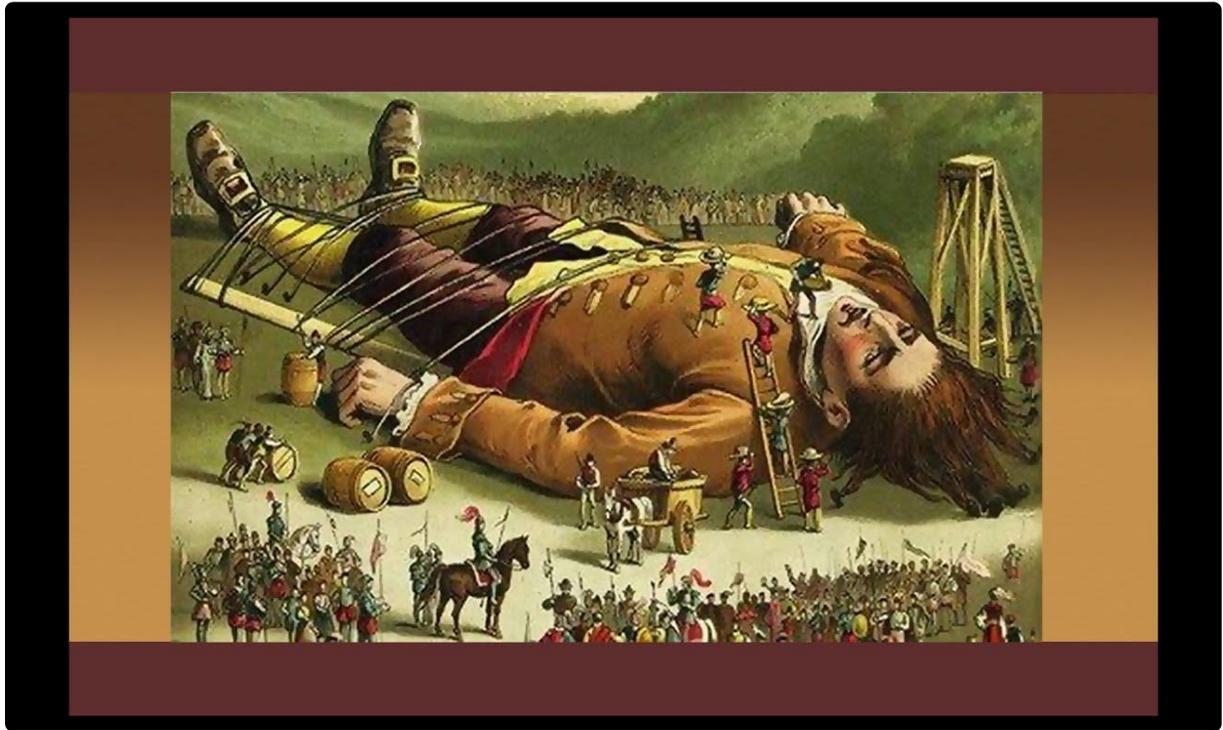


## Are we another Gulliver?--Pondering a new paradigm



In Jonathan Swift's satirical novel, *Gulliver's Travels*, written in 1726, the main character, Gulliver, after a journey that ends in disaster awakens in a strange land, occupied by trillions of tiny inhabitants, the land of the Lilliputians. Individually, the Lilliputians are only a tiny fraction the size of Gulliver.

**Gulliver's fate lies in the hands of his captors. He is bound and held captive as their prisoner. He realizes he is totally reliant upon them for his food, shelter, protection and his right to remain alive.**

**Recognizing his dilemma, Gulliver temporarily comes to terms with his Lilliputian captors during which time they provide him with nutrition and shelter. Gulliver, however, breaks the rules of Lilliputia and is sentenced to death but escapes. The remainder of the book is about Gulliver's travels.**

**Are we like *Gulliver*— suddenly dropped into a strange place at the moment of our birth, a place occupied by trillions of tiny invisible forms of life, made up of five different kingdoms, “The Microbiota”--bacteria, viruses, fungi, protists, and archaea?**

**Every surface of this strange location where the newborn arrives, even the air within it, is filled with “The Microbiota”.**

**“The Microbiota” predate humans by billions of years, existing long before human forms ever appeared. Over those billions of years, they have remained alive and thrived by perfecting survival strategies.**

**Their gene composition, the architectural playbook defining how to make proteins critical for survival, has become 10,000 times more plentiful than genes in the human genome. In numbers, they exceed the total population of cells of the human body by trillions—38 trillion microbial cells versus 30 trillion human cells.**

**Without the cooperation and contributions of “The Microbiota”, humans could not survive.**

**A few of the multiple ways that humans gain benefit from “The Microbiota” include the following:**

- They protect against other microorganisms that are constantly trying to invade and challenge the status quo.**
- They process nutrients that humans select to pass through their bodies and harvest these nutrients to form energy primarily for their own survival but, incidentally, useful for the survival of human body cells.**
- They produce vitamins and amino acids that they share with human cells needed for human growth and development.**
- They activate and deactivate drugs and other chemicals that humans swallow**

**perhaps defending themselves against the toxic effects of these substances on their existence.**

- **They generate signals that regulate the human immune system, moderate human hormone production, and control the orderly cycles of birth, death, and renewal of human cells.**

**And more. . .**

**Faced with such an overwhelming and dominant force as “The Microbiota”, it would seem that for humans, the choice of mutualism appears to offer the most opportunities for humans to thrive.**

**Although these functions appear to benefit the human form, it’s arguable that their primary purpose is part of the survival**

**strategies of “The Microbiota”, and humans have merely evolved methods to take advantage of them.**

**If we adopt the paradigm that we are “Gullivers” in a universe of varied, prolific, and powerful organisms, then we are faced with the choice and challenge of either coexisting peacefully for mutual benefit, as Gulliver did during his early stay in Lilliputia, or become adversaries bent on domination and destruction of the other. It would appear that over the last century medical providers have practiced the latter.**

**If we adopt the paradigm that we are “Gullivers” existing and subservient to “The Microbiota,” will this mean medical science and practices will have to be reexamined and all future scientific medical inquiry be conducted with the question in mind: How**

**does this affect “The Microbiota”? Without answering that question, the study of every diet, drug, medical and surgical intervention might otherwise be incomplete and perhaps misleading.**

**Take home thought: Bugs rule! Be kind to your microbes. Nourish and protect them. Just like Gulliver, your life may depend upon these Lilliputian-like life forms.**