



## **RABBI ELIE FEDER, Ph.D.**

### **MATHEMATICS Ph.D., ORDAINED RABBI, COHOST OF "PHYSICS TO GOD" PODCAST**

Elie Feder received rabbinic ordination from Rabbi Yisrael Chait. He also earned a Ph.D. in Mathematics from CUNY Graduate Center. Since 2004, Elie has been serving as a maggid shiur at Yeshiva Bnei Torah and as a mathematics professor at Kingsborough Community College. He has published many papers and delivered numerous talks on graph theory, his field of mathematical research. Recently, Elie authored a book entitled *Gematria Refigured*, which explores the significance of quantity and fine tuning in Torah, life, and the universe. He has a passion for simplifying complex topics for his students.

After researching and investigating physics and fine tuning for many years, Elie collaborated with Aaron Zimmer to produce the podcast, "Physics to God," a guided journey through modern physics to discover God. The first of its component miniseries elaborates on the fine tuning argument that he presents here. Another miniseries discusses the concept of God – one simple, uncaused existence – in a clear, coherent, and intuitive manner. Through analogies, the podcast ensures accessibility for both experts and laymen. Elie and Aaron are currently working on a book on these topics.

For more information, visit their website, [PhysicsToGod.com](http://PhysicsToGod.com). Also, see Elie's website, [GematriaRefigured.com](http://GematriaRefigured.com), and his podcast, "Gematria Refigured +."

Elie and his wife live in Far Rockaway, New York, with their four children.

# Physics to God: Unraveling the Mystery of the Constants

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Much ink has been spilled over whether the diversity of life on Earth truly points to an intelligent designer or whether it can be explained by the slow process of Darwinian Evolution. While the argument from biology might not be convincing, the recent discovery of fine-tuning in physics changes everything. We now know that our complex universe depends on very precise and unchanging constants of nature that ultimately point toward a unique intelligent cause for our universe.

For years, the mysterious constants of nature – the enigmatic fundamental quantities of our universe, like the mass of an electron or the strength of the electromagnetic force – remained unexplained, posing a significant challenge to the pursuit of a theory of everything. Physicists had made significant strides toward understanding the universe, but the nature of constants like 137.035999139 eluded explanation. As physicists sought a final theory, they confronted the immense challenge of explaining the values of approximately twenty-five constants that underpin the laws governing our universe. Renowned physicist Richard Feynman called this “one of the greatest damn mysteries of physics.”<sup>1</sup>

Then, in the late 20th century, physicists uncovered a clue that altered their perspective – the concept of fine-tuning. While the values of the constants seemed arbitrary in terms of fundamental physics, it became apparent that their precise values played a critical role in the emergence of chemistry, astronomy, cosmology, biology, and other fields. Without the values being within narrow ranges, our universe would be a chaotic sea of fundamental particles that would never combine to form atoms, molecules, planets, stars, life, or galaxies.

Since we couldn't dismiss the discovery of incredibly precise fine-tuning as mere chance, explaining the cause behind these finely tuned values became an imperative. However, a new challenge emerged — how could the future result of a complex universe inform the past value of the constants?

Enter teleological causes – a framework of causation in which future purposes influence the past. The realization that fine-tuning points toward a teleological explanation unveils an astonishing revelation. Namely, that the values of constants have a purpose, the creation of an ordered, structured, and complex universe.

In light of this realization, an intelligent cause, capable of precisely fine-tuning the constants, emerges as the most plausible explanation. This follows from the fact that intelligence, by definition, involves the ability to choose one possibility among many to achieve a specific goal. The selection of values for the constants, meticulously fine-tuned to give rise to a universe far greater than the sum of its parts, serves as a direct indication of intelligence.

The discovery of fine tuning, which highlights the purpose-driven nature of these constants, ultimately points toward one intelligent cause for our complex universe (a cause whose simplicity makes it intrinsically not subject to that same fine tuning). While it is essential that we elaborate further on what can be known about the intelligent cause, the strong evidence for intelligent fine-tuning compels us to recognize the significant implications it holds for our understanding of the ultimate cause of the cosmos – God.

**Footnotes:**

1. Feynman, R.P. (1985) QED, *The Strange Theory of Light and Matter*. Princeton University Press, Princeton, p. 129.