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## Weirdness!

What Fake Science and the Paranormal Tell Us about the Nature of Science

### by Taner Edis

"With erudite detail physicist Taner Edis shares insights on best practices gained from many years of teaching critical thinking to undergraduates, and . . . takes the reader on an intellectual journey wherein the probing of weirdness shines a bright philosophical light on the foundations, and importance of, science."

—Raymond Hall, PhD, Professor of Physics, California State University, Fresno

"Taner Edis is the science teacher we all need and deserve.

The next best alternative is this book."

—Johan Braeckman, PhD, Professor of Philosophy, Ghent University

As the world grapples with multiple pressing threats—from a protracted pandemic to the effects of a growing environmental crisis—scientifically-sound solutions are as important as ever for our collective safety and well-being. Yet, widely shared social media posts, heated political debates, and even friendly

backyard discussions are awash with weird claims and wild conspiracy theories that either run counter to the best scientific data available—or impugn the credibility of scientists themselves. In the face of such post-truth attitudes and opinions, it is no longer enough for scientists, pundits, and activists to respond by simply asking the public to trust science—the public itself must be better educated about how science works, and why science is essential.

With the goal of combating this broad public distrust of—and popular misunderstandings about—science, Truman State University physics professor Taner Edis has written *Weirdness! What Fake Science and the Paranormal Tell Us about the Nature of Science* (Pitchstone, November 2021, paperback, \$16.95). By exploring many of the odd beliefs embraced by large sections of the public that are rejected by the scientific mainstream, he makes the case for science in a way that pro-science memes and slogans simply can't. "One reason weird beliefs are so popular is that they are attractive and fun," says Edis. "Using weirdness as a device to discuss science introduces an element of fun that prevents philosophical arguments from becoming dry and technical, and that helps soften anti-science reactions."

Here, the approach to the topic is key. "Unlike most books on unscientific beliefs," Edis adds, "I don't concentrate on the debunking—I mostly take it for granted that creationism, Bigfoot, etc., are false—but explore what the falsehoods tell us about the nature of science. I try to be honest about science's imperfections, and so I hope to engage those who might normally be suspicious of mainstream science to consider other things I have to say. At the same time,

pro-science skeptics and scientists themselves who read *Weirdness!* will end up with a more sophisticated, more critical view of what science is all about and why it succeeds."

Drawing a picture of science that does not rely on checklists or a predetermined scientific method, Edis rejects a sharp boundary between science and religion, while explaining how to negotiate their real differences. He points to a long track record that speaks to the effectiveness of this approach. "Weirdness! is not just based on my decades-long experience in research and teaching about physics and the history and philosophy of science regarding fake scientific and paranormal beliefs. It also draws on a course I have long taught on these topics, called 'Weird Science.' My experience teaching this course to undergraduate students of all backgrounds and with a wide variety of belief systems has informed this book. I use the lessons from this course and my students' reactions to them to frame many of the questions and topics I address in the book."

Denials of science may cause no end of trouble, but so too does naïve expectations about science, Edis cautions: "Skeptics and scientists typically account for weird beliefs through a combination of cognitive biases and reasoning errors. In the right context, however, even rational belief-forming mechanisms can lead to false beliefs. For example, in a highly nationalist environment, it can be rational to believe false historical narratives. Rationality is more complicated and more context-dependent than skeptics and scientists often appreciate."

While Edis takes special issue with populist anti-science movements, he finds plenty to criticize even in political stances that are seemingly friendly to science. As *Weirdness!* reminds readers, science should not be seen as a mechanism that takes in data and spits out truth. Yes, science and reason are crucial in uncertain times, Edis concludes, but we must not adopt an unrealistically heroic picture of science and turn rationality into yet another empty slogan.

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#### **About the Author**

Taner Edis is a professor of physics at Truman State University. His primary research has been in the history and philosophy of science, addressing questions raised by popular beliefs in fake science and the paranormal. Accordingly, the sign on his office door reads, "Taner Edis, Physics and Weirdness." He has authored and co-edited many books, including *Why Intelligent Design Fails* and *The Ghost in the Universe*. He lives in Kirksville, Missouri.

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