a computer. I have an idea that in order to build Stonehenge they would have had to keep records over several thousand years. Personally, I'm still inclined to believe him, mainly because I don't know anything about astronomy.

A good definition of a pseudoscience as opposed to a

science can be found in Martin Gardner's *Fads and Fallacies in the Name of Science*. It's probably the best book on pseudoscience that has been published. He says there are five ways in which the serious pseudoscientist's paranoid tendencies are likely to be exhibited:

- 1) He considers himself a genius.
- 2) He regards his colleagues without exception as ignorant blockheads. Everyone is out of step except himself. Frequently he insults his colleagues by accusing them of stupidity, dishonesty or other base motives. If they ignore him he takes this to mean that his arguments are unanswerable. If they retaliate in kind it strengthens his delusion that he is battling scoundrels. Consider the following quotation: "To me, truth is precious. I should rather be right and stand alone than to run with the multitude and be wrong. The holding of the views herein set forth has already won for me the scorn and contempt and ridicule of some of my fellow men. I am looked upon as being odd, strange, peculiar, but truth is truth and though all the world reject it and turn against me I will cling to truth still." These sentences are from a booklet published in 1931 by Charles Silvester de Ford of Fairfield, Washington, in which he proves that the

Earth is flat. Sooner or later almost every pseudoscientist has expressed similar sentiments.

3) He believes himself unjustly persecuted and discriminated against. The recognized societies refuse to let him lecture; the journals reject his papers and either ignore his books or assign them to enemies for review. It is all part of a dastardly plot. It never occurs to the crank that this opposition may be due to errors in *his* work. It springs solely, he is convinced, from blind prejudice on the part of the established hierarchy – the high priests of science who fear to have their orthodoxy overturned. Vicious slanders and unprovoked attacks, he usually insists, are constantly being made against him. He likens himself to Galileo, Copernicus, Pasteur and other great scientists who were unjustly persecuted for their heresy. (I know this is so. I've been reading quite a bit of pseudoscience for my book and I think I've found at least ten people, in completely different fields of pseudoscience, all of whom likened themselves to Galileo.) If he has no formal training in the science in which he works, he will attribute this persecution to the scientific masonry, unwilling to admit into its inner sanctums anyone who has not gone through the

proper initiation rituals. He repeatedly calls your attention to the important scientific discoveries made by laymen.

4. He has strong compulsions to focus his attacks on the greatest scientists and the best-established theories. When Newton was the outstanding name in physics, eccentric works in that science were violently anti-Newton. Today, with Einstein the father symbol of authority, a crank theory is likely to attack Einstein in the name of Newton! (We'll see some of these later.) Mathematics proves that an angle cannot be trisected, so the crank trisects it. The perpetual motion machine cannot be built – he builds one. There are many eccentric theories in which the *pull* of gravity is replaced by a *push*. Germs do not cause disease, some modern cranks insist, disease produces germs. Glasses do not help the eyes, says Dr Bates, they make them worse.

5. He also has a tendency to write in a complex jargon, in many cases using terms he himself has coined. (That is probably a minor point, but I think one of the main points about the crank, or pseudo-scientist, is that he does work absolutely alone. He never has any recourse to check his work against anyone else's.)



One of the reasons people have often supported pseudosciences is that their arguments really are unanswerable. They have seen them put down their questioners and win every debate on the subject. There's a very good example in Shaw's *Everybody's Political What's What*, in which he talks of a flat earth man completely holding a meeting at bay while he expounds his theories. Every question they could possibly have thought of, he has already answered himself. An example: one man asked him, "Well, surely you've seen a ship sinking over the horizon, seeing the sails disappear last and so on?" And he said, "Have you ever actually seen this?" And of course the man hadn't; in fact no one in the room had but the flat earth man!

The first possible link I'd like to talk about between pseudoscience and science fiction is historical. They both began in the nineteenth century, and probably for similar reasons. Science robbed us of our gods. Man was no longer a specially-created son of God, halfway between angels and animals; he was just another animal. Comets turned out not to be portents after all; instead they were locked into the solar system just like the planets. The mysterious vapours and spirits of earlier ages turned out to be just gases, mindless matter. Even the Bible began to look like fiction.

But if science had taken away religion, it had become a kind of religion itself, and scientists certainly weren't coy about taking over a priestly role. They still are perfectly glad to make pronouncements about things they are completely unsure of themselves, in order to get themselves in the newspapers. It does happen. I think one of the best examples of this is Life in The Test-Tube. How many times have you seen a newspaper headline about life in the test-tube? It still hasn't come about, but every step along the way the newspapers – often, I think, with the cooperation of the scientists involved – jump the gun on it. Another example is heart transplants, where the press coverage of the heart transplants seemed to be much more important than the actual science involved – the study of immunology and the surgical techniques.

I think it was very natural that pseudosciences should try to imitate, that home-made religions should begin to look like sciences. When the galvanists found electricity in living tissues, electricity became known as a Life Force. This led to things like Mary Shelley's *Frankenstein*, and it encouraged the sale of a wide range of galvanic remedies. You can still go into a chemist and buy a copper bracelet – and sometimes you can get one set with magnets to preserve your life force.

The lid was off, and we soon had Christian Science, Theosophy, Anthroposophy and so on. Almost no science was left alone: each one developed its own dwarfish twin, its mockery. Pseudo-archaeologists got busy on the Great Pyramids and Atlantis. Pseudo-physicists began disproving Newton, and of course later Einstein. Pseudo-astronomers proved that the Earth was flat, that it was concave, and one group that it was made up of a congeries of concentric spheres, with various kinds of life on each level, open at the poles. They kept trying to get money to sail to the poles and enter the inner spheres of the Earth. And, of course, pseudo-geologists went right to work disproving Darwin almost as soon as he had said anything.

It took longer for science fiction to get rolling. The earlier stories were like Mary Shelley's, horror fiction. Poe did mesmerism in "The Case of M. Valdemar". Hawthorne did what I think is a very good robot story in "The Dancing Partner". It's very funny and very horrifying, and I think it has all the elements you will find in the personality of HAL, the Arthur C. Clarke computer. It's not only an automaton trained to dance, it also makes good dance conversation. It asks the young lady how long she's been in town, and does she come dancing often, and so on and so on. Of course, it

goes wrong and she dies a horrible death, but even while it's crushing her to death it's asking her all these inane questions! He also did what I like to think of as the first anti-matter story, "Rappaccini's Daughter". Of course it isn't *really* anti-matter. In this case it is a girl and her father living in a world of poisons, where they finally become so saturated in them that they are poisonous to anything outside their house and garden; and anything outside their house and garden is poisonous to them, of course. There's mutual annihilation when the hero falls in love with the daughter. Then came Wells, who seems to have invented everything. If this was pseudoscience, it was of a different order. I don't think any Victorian ever understood the implications of science, technology and scientific philosophy the way Wells did. It's very difficult to see how *this* could be summed up as pseudoscience plus bad writing.

The next connection between pseudoscience and science fiction is the obvious one: the subjects they cover. Pseudoscience has been working on a number of ideas which are really science fiction: telepathy, alien invasion, teleportation and so on. Here are a few of them.

Firstly, telepathy or ESP. Many people take it for granted that ESP is a proven fact in some sense or another. They assume that Dr Rhine at Duke Univer-

sity, or his British counterparts Dr Soal and Mr Bateman, have ironclad evidence of telepathic communication. They are wrong. It is true that some phenomenal results were obtained in the Twenties and Thirties using the Zener ESP cards, but in no case could the card-guessing success of the subject be positively tied to ESP. Sometimes success could be traced to cheating, either deliberate or accidental. For instance, Rhine used for a considerable time a deck of cards which were translucent enough to be read from the back if held in a decent light. Often the person handling the cards could have cued the subject by his facial expression, gestures etc. In some cases there were recording errors, and oddly enough these were always in favour of ESP! This is natural; I'm certainly not implying that any of the people doing these experiments were themselves being pseudoscientists. I just think they were very careless scientists. They obviously believed that what they were looking for was there to be found, and I think it has been shown in other sciences as well that when people start off to look for something, it gets found, whether or not it is actually there. When people began suspecting the existence of Pluto they found it several times before it was found, in various sizes and orbits and at various speeds. It's just too easy to see what you want to see, and it's certainly no discredit to Dr Rhine.

Only very feeble efforts were made to randomize the cards, and it is curious that whenever the experimental conditions were really foolproof, the elusive ESP seemed to fade away. Professor C.E.M. Hansel has shown that all the “classic” ESP experiments can be adequately explained by normal events, without recourse to paranormal activity. Telepathy has yet to be demonstrated under experimental conditions.

Time travel is claimed to be a fact by several mystics, but they usually use astral bodies rather than fleshly bodies, so this obviously cannot be tested. The notable thing about astral bodies is that they are notoriously bad at bringing back evidence about their journey. They don't seem to remember things very well, and they obviously can't bring back any material evidence. J.W. Dunne, in his book *An Experiment with Time*, suggests that we time travel in our dreams. It is a very serious attempt to try to explain prophetic dreams. I haven't had any prophetic dreams myself, but I know people who claim to have. There are two problems really. First of all, the dreams are almost never recorded before they come true, so there's no evidence of what actually happened in the dream, and second, even when a dream actually matched reality there might be other, more mundane explanations than precognition or time travel.

Another system of prophecy, probably more well-known, involves studying the Great Pyramid. The pyramids have a system of internal passages – not too complicated really, but they have several bends in them. By measuring the distances between these bends and deciding arbitrarily that these corresponded to years in the history of the world, various people have found that the entire history of the world's past and future is recorded there. By this means, the world has been made to end in 1881 ... they then decided it was really 1914 ... then 1925 ... and for sure on August 20, 1953. You can't be right all the time. For the last thirty years the very-impressively financed Foundation for the Study of Cycles in Pittsburgh has been looking for and finding cyclic behaviour in absolutely anything, from marriage rates to war, human "creativity" to steel prices. They claim to have so far isolated 37 cycles in the stock market, but their information has not so far enabled anyone to make a killing. With their failures they begin by saying, well, this is really cyclic but it also has a trend, so we'll remove this trend. So they make a suitable alteration and then they say, well, actually the reason it doesn't look like pure cycles is because there's more than one cycle operating here, and they tend to amplify each other (or subtract themselves). So they then find a number of suitable cycles which will fit –

something which I think you can do to almost any curve. For instance, let's face it, something like the stock market isn't going to just disappear. The line has to be somewhere on the graph; it has to go up, or go down, or stay the same. You just find a suitable cycle to fit the system. If nothing else works they can always blame "random" factors, by which I *think* they mean that the future is uncertain....

An interesting tie-in between various types of organization is that they get glowing praise from Roger Babson, head of the Gravity Research Foundation in Boston. Babson has been looking for a "gravity screen" (another of Wells's inventions) for 20 or 30 years now. He also used to sell anti-gravity pills to people to help their circulation.

Pseudosciences overlap, all the time. In the field of alien invasion, or UFOlogy, we find Alfred K. Bender contacting flying saucers by telepathy. The message he and his flying saucer club sent was a combination of psalm and office memo:

"Calling all occupants of interplanetary craft! Please come in peace and help us with our Earthly problems. Give us some sign that you have received our message. Be responsible for creating a miracle



here on our planet. Wake up the ignorant ones to reality. Let us hear from you. We are your friends.”

The reply, unfortunately, was a terrifying religious experience. After lying down, closing his eyes and repeating the message a magical three times, Bender got what I think epileptics and migraine sufferers know as an aura: he experienced a powerful sulphurous odour and blue flashing lights. And then a voice came, of course. Speaking in a dry, office-memo style, it warned him:

“We have been watching you and your activities. Please be advised to discontinue delving into the mysteries of the universe. We will make an appearance if you disobey.”

I believe that poor Mr Bender was so advised.

Among the UFOlogists the craze of the last three or four years has been combining UFOlogy with pseudo-archaeology, proving that since it obviously doesn't look as if we're having alien visitors now, we've had them some time in the distant past. I think you've probably all seen the popular books on the subject, by Erich von Däniken, for instance (*Chariots of the Gods?*) and Peter Kolosimo (*Not of This World*). Kolosimo, interestingly enough, uses great chunks of quotes from van Vogt. He

obviously has very little to work on in the way of actual data, so he dresses it up with long quotes from science fiction stories. Implying that we're just around the corner from finding out that this was really the case; that there really were space visitors who put up the stone faces of Easter Island and built the pyramids (it all ties in with the rest of the pseudo-archaeology ...).

One problem with UFOs is where they come from. The number that have been seen would imply pretty heavy traffic between here and wherever. Another UFOlogist suggests the fourth dimension as the obvious place – it is a good place to park them. The vanishing of saucers when chased, the location of their mother ship – anything like this can be explained by allowing them to pop in and out of the fourth dimension, or else parallel universes. They don't seem to realise that it doesn't *explain* anything to say that they disappeared into the fourth dimension; that just means they disappeared. To quote Lobsang Rampa (an Englishman who claims to be possessed by the spirit of a Tibetan monk):

“It is always amazing that people can readily believe that the heart can pump ten tons of blood in an hour, or that there are 60,000 miles of capillary tubing in the body, and yet a simple thing like parallel worlds causes them to raise their eyebrows in

disbelief.”

Rampa has also travelled faster than the speed of light, he says. (He claims, incidentally, that you can still see at the speed of light. You can't see objects behind you – he's clear about that – but you can see them in front of you!) Indeed, he invokes the 9th dimension, antimatter, teleportation, telepathy, reincarnation and our old friend time travel.

The classic teleportation case is something called the Allende letters, which consist of two letters and marginal notes in a popular UFO book. The notes are supposed to be done by three aliens, who obligingly used three colours of ink so you could tell who was speaking. A good thing too, since they all have the same voice – they've probably all been reading the same space comics. Not only do they favour space-comic-slimy-alien chortles, always going “Ha-ha!”, but their superior extraterrestrial science seems to borrow heavily from the science fiction of earlier days. Telepathy, force-fields, scout ships, mother ship, antigravity and so on are combined with dark references to Charles Fort, secret Gypsy tongues and Lemuria. And of course they mention the U.S. Navy's famous teleportation experiments of 1943.

Using Einstein's Unified Field Theory, the Navy made a destroyer invisible while at sea. They then shifted a ship from its berth in Philadelphia to another in Virginia, and back again, in a few minutes (why not instantly?). Crewmen were said to have gone mad from the experience. Well, who wouldn't? Some of them suffered from annoying aftereffects, such as freezing solid or suddenly fading from view.

World catastrophes have always been about as valuable to pseudoscientists as to science fiction writers – although the pseudoscientists tend to use them as warnings as well; there's a distinct Jeremiah touch. The chief theories are those of, for example, Immanuel Velikovsky and Hans Hörbiger.

Hörbiger was an Austrian engineer in the 1920s, and his World Ice Theory takes some beating. He believed that the moon was about to crash down upon us. That is, it was not just orbiting the Earth but slowly spiraling inwards. In fact, all the planets are doing so. Basic to the World Ice Theory is the idea that space isn't really empty, but filled with sticky fluid. This is slowing down all the planets: any body moving through it naturally loses energy through friction, so all orbits are spirals. The Earth and planets are falling into the sun, the moon is falling into the Earth, and so on. Hörbiger

also decided that the moon and all the planets (except ours, oddly enough) are thickly coated with ice. More ice falls into the sun all the time, and that causes sunspots. Finally, the Milky Way is nothing more or less than an enormous aggregate of ice cubes. The Hörbiger theory went over well in Nazi Germany where, with several other crank theories, it was welcomed as a refreshing alternative to “Jewish science”. The Nazis tried at one time replacing practically anything done by any scientist who could possibly have been Jewish with something else. They had to start by wiping out Einstein and going back to an ether theory ... this would fit in very well with Hörbiger’s sticky fluid, I suppose. By the way, we now know that the moon is spiralling *outwards* at three centimetres per year. So relax.

Velikovsky is probably the catastrophe king. Others have imagined worlds colliding. Others have explained the Deluge with the help of a cooperative comet or two. But it took Velikovsky to make the Earth the punching bag of the solar system. His theory is that Earth was visited in Biblical times by a series of comet-caused disasters. Here’s a brief choreography :

- 1) Jupiter and Saturn nearly collide. This knocks a comet out of Jupiter.

2) The comet swoops past Earth, causing earthquakes, floods, meteor showers etc., several times.

3) The comet knocks Mars out of its orbit, and Mars then bears down upon the Earth. More quakes, etc. This repeats every 15 years.

4) Mars and the comet collide very near Earth. Small comets are pulled off the comet's tail and become the asteroid belt.

5) Mars is finally knocked back into orbit, and the comet itself settles into a planetary orbit to become the planet Venus.

Velikovsky's heaviest evidence for all this is mythology; he feels that by a very close reading of all the catastrophe stories in all the mythologies you can deduce what they were actually talking about. The ten plagues of Egypt were all stuff falling from the comet's tail, for example; and so was the manna which fed 600,000 Israelites for 40 years in the desert. Damon Knight goes to great lengths to defend Velikovsky in his book on Charles Fort, but he seems to be defending not so much what he says as his right to say it. I suppose no defence of Velikovsky is possible – but no real attack is possible either. A lot of scientists have tried to attack him, with very little success. They assumed that he was much

more ignorant than he was. After all, he spent about 9 years writing this book, researching daily into astronomy and so on. Like Hörbiger, Velikovsky warns us of future catastrophe, another flaming collision which will vindicate all his theories, and no doubt punish unbelievers.

I'll just say a word about Scientology. Since L. Ron Hubbard was once a science fiction writer, and then invented his own science-cum-religion, we would imagine that this is a very close link indeed. Unfortunately I haven't investigated Scientology very thoroughly, so I'm not qualified to analyze it. On first glance it seems to be an amalgam of psychoanalysis, religion and bullshit, but it's very tightly organised in such a way as to maximize profit. When it suits the promoters, it can choose to be a revealed religion – given to the founder from Above – and thus not open to questioning. At other times it masquerades as an exact science, based on common sense. Common sense, I might point out, was the great rallying cry of the Nazi sciences, too, who wanted to do away with all those messy Jewish equations and get down to having a direct chat with Nature.

To illustrate what I mean by the common sense idea, here are some of the axioms of Scientology:

“Life is basically a static. Definition: a life static has no mass, no motion, no wave length, no location in time or space. It has the ability to postulate and to perceive.

“The static is capable of considerations, postulates and opinions.

“Space is a viewpoint of dimension.

“Energy consists of postulated particles in space.

“Time is basically a postulate that space and particles will persist.”

There are about ten of them. The last one is:

“The highest purpose in the Universe is the creation of an effect.”

Somehow that strikes me as very applicable to Scientology.

Scientology seems to share one feature with Nazi enterprise, and that is paranoia. Fear is probably a saleable commodity anywhere. One of the elements of Scientology is the engram, which is supposed to be a permanent record, grooved into your mind in some way, of everything you have ever heard, including what you heard in the womb. I think this must be the ultimate in para-



noia: you have to watch what you say in front of the foetus because, like one of Orwell's child spies, it may be listening. The only other feature I have seen in Scientology which distinguishes it from competing pseudosciences is its policy of literally enslaving its followers. The idea is to sell them a treatment they can't afford, then make them work it off as indentured helpers in the cause. I understand that Ed Sanders' book *The Family* sheds quite a bit of light on Scientology in relation to Charles Manson, another of whose influences was evidently Heinlein's *Stranger in a Strange Land* – so here we are back in science fiction again.

In his book on science fiction, Sam Lundwall says:

“Science fiction has always been somewhat unorthodox.... Being based mainly on the question *what if ...?* it often has no use for the standard literary tools of mainstream fiction, and is, consequently, hard to judge by the gauges used for fiction describing familiar and predictable situations. It presents an equation that consists of nothing but unknowns.”

This sounds oddly like the kind of special pleading pseudoscientists use to show why they are really

scientific, if “unorthodox”. I dislike it. I don’t think science fiction needs or deserves special consideration: like any other form of fiction, it has to tell a good story.

The question “What if ...?” is asked by both sf and pseudoscience. The main difference is, the pseudoscientist doesn’t know when to admit it’s all a game.

*The End*

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