Multiverse Theories: A Philosophical Perspective
Simon Friederich
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When theologians and pastors consider science books, they often acknowledge that the best science writing probably combines passionate competence with breadth and objectivity while omitting stridency and declaratory enthusiasm. If so, this book, written over a period of many years, qualifies on all fronts. Simon Friederich is sensitively aware that the issue of the multiverse has many intersections with theology and religion. His work serenely considers a vast array of alternative approaches to the evaluation of multiverse theorization, explaining the history behind these approaches and the philosophical context. He advocates that multiverse concepts do deserve respect within the fields of science, physics, and epistemology, but he sounds numerous notes of caution about claims involving proof or evidence.

Given the fact that articles and books about multiverse speculation have become very prolific in recent years, this new work may serve to calm many waters. The tranquil tone of voice is apparent already in his very first sentence: "Multiverse theories are physical theories according to which we have empirical access only to a tiny part of reality that may not at all be representative of the whole." (3) Those who are adamant about the existence of other universes, as well as those who denounce the entire notion, will find themselves understood and respected by this writer, though both sides are also critiqued, sometimes even sternly.

The author has two PhD degrees, one in philosophy and one in physics, and is currently teaching in the department of the philosophy of science at the University of Groningen in the Netherlands. Significantly, he is also an external member of the Munich Center for Mathematical Philosophy, and his book does include vast swaths of arithmetical reasoning. This is helpful, because theorists in this field of multiverse speculation, especially quantum specialists and string theorists, often use extensive mathematical analysis, including Bayesian probability methods. A deep dive into mathematics is also essential for critiquing commonly related topics such as the Inverse Gambler's Fallacy. The exhaustive bibliography of science, philosophy,

history, epistemology, and mathematics at the end of the volume is, by itself, worth the price of this book.

But for theologians, ministers, and seminarians, a key question remains: Why is the notion of a multiverse important, and why does it evoke such strong passions in theorists differing from Friederich's more urbane and sustained dedication to the topic? Friederich does not forget about this broader cultural and religious situation. One reason the topic is both profound and provocative is because it touches on questions of God, or at least on questions of a grand Designer. The author dedicates the first few extensive chapters to unpacking these debates. The notion of a multiverse, for example, has become one way of resolving the sense that our own universe seems to be amazingly configured for life. Instead of the older approaches that ascribed such fine-tuning to the ingenuity of a Designer, multiverse theorists often suspect that the possibility of a plethora of universes sidelines the God-question entirely. If there are billions of universes, it is no longer surprising that one of them turned out to be the one we are in, and within which we are able to think and breathe.

The questions of fine-tuning and design turn out to be incredibly complex in this particular book. One factor that complicates the situation is what Friederich calls "which design?" In other words, when investigators are open to the concept of a design, the question arises whether there are various options for design, and how researchers would know that a design was present, once they have successfully transcended their own research biases, "self-locating beliefs" and "researcher degrees of freedom" [prospects that are likely impossible]. Although the author does not personally bring up the following scenario, it occurred to me while reading: Suppose we temporarily suspend the notion of an infinite number of universes, and admit to knowing about only twenty of such exemplars, ten of which were designed, and ten of which were not. *How could we ever compare them?* How would we discern, in other words, that ten of them included completely random elements, unlike the other ten species that were intentionally created? If there were universes in which the longevity of the generated galaxies was extremely short-lived, unlike within our own, would this apparent "malfunction" be merely our biased interpretation, or could it be part of the Designer's intention?

Even though proof for multiverses may be permanently elusive, there is still some scientific value in considering the topic. For example, considering the unique features of our present universe can become more intriguing in light of the idea that there might have been, or perhaps presently are, other options, especially as they might ensue in the first micro-seconds of any Big Bang, ushering in original conditions, laws, and parameters that might differ from our own. To import an exegetical illustration from New Testament studies, just like a literary expert might become excessive in trying to show that Colossians was not written by the same author who wrote the more obviously Pauline letters of Corinthians, Romans, and Galatians, a fringe benefit of the Colossian angle might be that everyone now sees how unique Colossians actually is, even if they do not agree that Paul could not have written it. In the same way, multiverse theorists can indirectly highlight what is occurring in our presently known universe even if scientific colleagues do not adopt their multiverse reasoning.

What actually needs explaining, according to multiverse extremists, is not the multiverse, but the bizarre notion of a *single* universe. In terms of the overall history of science, we may have arrived at a place where, for the first time ever, we have thought of comparing two items that probably cannot be compared because we do not have a second example (i.e., another universe), but it would be logically helpful to possess such an item. Scientists and philosophers cannot actually be faulted for having stumbled into this impasse.

> A sobering conclusion is entailed by the combination of two of the views defended in this book: namely, on the one hand, that we should seriously consider the possibility that certain seemingly fundamental parameters of physics might be environmental—i.e. that we might live in some type of multiverse—and, on the other hand, that performing conclusive tests of specific multiverse theories that yield compelling verdicts about their truth or falsity will likely remain extremely difficult, perhaps impossible, in practice. (180)

In light of all the above thoughts, when considering the future of physics, Friederich believes that the numerous multiverse debates do have an additional beneficial result of highlighting two related research areas that have a promising outlook regardless of whether

multiverse thinking itself ever makes more progress. These two areas are (a) the issue of dark matter along with (b) the mysterious conundrum that quantum theories and predictions work very well even though quantum realities cannot be accurately explained. He concludes, regarding the topic of the multiverse, "The overarching lesson of the considerations developed in this book arguably is a humbling one.… Our well-confirmed views of reality may forever be constrained to a tiny bit of something far more vast and far more diverse about which we can merely speculate" (184).

As with many other issues in the history of science, those who believe in God can be found on both sides of the debate. This book is one of the best introductions to the significance of this topic for theology today.

—Nick Overduin