

# Science and Fiction

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Andrew May

# Fake Physics: Spoofs, Hoaxes and Fictitious Science

 Springer

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Cover illustration: Scientific vector seamless pattern with math and physical formulas, chemistry plots and graphic schemes, shuffled together. Endless math texture.

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## Preface

In recent years, I've become fascinated by the overlaps—and occasionally fuzzy boundaries—between subjects that aren't normally mentioned in the same breath. That was the idea behind my previous contributions to Springer's "Science and Fiction" series: *Pseudoscience and Science Fiction* (2017) and *Rockets and Ray Guns: The Sci-Fi Science of the Cold War* (2018). The first, as the title suggests, looked at overlaps between science fiction (SF) and pseudo-scientific writings on subjects like UFOs, antigravity, and telepathy, while the second considered the (even more surprising) overlaps between SF and real-world science during the Cold War period.

Soon after I finished writing *Rockets and Ray Guns*, the series editor Christian Caron drew my attention to the considerable number of spoof papers—mostly written as April Fool jokes—to be found in the arXiv online preprint repository. Superficially the papers look just like any others on arXiv, written in traditional academic style, and formatted as if they were scheduled for publication in a professional science journal. As with arXiv as a whole, the spoof papers tend to deal with cutting-edge physics and related fields—the difference being that the research reported is totally spurious and often very funny.

I was reminded of a number of other spoofs written in formal academic style. Best known in the SF community is Isaac Asimov's "The Endochronic Properties of Resublimated Thiotimoline", published in *Astounding* magazine in 1948. Then there's Alan Sokal's hoax paper "Transgressing the Boundaries: Towards a Transformative Hermeneutics of Quantum Gravity", which was published by a social sciences journal in 1996 without the editors realizing it was a spoof. More recently, there have been numerous well-publicized cases of so-called predatory journals—which charge authors for editing and reviewing

services they never actually deliver—accepting spoof papers that consist of little more than gibberish.

Both Chris and I felt there was potential for another book here, but it took a while to settle on the best format for it. If we concentrated too much on spoofs originally written for an audience of professional academics, there was a danger that general readers wouldn't find them funny. On the other hand, the best of the academic spoofs—with the help of a judicious amount of background explanation—can be appreciated by anyone. The same, of course, is true of the kind of spoof “technobabble” often found in SF—which can be especially convincing when it's written by authors who are also professional scientists.

I realized this was turning into another “overlap” book like the first two—in this case, the overlap (and fuzzy boundary) between SF and the more whimsical fringes of real science. As well as the outright spoofs already mentioned, the latter includes highly speculative concepts like faster-than-light tachyons and the “multiverse”, as well as the numerous “thought experiments” used to explain difficult ideas from relativity and quantum theory.

So the result was *Fake Physics*—a deliberately broad term that encompasses a range of different topics. The main criteria for inclusion are that the “fake physics” should be intentional (on the part of the authors) and entertaining—not just to professional physicists but to ordinary SF readers as well. Here is a quick rundown of the book's contents.

The first chapter, “Science Fiction Posing as Science Fact”, starts on what should be familiar territory to many readers: Asimov's original Thiotimeline spoof, as well as a number of follow-ups to it written by Asimov and others. It also takes a broader look at various ways in which fiction writers try to persuade readers they're actually reading non-fiction.

The second chapter “The Relativity of Wrong” (a phrase coined by Asimov) takes a step back to look at the way real science works—and how aspects of its methodology, specifically the formulation of hypotheses, can easily be twisted to create science-fictional (or in some cases, science-factual) “fake physics”.

The third chapter looks at “The Art of Technobabble”. Professional physics has both a language of its own—a mixture of jargon and mathematics—and a literary style, namely that of the academic paper. The latter is particularly important, because both the promulgation of scientific ideas and the furtherance of scientific careers depend on scientists publishing their results.

This brings us to the next chapter: “Spoofs in Scientific Journals”. Some of these are indistinguishable in style, format, and intent from Asimov's thiotimeline piece—the only difference being that they appeared in publications

(either serious or not so serious) aimed at professional scientists rather than SF readers.

Not surprisingly, the appearance of spoofs has a peak around the 1st of April each year—to the extent that the “April Fool” phenomenon requires a whole chapter to itself. Some of these spoofs appeared in traditional print media, but—as already mentioned—their real home today is the online arXiv repository.

So far, all the spoofs discussed have been purely for fun. The ones in the next chapter—“Making a Point”—are funny too, but the authors had another reason for writing them besides making people laugh. This is where you’ll find the Sokal hoax and various “sting operations” against unscrupulous predatory journals.

The final chapter is called “Thinking Outside the Box”. While the “fake physics” here undoubtedly has fake aspects—and is often highly entertaining—it nevertheless carries a serious scientific message. There’s scientific debunking of paranormal claims, thought experiments like the relativistic “twin paradox”, and discussions of other universes governed by different physical laws.

There are some types of “fake physics” you won’t find in this book, such as frauds perpetrated for financial or professional gain. That’s an unsavoury subject, and it fails to meet our “must be entertaining” criterion. Another exclusion is pseudoscience—for the simple reason that it’s already been covered in *Pseudoscience and Science Fiction*.<sup>1</sup>

One final caveat—the word “physics” has been taken in a broader-than-usual sense, to include all the physical sciences—and even some other sciences when we simply couldn’t resist it. Thus, you’ll find things like a spoof NASA report on sex experiments in space and a hoax paper on the clinical pathophysiology of *Star Wars* style “midichlorians”. Surely no one can blame us for including those!

Crewkerne, UK

Andrew May

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<sup>1</sup> Though I couldn’t resist including a spoof of my own on this subject, “Science for Crackpots”, which first appeared in *Mad Scientist Journal* and is included as a short appendix to this book.

# Contents

<b>Science Fiction Posing as Science Fact</b>	1
The Thiotimeline Saga	1
Beyond Thiotimeline	9
A Venerable Tradition	17
References	21
<b>The Relativity of Wrong</b>	23
How Science Works	23
Science-Fictional Hypotheses	28
Not Even Wrong?	39
The Pauli Effect	44
References	47
<b>The Art of Technobabble</b>	49
The Lingo of the Sciences	49
Damned Lies and Statistics	54
Publish or Perish	57
Automatic Paper Generators	62
References	67
<b>Spoofs in Science Journals</b>	69
Spoof Papers	69
Spoof Journals	77
The Ig Nobel Prize	81

A Touch of Humour	84
References	90
<b>April Fool</b>	93
A Day When Nobody Believes Anything	93
The ArXiv Spoofs	99
A Joke Too Far?	106
References	109
<b>Making a Point</b>	113
Scientific Writing, the Lazy Way	113
Predatory Journals	116
Science Wars	121
Fake News	128
References	134
<b>Thinking Outside the Box</b>	137
Science Fact Posing as Science Fiction?	137
Thought Experiments	142
Different Physics	147
The Spectrum of Fake Physics	157
References	159
<b>Appendix: Science for Crackpots</b>	163