A Short History of Nearly Everything
Bill Bryson

I found the book enjoyable. I have no real criticism, but do have a few comments. Some comments were likely said elsewhere but will be repeated.

Concerning the probability of other earthlike planets, some estimates are that with the number of stars in the universe, there is essentially no chance that an earthlike planet exists. Two books of interested are “Rare Earth” and “The Creator and the Cosmos”. The authors of the first book are secular, while the second book has a Christian astronomer for an author. The film “The Privileged Planet” is another good bit of info on the subject. Of course, the subject is academic until other life is found. The chance of that is small. The chance of other life finding us is many orders of magnitude smaller. Is intelligent life really the goal of evolution as the likes of Carl Sagan would suggest. Or is it just an anomaly. Since evolution is so lacking in having an underpinning in the mathematical and physical sciences it cannot be said whether evolution has a goal, or is just nature rambling.

On page 125 of the paperback edition of “A Short History of Nearly Everything” is mentioned Bertrand Russell’s train thought experiment where a train is going 60% light speed. There is a few confusing issues. One will not directly hear spoken words. The train is approaching faster than sound. If there is a microphone on the train and a transmitter so we can hear what is being said, I am not sure what we would hear. When the train approaches the wavelength transmitted would be shortened. Demodulating it would give us what? The same question can be asked for the train receding.

It is said that for someone standing on the platform they would see the passing train being eighty yards long, which is shorter than seen when it is standing still. I have seen comments like this before. I believe Special Relativity has to do with what we measure with an array of instruments, not what we see. I think someone has shown that what we would see is a train at its normal length rotated at an angle. In presenting relativity there seems to be sloppiness as to seeing and measuring.

There is another confusion I have about relativity. Say a star is 100 light years away and we wish to travel to it. We have a craft that we can accelerate to ninety percent light speed. How long does it take us to get there in our time in the craft? As we go faster, measured distances get shorter including the measured distance to the star. As we go faster and the measured distance gets shorter, are we measuring the distance between us and the star decreasing at faster than the speed of light, at least while we are accelerating? Near the speed of light the measured distance nears zero and we are there very quickly. If after arriving at the star, having decelerated and stopped, we measure the distance we traveled, earth to star, and the time it took us, measured by the clock on the craft, do we find we traveled faster than the speed of light. We divide the length in the stationary frame of the star by the time in the moving frame of the craft, which was stationary to us while we were in it except for the acceleration and deceleration. We traveled 100 light years, but are less than 100 years older. Even if we do find that we got there faster than the speed of light, we still did not beat a beam of light that left the same time we did. In light's frame of reference there is no time and the universe is two-dimensional with no depth. Of course, the conclusion would be that in principle we could travel to the stars in our lifetime.

My only comment about quantum mechanics is that a problem with it may be that people threw pebbles in ponds before they looked at the very small and it is too successful. There is also a problem with some of those who gave us QM. They seem to have injected it with their theology - in particular their mystic theology. They say that only a conscious observation collapses the wave function. That is to say that the mind has power over matter. I believe it is an encounter with another object that collapses the wave function, that other object being big, small, or a photon. If an electron had as many encounters as a golf ball, it would have the same QM effect as a golf ball, i.e. none we could discern. The only argument I can see against this is that the QM property of concern here has to do with its mass and not with its size. But that brings up an oddity. A QM property of an object is related to its mass and energy. The affect of that property is related to the geometry it occurs in, i.e. an electron going through a slit. The wall the slit is in can be made of anything that is opaque to the object. In QM the result is not due to a relation between the object and the wall that has the slit in it. It is between the object and the space it can move in.

The author's argument that we evolved to fit the earth instead of the earth was made to fit us is very interesting. There is a lot of life on earth. One would think to make that argument more convincing it could be more rigorously looked at. I feel those who believe in evolution are somewhat closed minded when it comes to justifying it, instead believing it on faith. There is room for argument that evolutionists refuse to engage in, bringing some question to their position. I read that the best book on evolution was The Blind Watchmaker (I believe that was the title). If that is the best, the position is poor. The book was more a refuting of the scientific method than a scientific work. All I remember is something about a Mac program that proved evolution and a Boeing 747 whose purpose I do not recall. I also recall the author being quite emotional.

Bryson states that brain size does not matter but relative size does. Why should that be? It suggests that much of the brain is taken up with body function. Since all human brains are about the same size, are fat people less intelligent than thin people because more of their brain is used for body function. Perhaps fat does not count for much brain usage. What about musclemen? It certainly could be that they are less intelligent. Maybe it is not that brainy people are wimps. Maybe it is that wimps are brainy people. In any case the author left a question as to why relative size matters.

Where do we have any evidence that there was ever any increase over time in brain capacity for a given species - rapid evolution of a potent brain? Can we make that statement for humans over the last six thousand years? Is man more intelligent now than he/she was back then? Will someday the Darwin award not be presented.

If there is an "End of Physics" or an end of science, it seems that it is due to people being rigid in their thought; they turned their science into their religion and lost objectivity. This is certainly true for evolution. Darwinism is obviously too simplistic to be a science. It does not explain rapid change within a species, e.g. a species divided by a geographic incident. It does not explain how one species can change into another. If say sperm is

affected by environment and results in change in a species, it would never be found because it would bring Darwinism into question. Is Darwinism now being justified by gene theory? The author says chimpanzees and we have 99% (or whatever) genes the same. What he fails to mention is that the other 1% is a huge number of genes all of which could not have mutated together. Since Darwinism is held as a religion, it is not to be questioned or looked at objectively. The only one to do so that I know of was Wesson in "Beyond Natural Selection". He tried to make a beginning of putting some science into evolution. I don't know what happen with his ideas. I have never seen Wesson's work referred to or anyone reference him. Heretics are not well liked, especially in the science world.

A few last questions concerning life and physics that everyone presenting the subjects seems to skip over. We have heard many times that the magnetic field of the earth has reversed and even now getting weaker leading to a reversal. It would seem that at some time in this reversal the field would be zero or quite near zero. We have also been told that the magnetic field protects life from radiation that would kill it. The obvious question, but never brought up, is what happened on earth when the field was near zero and no longer protecting life? Did the reversals occur before there was any life on earth and not since? Did the reversals take place rapidly, say over a few months supplying enough radiation for mutations, but not enough to kill all life?

Another question I have from the many books I have read is the measuring tools used for the "Big Bang". We hear what happens in the first second. But what is meant by the first second - relative to what? From the frame of reference of an entity moving very fast within the Big Bang did this second take a billion years, whatever that would mean. And what of distance? As the universe expands does our meter stick expand also making change in size meaningless? How is it that the universe expanding makes the distance between galaxies greater, but not the distances within atoms? If the distances within atoms were changing then the forces would also have to be changing so as to make the atom appear not to change. The same could be said for the distances between planets being governed by gravity. Do we really know what we think we know, or is it not being explained to us less able thinkers?

“A Short History of Nearly Everything” is a good book of science for the masses leading to thought.

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