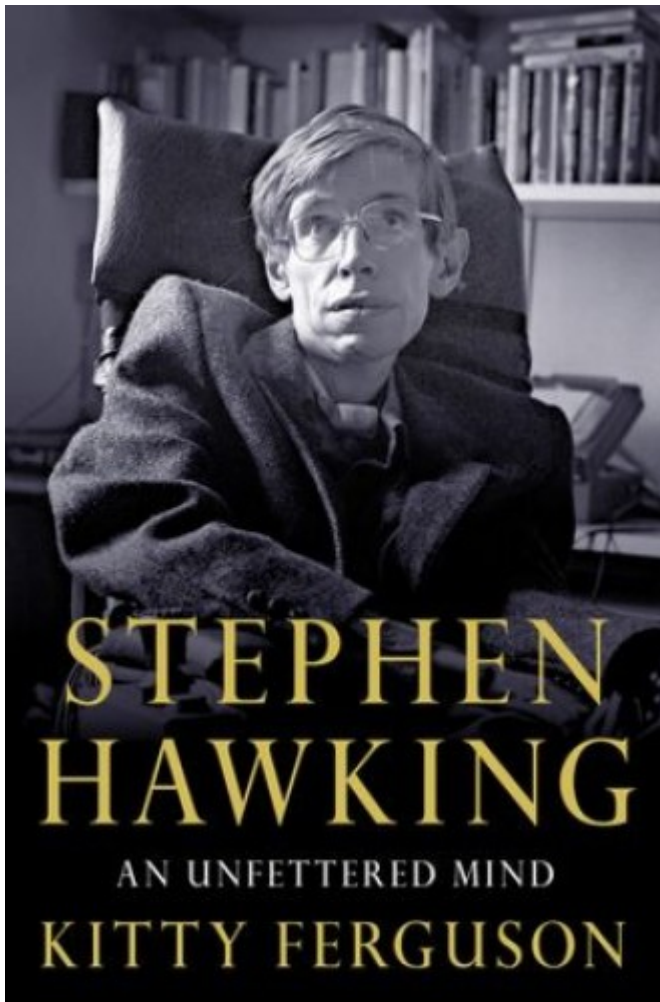


Grand theory

by [Kenneth P. Serbin](#) in the [September 19, 2012](#) issue

In Review



Stephen Hawking

By Kitty Ferguson
Palgrave Macmillan

Throughout most of his career, physicist Stephen Hawking has strived for a theory of everything—a complete, integrated understanding of what makes the universe work, from the smallest of subatomic particles to the incomprehensibly massive expanse

of the galaxies. In the first edition of his best-selling book *A Brief History of Time*, published in 1988, he declared that to achieve the discovery of this theory would be to “know the mind of God.”

Hawking’s own mind with respect to God is tightly intertwined with the history of the search for the grand theory. He has declared himself neither theist nor atheist. He prefers to refer to “God as the embodiment of the laws of physics.”

As Kitty Ferguson points out in her biography of Hawking, it’s difficult to know Hawking’s most intimate thoughts on the matter because amyotrophic lateral sclerosis (ALS), known as Lou Gehrig’s disease in the United States and as motor neuron disease in Hawking’s native England, long ago left him unable to move or speak. He communicates laboriously through a computer that he controls with the twitch of a cheek muscle. Nevertheless, Ferguson’s thorough, objective and insightful account provides us with a good sense of Hawking’s thoughts on God. Launched in the same month as Hawking’s 70th birthday, the book also takes stock of the quest for the theory of everything and the limitations Hawking and others have faced in that search.

Hawking has not abandoned the quest, but he now seems far less optimistic that science can find the ultimate model of how things work. In Hawking’s words, our theories are necessarily inconsistent or incomplete because “we and our models are both part of the universe we are describing. . . . Physical theories are self-referential.”

With the theory of everything, Hawking had hoped to explain uniformly how the miniature (quantum mechanics) is governed by the same principles and forces as the large (gravity and the celestial bodies). Now, however, many physicists and cosmologists have settled, at least for now, on what they call M-theory. Ferguson, herself a scientist, provides a sober assessment of it:

M-theory is not simple. You can’t print it on a T-shirt. It doesn’t fulfill the promise of Wheeler’s poetic words. It doesn’t measure up to the Pythagorean standard, where beautiful clarity is a guide to truth. Does that mean it might be wrong? Hawking’s attitude towards it is not that it is right, or ultimate, but that it is the best we are ever going to do. M-theory is not a single theory. It is a collection of theories. . . . We don’t yet know how to formulate that deeper theory as a single set of equations and arguably never will.

So that brings all of us, including Hawking, back to the question of the Creator. As Ferguson correctly points out, both extremes in the God-versus-atheism debate have used Hawking for their own purposes. “He’s been the hero and villain of both camps,” she writes. He clearly does not believe in the personal God of historical religions, who intervenes in people’s lives; rather, he has preferred a complex, intellectualized approach to the question of the Supreme Being. In some instances, Hawking has angered believers and religious sympathizers—including his deeply faithful first wife, Jane, and a number of scientific colleagues—because of his seemingly dismissive comments about a personal experience of God and about belief in an afterlife, which he views as a form of delusion.

Despite the frustrations and hurt Jane experienced as a result of Hawking’s attitude toward God, she quietly and heroically devoted much of her life to his survival with a condition that kills most sufferers within a few years of diagnosis. She came to express an understanding, compassionate view of his approach:

I think the whole picture for him is so different from the whole picture for anybody else by virtue of his condition and his circumstances . . . being an almost totally paralysed genius . . . that nobody else can understand what his view of God or what his relationship with God might be.

Hawking, who has received ecclesial honors such as an appointment to the Catholic Church’s Pontifical Academy of Sciences, echoes this more nuanced perspective. He once told an interviewer:

It is difficult to discuss the beginning of the universe without mentioning the concept of God. My work on the origin of the universe is on the borderline between science and religion, but I try to stay [on the scientific] side of the border. It is quite possible that God acts in ways that cannot be described by scientific laws. But in that case one would just have to go by personal belief.

On another occasion, he rejected the idea that his science is in competition with religion: “If one took that attitude, then Newton”—who was a very religious man—“would not have discovered the law of gravity.”

In contrast with the image of scientists and physicists as cold and calculating, especially when they express skepticism about religion, these kinds of statements reveal Hawking’s humanity.

Ferguson recalls that in an April 2011 interview, Hawking was asked what moment in his own past he would like to revisit. "His answer was surprising," Ferguson writes. "Not the awards, not the bestseller, not the celebrity, not the discovery of Hawking radiation. 'I would go back to 1967, and the birth of my first child, Robert. My three children have brought me great joy.'"

Near the end of the volume, Ferguson provides a critical synopsis of Hawking and fellow physicist Leonard Mlodinow's 2010 book *The Grand Design*, which represents Hawking's latest systematic attempt to explain the universe. For their model, they demonstrate the lack of a need for a God. But they have still not formulated the theory of everything. "Luckily, a model that includes both belief in God and in science has not been ruled out by either," Ferguson concludes.

This is an important book for anybody interested in questions of God and physics, of who and what we are and where we're going as a species. It is a stimulating and enjoyable read. As so often happens in the practice of science itself, readers can expect to come away with more questions than answers.