

Some Thoughts on the Demon-Haunted World: Science as a Candle in the Dark

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The Editor has thoughtfully reprinted Fr. Aker's essay immediately before this pseudo-review. I personally am not sure whether this is a benefit or a curse. I am more inclined to the latter, because Bert writes so much more "legibly" than I do.

*A few months ago, while I was in a more than usually penitential mood, I decided to review the latest book by Dr. Carl Sagan. It has the very interesting title *The Demon-Haunted World Science as a Candle in the Dark*. Dr. Sagan does seem to be demon-haunted, or hag-ridden as the case may be. Reading this book carefully was a penance for me but one which had a strange result. I had expected to grow even more frustrated with Sagan, but I ended up pitying him and praying for him. I hope that the reasons for this will become apparent in this treatment I really don't want to call it a review.*



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Sagan's book is such a scatter-shot of opinion (digested and undigested, if you'll pardon the mixed metaphor) that it is almost impossible to react to it in a systematic way. Consequently, my own reaction will be far less than systematic and probably the more human for that.

I am told that at one time good reporters were instructed to ask the five "W-questions" (and relate the answers): who, what, where, when and why. Another question might well relate to how was the above accomplished (or not accomplished). The answers to these questions would validate the story and, in that sense, lead to the "truth" of the report. Dr. Sagan often invokes "truth," but never clearly points out that "why" at least is not a scientific category. Nor does he mention why "why" is not a scientific category.

Sagan remarks (pp. 322-23):

But there's something else: I find many adults are put off when young children pose scientific questions. Why is the moon round? Why is grass green? What is a dream? How deep can you dig a hole? When is the world's birthday? Why do we have toes? Too many teachers and parents answer with irritation or ridicule, or quickly move on to something else: What did you expect the Moon to be, square?" Children soon recognize that somehow this kind of question annoys grown-ups. A few more experiences like it, and another child has been lost to science. Why adults should pretend to omniscience before 6-year olds, I can't for the life of me understand. What's wrong with admitting that we don't know something? Is our self-esteem so fragile?

What's more, many of these questions go to deep issues in science, a few of which are not yet fully resolved. Why the Moon is round has to do with the fact that gravity is a central force pulling toward the middle of any world, and with how strong the rocks are. Grass is green because of the pigment chlorophyll, of course we've all had that drummed into us by high school but why do plants have chlorophyll? It seems foolish, since the Sun puts out its peak energy in the yellow and green part of the spectrum. Why should plants all over the world reject sunlight in its most abundant wavelengths? Maybe it's a frozen accident from the ancient history of life on Earth. But there's something we still don't understand about why grass is green.

. . . . But every question is a cry to understand the world. *There is no such thing as a dumb question* (italics mine).

That last sentence being true, I'd like to refer to an earlier set of statements by Dr. Sagan. I put it in a spirit of questioning. Would Sagan be put out with me if I put a further question asking why gravity is a central force? How might he respond beyond saying that it is a central force. "Why" doesn't enter into it. That's true, but only because final causation is not treated in science. How does the dissertation on why grass is green differ from he calls "special pleading" (cf. 213) in a chapter entitled "The Fine Art of Baloney Detection." It is part of what Sagan calls his "baloney detection kit." Strangely, he doesn't mention that that kit is really nothing more than a list of rhetorical fallacies developed by the ancients. It was well known and widely used by the "ignorant and superstitious" medieval logicians, philosophers and theologians. These people of course were not "skeptical" one of Sagan's great scientific virtues.

special pleading, often to rescue a proposition in deep rhetorical trouble . . . (*How can there be an equally godlike Father, Son, and Holy Ghost in the same Person? Special plead: You don't understand the Divine Mystery of the Trinity* (italics his). . . .

My question (and remember: "There is no such thing as a dumb question") is this: why is the response "we'll know more later" why grass is green is not special pleading while "we'll know more later" about the Trinity is special pleading? Actually, the answer to that, in Dr. Sagan's thought, may be less difficult to discover than a we might imagine. It probably comes down to the simple statement: "That's different."

It is indeed different because Dr. Sagan does not admit to an afterlife. He does not admit to anything that cannot be quantified. After all, Sagan is a materialist and we should not expect him to deal very seriously with quality, even though he dwells on awe. If we grant him his assumptions, though, we will have to grant him his conclusions. The devil is almost always in the assumptions. What are Dr. Sagan's assumptions?

Like all "modern scientists" and opposed to most "modern deconstructionists," Sagan presumes that the universe is knowable, is intelligible. Otherwise, the science he loves would be impossible. But, one wonders why Sagan didn't note that this concept of the intelligibility of physical creation is both a Jewish and Christian notion not a product of the Enlightenment. It is a clear position by the time Basil of Caesarea (ca 350 AD) wrote the Hexaemeron. Modern science depends utterly on the commensurability of the human mind with physical reality. I wonder why this wonder is not met with more wonder not only by scientists but also by every thinking person. Is it not an awesome thing? Is there any necessity that such harmony exist?

Sagan builds what he considers an unassailable case on science's success at predicting eclipses. He says:

Think of how many religions attempt to validate themselves with prophecy. Think of how many people rely on these prophecies, however vague, however unfulfilled, to support or prop up their beliefs. Yet has there ever been a religion with the prophetic accuracy and reliability of science? There isn't a religion on the planet that doesn't long for a comparable ability precise, and repeatedly demonstrated before committed skeptics to foretell future events. No other human institution comes close.

Is this worshipping at the altar of science? Is this replacing one faith by another, equally arbitrary? In my view not at all. The directly observed success of science is the reason I advocate its use. If something else worked better, I would advocate something else. Does science insulate itself from philosophical criticism? Does it define itself as having a monopoly on the "truth"? Think again of that eclipse a thousand years in the future. Compare as many doctrines as you can think of, note which ones are precise, and which doctrines every one of them subject to human fallibility have error-correcting mechanisms built in. Take account of the fact that not one of them is perfect. Then simply put the one that in a fair competition works (as opposed to feels) best. If different doctrines are superior in quite separate and independent fields, we are free to choose several but not if they contradict one another. Far from being idolatry, this is the means by which we can distinguish the false idols from the real thing [from real idols, I ask?].

Sagan continues with more of the same sort of thing. It seems strange (inconsistent?) that he uses the logical fallacy of setting up a straw man (cf. p.215): caricaturing a position to make it easier to attack. How many religions are in the business of predicting (not prophesying, as Sagan would have it) the incidence of eclipses? I have been a Christian for 65 years and a priest for 32 and no one has ever asked me to predict the occurrence of an eclipse. And "No, Dr. Sagan, I don't as a Christian yearn for a comparable ability to foretell future events." Christianity is profoundly interested in prophecy not in predicting the future. For a Christian, prophecy is proclaiming the wonderful works of God, not in predicting eclipses. And, as an aside, when was the last successful prediction of an earthquake? Not lately. Will such predictive ability ever be available? Probably. But not yet.

There is a very interesting clue to Sagan's thinking in the paragraph immediately preceding those quoted above.

. . . . If you want to save your child from polio, you can pray or you can inoculate. if you're interested in the sex of your unborn child, you can consult plumb-bob dangles all you want (left-right, a boy; forward-back, a girl or maybe it's the other way around), but they'll be right on average only one time in two. If you want real accuracy (here, 99 percent accuracy), try amniocentesis and sonograms. Try science.

What's apparent from this aside from using straw men is the either/or nature of Sagan's view of reality. This either/or mentality pervades the entire work. It never seems to occur to him that perhaps one might both inoculate a child against polio and also pray for the child not to get polio. In almost every way Sagan reveals himself as an either/or not a both/and. This, is a crucial observation. Sagan has ruled out the possibility of the reality of anything that escapes the scientific method.

For Sagan it's either science or religion. If you want predictive ability you turn to science or religion. If you want skepticism you find it either in science or religion. But almost by definition, Sagan sees the believer as gullible, uninterested in fact and willing to believe almost anything. I suspect that it might come as a surprise to him that Christianity has to know and live in the world-that-is. That, however, may come as a surprise to some Christians as well.

We believe in an incarnate God, born of a woman as we are. We look forward (not by way of prediction) to a future final stage of our lives. We must know both the universe as it is (or as best we can know it at present) and the will of God (as best we can discern it). These are not options for Christianity. There is no either/or. For us, it must be both/and. This, of course, does not mean that each individual Christian must know as much as possible about the creation but the Faith must do its best.

Sagan makes a big deal about science being a self-correcting operation. Well, if he took the trouble, he would discover that Christianity has always been self-correcting. The error is known as heresy. Quite often, Ecumenical Councils were called precisely to correct interpretations of the Catholic message that were alien to the truth.

Also, at one point Sagan with pride talks about probing arguments in scientific meetings as if it were true only of science. Perhaps he has never sat in on a philosophical or theological seminar.

Another problem Carl Sagan has concerns visions. On page 145 he writes: "Both Jeanne d'Arc and Girolomo Savonarola were burnt at the stake for their visions." In the case of Joan of Arc, the reason for her burning at the stake was political, her visions were at best secondary. The immediate reason, as I say, was political the English were losing. Sagan is also deeply bothered, so he says, by the prosaicness of medieval Marian apparitions. He make the following comment on the ordinariness of "Mary's message":

... Why not important and prophetic messages whose significance could be recognized in later years as something that could have emanated only from God or the saints? Wouldn't this have greatly enhanced the Catholic cause in its mortal struggle with Protestantism and the Enlightenment? But we have no apparitions cautioning the Church against, say, accepting the delusion of an Earth-centered Universe, or warning it of complicity with Nazi Germany two matters of considerable moral as well as historical import, on which Pope John Paul II, to his credit, has admitted that the Church has erred.

Is Dr. Sagan thinking more about himself than about a Spanish peasant in the 13th century? Try to imagine the reaction of the latter to a message about Nazism that would be appropriate to someone in the 20th century. Would he or she have any idea of the nature of Nazism or even what Germany was? Would he or she have gained any knowledge of God's will to be applied to his or her life? Sagan's idea of the purpose of a vision is vastly different, evidently, from God's. God seems monumentally unconcerned whether a 12th century vision helped Carl Sagan more than the person to whom it was given. This stance of Sagan's, however, gives some insight into his reasoning and desires.

In line with that, although the line of argument is certainly not confined to him, Sagan must mention the Inquisition and the "medieval (so he says) witch hunts. I wonder why he doesn't include in this list of horrors the glorious accomplishment of the Goddess Reason the Reign of Terror. Oh well, maybe it would have made the book too long.

There are many other examples of Sagan's myopia but I will conclude with just one more.

If you accept the literal truth of every word of the Bible, then the Earth must be flat. The same is true for the Qu'ran. Pronouncing the Earth round then means that you're an atheist. . . .

What nonsense! I suspect that Sagan knows that this is nonsense, but it's an argument. My counter-statement would be to ask Sagan whether, if the Bible had pronounced the Earth round, he would be a believer. If so, he has an extremely superficial notion of Judaism and Christianity. If not, why does he even bring it up? It's easy to ridicule the notions of 3,000 years ago. But what data did the ancients have beyond their own personal experience? It would have been extremely difficult if not impossible to posit a round Earth. To turn the tables just a bit, can't we snicker a bit at LaPlace's nebulous theory the great scientific pronouncement of less than two hundred years ago?

As I have said, there are many such examples like this throughout the book. This makes a rather jaded reader like myself wonder whether Dr. Sagan is engaged in page after page of special pleading. I must admit that the book reminds me of a nine year old whistling past a graveyard. Sagan opines:

. . . many religions devoted to reverence, awe, ethics, ritual, community, family, charity, political and economic justice are in no way challenged, but rather uplifted, by the findings of science. There is no necessary conflict between science and religion. On one level, they share similar and consonant roles, and each needs the other. Open and vigorous debate, even the consecration of doubt, is a Christian tradition going back to John Milton's *Aeropagitica* (1644). Some of mainstream Christianity and Judaism embraces and even anticipated at least a portion of the humility, self-criticism, reasoned debate, and questioning of received wisdom that the best of science offers. . . .

The religious traditions are often so rich and multivariate that they offer ample opportunity for renewal and revision, again especially when their sacred books can be interpreted metaphorically and allegorically. . . .

Sagan then goes on to congratulate Pope John Paul II's acknowledgement "that Galileo was right after all, that the Earth does revolve around the Sun. . ." It seems to escape Sagan's understanding that Galileo was not condemned for being wrong he was condemned for going back on his promise to teach this only as a theory. Sagan must certainly be aware that Galileo's "proofs" did not prove and that his contemporaries knew it. So much for history! Clearly, Sagan worries only about religions that proclaim their message "in season and out." If they're willing to bend and shift with the scientific winds, they're terrific. It might come as a shock to him that at least some of those religions he approves of still believe and proclaim that Jesus Christ is both God and man.

As a final riposte to one who lives in a "demon-haunted world" and feels perfectly free to call science the opposite of superstition (which includes any kind of belief in anything that cannot be quantified), I'd simply point to vocabulary. Sagan is big on *truth* (as he understands it), *awe*, *wonder*, *evidence* (again, as he understands it) and independence of authority (without yielding the authority of scientific methodology and enterprise. He rarely (if ever) uses such words as *goodness*, *kindness*, *hospitality*, *beauty* and *love*. That tells me all I want to know. I am told that Sagan has written in *Parade Magazine* that he'd like to believe in God, but can't. I urge that we all pray to God to move him beyond the wish to the deed, but, if that can't be done, to accept the wish and save Dr. Sagan to enjoy the real richness of the creation and of the Kingdom.