BOOK REVIEW

The Demon-Haunted World

SCIENCE AS A CANDLE IN
THE DARK

by Carl Sagan

Random House

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REVIEWED BY FINTAN R. STEELE

Assistant Editor, News

Nature Medicine

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Monsignor Riley, who otherwise was a kind, soft-spoken priest, would regularly erupt into rage at the end of Sunday mass. The exodus of many of his parishioners after communion but before the closing blessing, although technically fulfilling their "Sunday obligation," punched his anger button. He would launch into a tirade about the imperfect faith of those who left early; harsh words that fell only on the ears of those either too pious to do the same, those whose cars were so deeply buried in the parking lot that a few minutes more in church wouldn't matter, or those (including myself and my siblings) who were forced to sit there by the fastidious piety of our parents. I remember feeling a guilty self-righteousness: I was a "better Catholic" than those who left, but I was also bearing the brunt of their punishment. It was

my first experience of "preaching to the converted," and the memory returns every time I experience the homiletic harangue of someone with whom I agree.

Thus my reading of Carl Sagan's latest book, *The Demon-Haunted World: Science as a Candle in the Dark*, was colored throughout by Msgr. Riley and the feeling that, although I agree with Sagan's words, I am at least in part to blame for the "encroaching darkness" he assails. Anyone who disagrees with Sagan will not read beyond the first few pages of the book. However, Sagan's aim is not directed at the unbelievers: He is trying instead to galvanize those believers still present, and maybe a few waverers at the door.

In Sagan's universe, the "darkness" is not, as many scientists believe, a widespread ignorance of basic scientific facts. Nor is the enemy a misperception of science and scientists (although he does assail popular culture's science stereotypes, with the notable exception of the Professor from Gilligan's Island). Sagan's darkness is credulity or gullibility, a mind-set opposed to the skepticism that is the hallmark of scientific method.

The reason Sagan believes the darkness draws closer is that there are fewer people either willing or able to teach others how to think critically. "It is much easier to present in an appealing way the wisdom distilled from patient and collective interrogation of Nature," writes Sagan, "than to detail the messy distillation apparatus."

Having established this as his central theme, Sagan goes on to document some of the more obvious excesses of what he calls pseudoscience. Seven chapters deal with the phenomena of extraterrestrial visits in the form of UFOs, crop circles and alien abductions. The last of these provides the most entertaining reading in the book. It could be summed up by way of a joke told many years ago by the comedienne Joan Rivers: "A UFO has never landed in Harvard Square."

Sagan tries to explain alien abductions as hallucinations. Although I am quite willing to agree with him, there is still some abductee testimony that makes me wonder just a bit. Sagan would no doubt argue that my wavering on this point is a sign of just how strong is the human emotional need that pseudoscience can fulfill. It's true: no matter how much I approve of the revelations provided by professional debunker James "The Amazing" Randi, I am always a bit disappointed when some sen-

sational claim is demonstrated a hoax.

According to Sagan, it is this human desire to transcend our physical limits that places us in danger of swallowing pseudoscience, because true science restricts us to that which is measurable. Perhaps that is reductionism, but Sagan suggests that opposition to reductionism may be out of "a misplaced love for mysticism."

Needless to say, such words create discomfort at the interface of science and religion. Sagan does say that these two endeavors are not mutually exclusive, but argues that the burden of proof falls on those who believe. He also makes a distinction, although not explicitly, between faith and belief, that is more accurate than that found in most modern religious writings. Nonetheless, anyone who harbors doubts about their religious beliefs will likely find them even more shaky after reading this book.

Sagan saves his harshest critique for those proponents of what he calls "antiscience" — individuals or governments who know better, yet impose their will or beliefs over the findings of scientific method. Here he is at his most persuasive, arguing that science's openness to new data and its willingness to be wrong separate it from the dogmatism of the antiscientists.

Is the darkness drawing closer? A recent op-ed piece in the *Washington Post* suggested that the only thing getting worse is the level of funding, and that is what is now causing scientists to squawk about the lack of public interest in science and education. I don't know if that's true; the interest of people uneducated in the sciences appears the same now as it always has been. However, what is bothersome is the attrition: Educated people (a significant number of them scientists) are embracing pseudoscience and antiscience. A recent trip to the "literati" bookstore in Washington, DC, was an eye-opening experience: the medicine and health section contained mostly books on alternative medicine, mind-body healing, natural remedies and nutrition guides that leaned heavily toward antioxidants, the dietary supplement *du jour*. There were few books even remotely scientific. It was a discouraging experience, but it also made me realize that preaching to the converted isn't necessarily a bad thing. It's nice to be reminded of what drew us to science in the first place. Perhaps Carl Sagan's words serve most to strengthen us in our efforts to hold the darkness at bay.