

The Mathematics of the Soul

by [Sarah Voss](#)

Soul, nothing but infinity closing, constantly.

-Phil Cousineau

In Plato's "Myth of Er" the souls, having left their dead bodies behind on earth, line up to choose their new lives according to lot. Those who draw the first numbers receive first choice from the immense pool of possible lives. The departed souls, in other words, rely upon a random process of ordering, i.e., on mathematics, to help determine the nature of their immortality. But mathematics is more than a practical aid to the soul. To Plato and the ancient Greeks, indeed, to a surprising number of individuals throughout history, mathematics has been a way of defining and understanding the soul.

The Pythagoreans believed that everything is number and that one of the manifestations of number is the soul. (1) People didn't just have names. They had/were numbers. And the numbers weren't just hand-drawn symbols. They were living realities. Nor was this notion confined to the ancient Greeks. Graffiti from Pompeii said it simply: "I love her whose number is 545." (2) In medieval times, the author of the *Vita Nuova* fully expected to capture the reader's admiration and regard for Beatrice by describing her as a nine. (3) And today we find a continuation of this assumption among modern-day numerologists. One such metaphysician, for instance, converts the vowels of one's birth name into a number which she calls the "Soul Urge, the soul being that part of you that saw the whole picture when you were between lives. The Soul Urge is what that all-knowing part of you wants you to do, be or attain in this life." (4)

The modern skeptic finds it difficult to appreciate the impact of Pythagorean-type number mythology on the individual life. My own soul urge, according to such calculations, is "nine," which apparently means that I am being asked, by that all-knowing part of myself, to rise above my own personal needs and work for the improvement of society. The catch, I discover, is that I tend towards self-centeredness; my soul goal is to overcome my chronic need for ego-inflation and learn to serve humanity instead. Disturbingly, this analysis "rings true" for me. Even the skeptic in me can't argue with the power of that "nine" reality! The avid Pythagorean number mystic would forego skepticism entirely, embracing "nine" as a living truth and utilizing the knowledge of the number to guide and direct daily living.

Skeptics, of course, abound when it comes to modern-day considerations of the mathematics of the soul. David E. H. Jones, an English physicist who writes regularly for the British scientific journal *Nature* under the pen name Daedalus, typified such skepticism when he spoofingly proposed recently that we weigh [number] the soul by attaching piezoelectric transducers and inertial-navigation accelerometers and other measuring devices to a dying person. "Traditional theology is silent on the spin of the soul," he writes, "though it may predict that the soul of a sinner would depart downward and might weigh less than that of a righteous believer." (5)

Not all contemporary scientists take the mathematics of the soul so lightly, however. Computer scientist Douglas Hofstadter suggests that a mathematical self-subsystem can play the role of "soul." (6) Chaos theorist Ralph Abraham describes the "bicameral world of the soul" as one determined by a bifurcation (i.e., a change in the portrait of the attractors and basins of a dynamical system) in the evolution of the mind. (7) And cosmologist Frank J. Tipler, in *Physics of Immortality*, sets forth the carefully conceived theory that human beings are biochemical computers "completely and exhaustively described by the known laws of physics" and the human soul "is nothing but a specific program being run on a computing machine called the brain." (8) Tipler, moreover, does not simply "set forth" this theory: he "proves" it mathematically, along with the ideas that humans have free will and that we will eventually be resurrected to eternal life. Says Tipler:

...the physical mechanism of individual resurrection is the emulation of each and every long-dead person -- and their worlds -- in the computers of the far future.... [W]e and our computer emulations are the same persons. (9)

Throughout the ages, the common theme among those who dabble in soul math has been a supreme confidence in the truth of mathematical reality. For Plato, says one scholar, "the study of mathematics becomes not merely an indispensable intellectual discipline for the philosopher, but also a practice of imitating God." (10) Thus, in "The Last Hours of Socrates," Plato demonstrates the immortality of the soul by introducing a numerical metaphor for certainty: "...the soul will not admit of death, or even be dead, any more than three or the odd numbers will admit of the even." (11)

Similarly, Descartes held that the body is a biological machine, i.e., mathematically determinable spatial matter. (12) The Cartesian soul, however, is much more than Tipler's abstract mathematical algorithm. It is "knowing" mind, consciousness, the self. It is the aperture to that which is Divine and Good. Significantly, however, Descartes' absolute faith in the truth of mathematics ensures that the bridge across this aperture to the "knowing" self is marked first and foremost by mathematical signs. To "know," for Descartes, meant to "use the long concatenations of simple and easy reasoning which geometers use in achieving their most difficult demonstrations." (13)

Leibniz, one of the two independent authors of our modern calculus, developed his own special version of the metaphysics of the soul which dealt with very basic units, called monads, each of which somehow mirrors the entire universe. Unlike the Cartesian and Platonic philosophies, Leibniz' body and soul are inseparable, though each acts according to separate laws and "are fitted to each other in virtue of the pre-established harmony between all substances, since they are all representations of one and the same universe." (14) The differences in conclusion between such philosophers are more ones of discovery rather than ones of confidence in mathematics. Leibniz, for instance, attributes the Cartesian conviction that the soul could change the direction of the body to the fact that the law of nature, which affirms also the conservation of the same total direction in the motion of matter, was not known. If he [Descartes] had known that law, he would have fallen upon my system of Pre-established Harmony. (15)

There is an underlying arrogance in this last statement which quite probably pervades the work of many who profess to understand the soul through the truth of mathematics. Tipler, for one, is refreshingly honest about this tendency, declaring that "We physicists are by and large an extremely arrogant group of scholars." (16) This arrogance, he allows, stems from the belief that the mathematical reality is the ultimate reality -- "and from our undoubted achievements over the past few centuries." (17) So when Tipler proves his "Eternal Life Postulate" and contends that "[t]he dead will be resurrected when the computer capacity of the universe is so large that the amount of capacity required to store all possible human simulations is an insignificant fraction of the entire capacity," (18) perhaps, just perhaps, we ought to believe him and be comforted.

1. The Mystery of Numbers (New York: Oxford Press, 1993), 15.
2. John D. Barrow, *Pi in the Sky* (New York: Oxford University Press, 1992), 106.
3. Vincent Foster Hopper, *Medieval Symbolism: Its Source, Meaning, and Influence on Thought and Expression*, Ph.D. diss. (New York: Columbia University Press, 1938), viii.
4. Ruth Soderstrom, *Numerology: The Key to Spiritual Evolvment (A Blueprint of the Soul)*, (Tacoma, WA: Metamorphosis Press, 1985), 34.
5. David E.H. Jones, *Nature* (December, 199), .
6. Douglas Hofstadter, *Gödel, Escher, and Bach: An Eternal Golden Braid* (New York: Vintage Books, 1979), 387.
7. Ralph Abraham, *Chaos, Gaia, Eros* (New York: HarperCollins, 1994), 143.
8. Frank J. Tipler, *The Physics of Immortality*, (New York: Doubleday, 1994), 1-2.
9. *Ibid.*, 14.
10. Constantine Cavarnos, *Plato's View of Man* (Belmont, MA: Institute for Byzantine and Modern Greek Studies, 1975), 20.
11. Plato, "The Last Hour of Socrates" Inc. in *Soul: An Archaeology*. compiled & with commentary by Phil Cousineau (San Francisco: HarperSanFrancisco, 1994), 193.
12. Hans Kung, *Does God Exist?* (New York: Random House, 1981), 27.
13. Rene Descartes. Quoted in *Descartes' Dream: The World According to Mathematics*, by Philip J. Davis and Reuben Hersh (San Diego: Harcourt Brace Jovanovich, 1986), ix.
14. Leibniz, Gottfried Wilhelm, *Discourse on Metaphysics and the Monadology*, trans. by George R. Montgomery (Buffalo: Prometheus Books, 1992), 85.
15. *Ibid.*
16. Tipler, xiii.
17. *Ibid.*, xiv.
18. *Ibid.*, 225.