

**To Pope Francis:**

**The Number Theory of the Human Signaler vs BioScientism:**

**The Case of a God-Driven Human Evolution**

*-And A Call for the Return of Judeo- Christian Values-*

Dear Father Francis,

The ever-expanding technology revolution is increasingly challenging the fundamental beliefs and teachings of Christianity from the existence of the God of the Bible to Judeo-Christian moral values. The pace of this change is accelerating. If left unchallenged, it may become irreversible. What I call BioScientism--a blend of atheism, Neo-Darwinism and scientism and its offshoots--is effectively promoting the message that evolution is a mechanical, Godless process. It is playing a major role in fueling this movement away from traditional values, especially among the young.

The belief that God created both man and woman is the cornerstone of the Bible and biblical teachings. Judeo-Christian values are inextricably connected to this assumption. If, however, evolution is believed to be solely due to the physical-chemical forces of mere matter, then it naturally follows that belief in God will weaken, as well the belief and exercise of Judeo-Christian values.

As a concerned physician, I am proposing in this letter, contrary to the message of BioScientism, that the existing weight of scientific evidence supports a God-driven evolution based on a new theory, the Number Theory of the Human Signaler.

This letter is meant as an educational document to be read by those leaders who impact the mindset of diverse cultures from Millennials to us oldtimers.

As we both know, philosophical and theological arguments are never definitive. But it seems to be almost totally unrecognized that arguments based on pure science alone also are never definitive. What is presented in this letter is simply a weight-of -evidence position to be discussed and expanded upon.

I hope you find it worthy enough to help my foundation reach out to the appropriate audiences and encourage them to read this letter and open the door to discussion.

Pax tecum,

Stephen L. DeFelice, M.D.

Chairman, FIM, the Foundation for Innovation in Medicine

## Summary

BioScientism presents a serious challenge to the Judeo-Christian belief system. This challenge is particularly acute among “The Millennials,” that is, those born between the early 1980s and early 2000s. In the US, there are about 75 million Millennials and they are becoming the most influential demographic group in the nation.

The conflict between Judeo-Christian beliefs and moral values and mechanistic materialist BioScientism will never be won by logical scientific or philosophical arguments put forth by either side. This paper proposes a new method of resolving this debate—in favor of the traditional Judeo-Christian perspective. Two approaches are employed:

- The first is the “Number Theory of the Human Signaler” which uses the objective, scientific method.
- The second is called “Seven Billionism,” which takes into account the life experiences and insights of the average human being regarding what one can know.
- The new “Hic et Nunc Q&A Survey Format” is used to gather the data needed for this approach. The information must be delivered in brief language, *based on science, mainly numbers*, and be clearly understandable

This method will provide the objective evidence needed for a successful challenge to Bioscientism. It will contrast the Number Theory of the Human Signaler with BioScientism. My approach demonstrates that the weight of all the evidence supports the existence of God-driven evolution. In addition, it can form the basis for a vital “Second Counter Reformation” which shows that scientific evidence supports the existence of a personal God.

Extraordinary claims require extraordinary support—which follows in the section, Scientific Evidence to Support the Number Theory of the Human Signaler (page 18).

**BioScientism vs the Number Theory of the Human Signaler:  
Based on the Overall Weight of Evidence,  
Which One Makes More Sense?**

Contrary to what is increasingly taught, promoted and believed, the weight of scientific and other evidence supports the existence of a God-driven evolution. What I call BioScientism is the triad of atheism, Darwinism (Neo, or otherwise) and scientism, which, though separate, functionally overlap and synergize in their educational efforts to preach the opposite of Christianity. A core belief of Christianity is that God created man and woman. If successfully challenged, then it follows that Christianity itself, as well as Judeo-Christian values, will be significantly weakened. This is happening today.

All things that happen are dependent on something which makes them happen. This “something” is, in science, called a “signal.” In a single human being, at any given point in time, there are mega-trillions of signals going on to maintain life. For example, the 10 billion nerve cells or neurons in the human brain, weighing only three pounds, have 100 trillion synapses. These are the neuronal connections that send necessary signals to keep the mind and body doing their complicated mental and physical functions. There are other mega-trillions of signals going on at the same time and continuously over a lifetime which make us conscious of ourselves.

It is not generally appreciated that mathematics, the gold standard of science, has significant limitations. For example, it lacks the ability to determine whether these numerical events are coordinated by a general

signaling force, the Human Signaler, or by random, chance events based on intrinsic physical properties alone. This leaves us with only one option: to turn to the weight of evidence to make a judgment.

In order to do so, two approaches are employed. The first is based on scientific objectivity and the second on what I call “Seven Billionism.” The latter simply deals with how the majority of earth’s seven million inhabitants would respond to life’s general experiences and lessons learned over and above, but not excluding, those of science. It is concluded that “Seven Billionism” trumps scientific objectivity with respect to the acceptance of the existence of the Human Signaler. Once accepted, the weight evidence supports, among other possibilities, *the potential existence of a God driven evolution.*

To establish credibility, it is essential to begin with this truth: all arguments regarding the causes of evolution and human existence are faulty, falling short of certitude. And they always will be. All the attempts by the mightiest of minds, each with their approximate 400 billion brain cells and 100 trillion synapses housed in their three pounds of flesh, have failed. They have not even come close. The belief that the biblical God is responsible for our existence is primarily a matter of the mysterious signals of religious faith.

So where does that leave us? As part of life’s decision-making process, humans rely on the weight of evidence presented to them from buying a car to rearing a child. In our current information-laden world, there is little time to grapple with complex, analytical arguments. Analogies and other examples are by far the most effective, persuasive ways to make a point.

Both positions employ a substantially different analytical approach. BioScientism travels back in time to the origin of life up until today. It

largely attributes our existence to the interaction of random genetic mutations without a guiding hand. It ignores Ramsey's Theory and the Pigeonhole Principal, which both demonstrate that complete randomness is impossible. Also, the emerging science of epigenetics demonstrates that gene function is altered during life by the interaction of the living organism with the environment. It is not controlled by random mutations. Despite these realities, BioScientism continues to march on.

The Human Signaler theory, instead, employs the Seven Billionism analytic approach. It is a concrete, quantifiable approach based on human signaling numbers in an existing human being.

Though the endpoints of the theories are the same, i.e., the existence of a human being, the ways in which this happened proposed by each argument are profoundly different.

What is extremely encouraging is that the differences, if clearly presented, are not complicated and would be readily understandable by a broad swath of humanity.

BioScientism proposes that the truth can only be known by employing objective, quantifiable scientific methods and/or logic in all walks of life, from science, to the humanities, to the human condition. Thus, if you cannot objectively find and measure God, then he must not exist. But even in the sacrosanct scientific fields of mathematics and physics, where it is safest to test this general theory, there are insurmountable limitations in arriving at truth. The theory falls apart. For example, the mathematical formulas for the four sources of energy--gravity, electromagnetism and weak and strong nuclear forces--are believed to be objectively defined and universally accepted. Not so.

Let's take gravity as an example: When an apple falls from a tree, scientific methods can objectively measure its speed, its time of fall to earth and its force, correctly attributing them to gravity. Now the surprise: We have no idea what gravity is and why it does what it does. Let's take another example: Einstein's famous widely undisputed formula,  $E=mc^2$ . Using this formula, one can predict the amount of energy released by a nuclear bomb. But, as with gravity, we have no idea why this tremendous energy exists and, furthermore, why it is released. The essential nature of all scientific discoveries is unknowable. One can always ask "why" after each single discovery is made for without ever arriving at an ultimate answer.

To repeat, with the Human Signaler theory, we employ the Seven Billionism analytic approach. This proposes that truth can better be known by what an individual experiences during the entire act of living and which manner can also be shared and confirmed by earth's seven billion inhabitants. It involves observation, experience, analysis, judgment, feelings and action, among others, involving multiple megatrillions of signals which occur continuously throughout a lifetime on which judgments are made. It embraces the *total human experience, including the objective scientific methods and logic of BioScientism used in its interpretation of human evolution.*

Needless to say, it is vastly broader in scope than that of the narrowly focused BioScientism when assessing the weight of evidence of a situation. Seven Billionism can recognize an honest man or a fool whereas BioScientism cannot. It tells us vastly more about life than BioScientism, including life's guiding principal, common sense.

### **The Essential Hic et Nunc Q&A Survey**

The uniquely difficult challenge is how to present the weight of evidence which favors the existence of the Human Signaler simply and persuasively. If this evidence is recognized as true, then what other doors might understandably open?

What comes to mind is the use of what I call the *hic et nunc* or the *here and now* question and immediate answer method, which, in my experience, often presents a complicated argument with far greater simplicity and clarity than a sophisticated, ponderous philosophic approach. Also, it minimizes the bountiful, natural biases of the mind by not giving an individual time to recall them.

The advantages of the immediate response *hic et nunc* approach dawned on me when I was a teenager. I believe it was G.K. Chesterton who proposed that if a dung heap were deposited in a room and the door then closed, and before the day ended the door was suddenly opened and the dung heap was gone and, instead, there was an elephant, most everyone, from BioScientism advocates to seven billionists, would ask, “Who put the elephant in the room?” Using this technique, a survey is an extremely effective way not only to mathematically quantify the results, but also to easily “market” them to targeted populations. Uncomplicated “yes” or “no” or “check” one’s response to simple survey questions is one such technique.

The following are such two *hic et nunc* sample questions along with the survey formats:

“There is a continuous flow of mega trillions of human signals and resulting signaling- induced mental and physical body functions, and there are mega and mega of trillions more.

*‘What, at this very moment, is making them act together to maintain your life?’*

*God or some other personal being? \_\_\_\_\_*

*Some unknowable impersonal force? \_\_\_\_\_*

*By accident without guidance?'* \_\_\_\_\_

-Or-

*'Is there some entity, personal or impersonal, that's making them all act together to maintain your life?'*

Yes \_\_\_ No \_\_\_

Though the final conclusions must await the results of such surveys, I believe that there is reason to be optimistic and assume that the majority of most groups, based on their extensive life's experiences, observations and common sense (aka, Seven Billionism) would conclude that at least something is making it happen. Making that assumption, coupled with an effective educational program, will open the doors of receptivity to the existence of the Human Signaler and its role in evolution.

How would advocates of BioScientism respond to the *hic et nunc* questions and survey? This could only be assessed after they respond to the survey questions. I believe that this would lead to unexpected revelations, including to the advocates themselves.

### **Support for Efficacy of the *Hic et Nunc* Method: Encouraging Analytic Trends**

There are promising objective analytic trends which lend support to the Number Theory of the Human Signaler. For example, virtually all statistical approaches which evaluate the results of studies in all fields are primarily based on classic statistical methods, including those used by BioScientism. But there is an increasing number of studies which employ the centuries-old, but recently revived, Bayesian statistical method. When this approach is combined with complex computer modeling, it demonstrates that many claimed results of studies based

on classical methods are faulty. Because of this, these and other innovative analytic methods will become increasingly employed to avoid error and arrive at greater levels of truth including those in religious sectors.

For example, it's encouraging to note that complex computer systems, using computational modeling, are heavily signaling –dependent and evaluate how signals generated by the individual components of a complex system to achieve a common goal interact with each other, as happens in human beings. This discovery, particularly with the use of additional innovative quantifiable methods, promises to further support the existence of the Human Signaler.

### **From the Existence of the Human Signaler to a Personal God**

When arguments are proposed to prove the existence of God, defensive barriers may rise reflexively. Sometimes hostility springs forth even among Christian church-goers. There seems to be a fatigue and reluctance to engage in what past experiences has shown to be fruitless discussions. They too often lead to depressive and unwelcomed moments because of vanquished hopes.

However, if the existence of the Human Signaler is accepted, it does not require a giant step of thought to accept the possibility of the existence of a personal God. The reasoning supporting the Human Signaler is not complicated and is principally based on numbers- the fundamental tool of modern science. And science-based evidence is essential to support God's existence among a broad swath of peoples of different cultures! Words are not enough.

The unequivocal message of this letter is that in order for something to happen, a signal is necessary to make it happen. It, therefore, is reasonable to postulate that the Human Signaler also must be signaled

into existence by the Signaler of the Human Signaler. The Signaler must possess at least the same signaling capacities of mind and matter as the latter. Whatever this entity is remains unknown, but it can be reasonably scientifically argued that, as one option, the Signaler could be a personal God.

And, as with the Human Signaler, the Signaler must have existed at the beginning of human evolution.

### **It's Time to Cross the Rubicon**

Before I go on, I believe it's important and gratifying for you to know about two courageous Protestant ministers. Thomas Bayes, was a Presbyterian minister, and William Paley, an Anglican one, both of whom published their historic propositions in the 18<sup>th</sup> century. Both took it upon themselves to cross the Rubicon, defend Christianity and support the existence of the biblical God against its attackers.

Bayes believed he could accomplish this by his creative new statistical approach and Paley by his creative analogy of the clockmaker. The clockmaker analogy has supposedly been discredited, even by Catholic philosophers and theologians. But they used classical statistical methods and logical arguments. Here's what I'm wondering about: wouldn't it be a refreshing surprise if, using Bayesian statistics and computational computer modeling, as well as new analytic tools, the reasoning behind Paley's clockmaker analogy would be supported!

The reasons to assert the existence of the Human Signaler on a numerical-scientific basis are supported by Seven Billionism reasoning. They are unquestionably persuasive enough to move forward confidently and justifiably. To repeat, if accepted as a

legitimate theory, even by a small group of influential thought leaders and movers of societies, *it will certainly lead to a legitimate discussion of a potential God-driven evolution and a bridge to discussions of a personal God and Judeo-Christian values.*

There is no doubt that there will be vociferous resistance, sometimes hostile, by BioScientism advocates as well as other influential figures. Unfortunately, because of this reality, there is reason to believe that there will be great apprehension, and even fear, for talented leaders who support the theory to communicate openly in Western secular dominated societies.

Take, for example, the Big Bang Theory, which certainly reasonably brings to mind Genesis where the Bible claims that God, in a short period of time, though maybe not in a trillionth of a trillionth of a second or less, created the universe. What happened after the discovery was announced with great fanfare? Except for certain isolated and cautious exceptions, there has been a stony silence, primarily out of fear that simply raising the issue would lead to emotional, broad-based, aggressive attacks and even mockery against those who dare to speak out, even as something to wonder about.

Though hardly known, let alone appreciated, an analogous situation occurred in the early 20<sup>th</sup> century when the brilliant Belgian Catholic priest and scientist, Georges Lemaitre (who was highly respected by Einstein) postulated that the universe was created from a single, primeval atom or what astronomer Fred Hoyle later derisively called the "Big Bang." LeMaitre also postulated the expansion of the universe before others and never received credit for his second discovery. He was a scientific genius with a story that is inspiring and demands to be told. Why the Church's continued silence?

Pope Pius XII did see LeMaitre's work as an opportunity to support the story of biblical creationism and wanted to employ it in the Church's religious educational efforts. Lemaitre was fearful of such an effort because he and his scientist colleagues held to the risk-averse position of never mixing quantifiable science with non-quantifiable religious beliefs. Inchoate BioScientism was an influential force then, as it is today, though not nearly as powerful. Father Lemaitre successfully convinced the Pope to abandon such an effort. (As an aside, if he had been a fame-seeker, a general human aspiration, he would have encouraged the pope to move forward and would have eventually received credit for both ground-breaking revolutionary theories).

The point is not whether the Big Bang supports creationism as described in the Bible--it doesn't. But it is an example of the hesitation of leaders to openly discuss *a potential God-science connection*.

Your recent statement that the Church supports the Big Bang theory without any biblical connection was a welcome move to reduce the image of the Church as an anti-science institution. The same holds true with your position on believing in some type of evolution. On the other hand, Pope's Benedict XVI's position that natural selection, particularly the Neo-Darwinism form, is insufficient to support the existence of men and women is certainly correct. By the way, this view is also supported by the Number Theory of the Human Signaler.

### **America as the Initial Launching Pad**

America is undoubtedly the major force that is driving worldwide change in customs and social beliefs. It is very encouraging that Americans are still receptive to messages relating to the existence of

God, even in face of the inexorable onslaught of religion-tradition destroying technology. The Internet, however, is swiftly winning the secularism battle for the hearts of mankind. If not immediately opposed, it will likely win the day. At this point in time, it's fair to say that the changing American culture may mirror the future of the world.

But here's some very good news: During 2013, the ten-hour television program on the History Channel entitled, "The Bible," was viewed by 100 million Americans, which, I believe, was the number one viewed program that year. This "signals" that Americans are still searching for the God of the Bible and Judeo-Christian values. But since secularism is rising on a rapid, media-fueled trajectory, the window of opportunity to reach Americans may be even briefer than many of us anticipated.

In a recent survey of over 10,000 Americans, including a subgroup of scientists, it was found that approximately 75 percent of scientists professed belief in some type of religion. This was another welcoming surprise and offers a targeted and critically influential audience for the Human Signaler Theory.

### **American Millennials: A Formidable Energy Font for the Launch**

American Millennials were originally roughly defined as those born after 1980. With the passing of time, many more are coming into the fold. Currently, there are approximately 75 million Millennials in the United States from ages 18 to 35. Their composition and outlooks on life differ substantially from previous generations. Over 40 percent are non-white, mainly Hispanic, Black and Asian in order of prevalence. Only 25 percent are married. Surveys report that most still believe in God, but only about 30 percent consider themselves to be religious in a traditional sense.

We have extremely revealing data regarding their mindset: Only 19 percent trust people in general and government in particular! A significant percentage has rejected both the Democratic and Republican Parties. They consider themselves to be political Independents. Their level of general social distrust is high.

So who do they trust? It's social media! Over 80 percent are Facebook activists with hundreds of "friends," while a growing majority shares other Internet apps such as "selfies" on Snapchat and Instagram; enthusiastic sharing on Twitter; and getting around town on app-drive car services like Uber and Lyft. Much of their lives are spent gazing at some form of a screen, be it a computer, sophisticated cell phone or other mobile device.

I have little doubt, based on my long-term experience counseling many of them, that Millennials are searching for social stability founded on values that they trust. They are searching for credible leaders for guidance. What is not fully appreciated is that their intake of recreational substances such as alcohol, cocaine, marijuana and an increasing number of available synthetic recreational drugs, encourage them to turn to things other than religion--as our universities are painfully learning. I would characterize them as having the medical triad syndrome, "Hope-Pessimism- Resignation". Because of this, they are highly susceptible to messages of false gods.

How, then, can these solution-seeking, multi-cultural groups be reached with the critical objective of finding positive leaders who understand the basic concept of the Human Signaler and join in spreading the message? *The message must be delivered in brief language, based on science, mainly numbers, and be clearly understandable.* And the most effective way to accomplish these objectives is by the *hic et nunc* survey approach. If successful, it will

open their eyes widely enough to lead to increased curiosity and a thirst for further elucidation. I cannot emphasize enough the necessity of a simple, clear and easy to understand door-opener provided by such surveys.

But there are also biological and social reasons why Millennials may be the key. *They are energy and freedom!* The youthful Millennials have the boundless energy and ample freedom required to bring about a revolution of religious thought and spirit, as the young have done in Civil Rights campaigns and other social movements. They will primarily achieve this by communicating, not only to Americans, but also to international populations, heavily employing the Internet.

### **Father Francis: The Blending of BioScientism and Ersatz Gods- a Warning**

Parallel to the rise of BioScientism are rapidly spreading ersatz god movements boldly challenging Christianity. Beliefs in a wide range of spiritual traditions and in amorphous concepts such as transhumanism and “cosmic energy,” are becoming commonplace. This bespeaks of the human quest for higher meaning. In America, it is becoming increasingly common to hear people say, “I’m not religious, but I’m into spirituality.”

Then there’s the atheism division of BioScientism: My atheist colleagues, an interesting and tenacious bunch, view this human quest as an opportunity to spread their secularistic credo. Very intelligent, energetic and highly influential ones, such as Richard Dawkins and Sam Harris, have taken an unexpected and, might I say, clever approach in their anti-God crusade. They now speak of the beauty of nature and the wonders of consciousness. They claim that the contemplation of such things leads to a serenity and peace of mind

comparable to that of Christian religious experiences. Their language regarding nature is reminiscent of the poems of Wordsworth and the God of Spinoza--a kind of pantheism or beguiling soft atheism. There is little doubt that this soft atheism movement is synergizing with the ersatz gods' ones in the ongoing surge against the biblical God.

It's disturbing to note that a significant number of the triple-headed hydra of BioScientism and ersatz god communities express heated hostile emotions just by the mentioning of the existence of a personal God, let alone Christianity. The recent heated, hate- laden controversy in the United States about teaching the subject of Intelligent Design of the Universe in schools bears witness to this phenomenon. Simply put, the message of Intelligent Design-which cannot be proven or disproven-is that if there is a clock, there must be a clockmaker. The impassioned, fired-up opponents to this clockmaker were correct in believing that this was a not-so-subtle attempt by certain religious groups to bring God back into the classroom. But why the accompanying hate-language? Hate is a formidable enemy to confront and in tandem with the other anti- Christianity forces adds to the total impact of the secularistic onslaught.

It is interesting to note that brain-imaging studies reveal that when attempts are made to discuss politics and religion, it is primarily the emotional and not the intellectual segment of the brain that lights up!

Father Francis-and now the warning: Your dedicated crusade to reach out to the poor and disadvantaged will focus on many countries and cultures not yet significantly influenced by BioScientism. But the Internet and other educational outlets, as in Western societies, will soon bring this mindset to these populations and inevitably frustrate your long-term objectives.

## **SCIENTIFIC EVIDENCE IN SUPPORT OF THE NUMBER THEORY OF THE HUMAN SIGNALER**

Regarding the potential existence of a personal God, few arguments deal with the enormity of the “numbers” in the human body and mind that suggest such a possibility. Instead, arguments are based principally on the use of questionable reasoning and limited analytic tools. The fundamental scientific approach of this letter is based on the inexplicable mega-trillions of “signaling” numbers which occur in a human and the proposed existence of the Human Signaler which directs such signals.

Signaling is a generally accepted scientific phenomenon, including by the BioScientism community. So we have a baseline of common belief to build upon. This is a giant step forward for further discussions, expansion and agreement.

Signaling simply means that something happens by something else making it happen. This “something” is a signal. There are four primary types of signaling activities in the human body: ( a) the creation of cells and other body components (b) within each cell (c) between and among such cells and (d) external factors which impact the aforementioned.

This letter deals with a fifth entity where a, b, c and d are instructed to perform and coordinate their trillions upon trillions of signaling functions to achieve specific goals. *I call this entity the Human Signaler, and its nature and location are unknown.*

### **Human Body Numbers, Functions and Signals**

The technology to quantify the number of cells, the natural elements contained in them, their functions, countless interactions and what external factors impact them is in its infancy. What we do know,

however, is that such numbers are beyond human comprehension. I remember well when I was in elementary school how overwhelmed I was when thinking about the number, one million. (We are the same age, and I'm sure we shared the same experience). A billion, let alone a trillion, wasn't in my vocabulary, let alone in my imagination.

Today, we commonly speak of "trillions" as an afterthought and are becoming intellectually and emotionally immune to the immensity of such numbers. Hopefully, the *mega-trillion* numbers of physical and mental signal dependent entities in the human body, which permit its existence, will lessen such immunity sufficiently enough to open the door of intellectual curiosity and wonderment regarding why and how we are born, live, behave and die.

### **The Brain**

Let's begin with the most interesting of all entities in the universe--those three pounds of mysterious flesh which we call the brain. There are close to 100 billion neurons or nerve cells in the human brain. Each neuron connects with other neurons through their synapses in order to transmit messages for some type of action, be it mental or physical. According to some estimates there are at least 100 trillion synapses in the brain or 100,000,000,000, all either in action or getting ready for action at a single point in time!

The brain also has three types of glial cells--microglia, astrocytes and oligodendrocytes--which support the neurons and are estimated to be approximately 3 times more in number than neurons for a total of 300 billion of them.

What is little appreciated is that both the brain and the rest of the body are permeated and largely controlled by water and electricity. Water and electricity play an essential role in every cell. They have a

physical presence in the 400,000 billion neurons and glial cells amounting to a combined total of 800,000 billion presences. All functions of the brain are dependent on them. Technology cannot measure these mega-trillions of signaling-based functions. The numbers are currently beyond calculation. It is fascinating to note that the numbers exceed all the trillions of stars in our galaxies, estimated to be 3 trillion times a 100 billion or 3 followed by 23 zeroes!

The brain also has its arteries, capillaries and veins. I could find no accurate measure of the total number of cells in these vessels. But the arteries and capillaries carry oxygen and nutrients to each brain cell which permit, like water and electricity, all cell signals to perform their duties. Carbon dioxide is then produced which also has the same numerical 400 billion presences in the cells as oxygen.

Father Francis: Remember, we are talking about only three pounds of flesh no heavier than a wonderful Argentinian steak!

### **The Total Body Including the Brain**

Let's now visit the numbers in the total body, including the brain, and just consider only a few facts regarding the awe-provoking world of numbers. It's estimated there are 10 trillion cells in the total body with countless signaling-induced functions. Let's consider only two--those by genes and methylation.

There are slightly more than 20,000 genes in each cell. If we round off that number, we end up with a total of 200,000 trillion cellular genes controlling cell functions. This is far beyond technology's current capacity to quantify. But let's take an absurdly low estimate of 1,000 cell functions which amounts to 200,000,000 trillion signal-based

functions! It's estimated that the body's biochemical methylation processes occur close to one billion times per second and, in just one minute, 60 billion times!

(Here's a function that I just read about and find hard to believe even though it was reported by distinguished researchers. It deals with the nose. They estimate that humans can distinguish over 1 trillion scents).

The following is an example of mind-boggling numbers and unique functions, which are fascinating physicians and scientists. It is estimated that there are 10 times as many single-cell bacteria in the body than human cells which play a critical role in human health from nutrition to disease. (This type of presence in a human body can be considered a metaorganism or microbiome). Ten times 10 trillion human cells amount to 100 trillion bacteria, which weigh even more than the 3 pounds of brain flesh. It is believed that there are 400 more microbial or bacterial genes in the body than human ones which are estimated to be 800,000 trillion. Then there are also viruses or bacteriophages which interact with these bacteria. It appears there are 10 bacteriophages for each bacterium, amounting to 1000 trillion viruses.

Father Francis, so far I've been talking about the numbers of cells and functions within them. But body cells also send messages to different other types of body cells which are not connected to each other. For example, the immune system sends antibodies to fight bacteria and viruses at the specific point of their attack in the body. The pituitary gland sends hormones to stimulate the activation of other hormones such as in the thyroid, adrenal and reproductive glands. The miraculous *in utero* development of a fetus requires untold numbers of signals from developing the placenta to toenails to the formation of the brain.

Then there are also cellular functions which are initiated inside but occur outside the body such as movement of all kinds from speaking to kneeling in prayer and talking to God; from constructing the Roman Coliseum to painting a portrait to playing soccer; from typing on the computer laptop to playing the piano; from dancing the Tarantella to dueling to voting; from walking to running to writing a letter to a loved one and sending a Christmas gift to one's parents; to be fortunate enough to eat a splendid , though difficult to find, *Bollito misto* or reading a good book both of which can give one a variety of feelings from sadness to gladness.

(Speaking about *Bollito misto*, about 20 years ago I had lunch with Luciano Pavarotti in Manhattan, and we discovered that we both love this dish but bemoaned the fact that we couldn't find a chef who could prepare it as they do in Emilia-Romagna).

## **The Mind**

Modern science is now exploring ways to locate “the mind” and demonstrate its existence. There is now a rapidly expanding specialty, experimental philosophy, where laboratory tests are employed in an attempt to locate and characterize the mind. Scientists measure how people react to certain situations by utilizing the use of verbal responses, for example. Imaging scans then show where the activity is located in the brain. The mind contains within it boundless, immeasurable numbers of thoughts, feelings and other signal-induced, daily mental functions which have not been quantified. To complicate things, their definitions are not precise and oftentimes overlap.

Words were made to communicate and not to define. For example, what is love? It wears many faces. Having said this, the following are examples of the mind's signal-induced mental activities:

Consciousness or awareness of one's existence and self, recognition, recall, love of many types, hate, altruism, schadenfreude, rationalization, curiosity, sorrow, smiling, happiness, jealousy, envy, suffering, anxiety, depression, phobias, ambition, aggression, submission, domination, optimism, pessimism, friendship, loyalty, patriotism, cynicism, thinking, contemplation, reasoning in all walks of life from planning a wedding to ways to construct weapons of mass destruction, dreams, creativity, spiritualism, wisdom *and, yes, faith in a personal God and life after death.*

Because of its critical importance, I would urge you to have one of the many brilliant minds in Catholic or other institutions to study and publish a review on this subject in an easily readable style for many to understand.

### **Consciousness**

Aristotle wrote, "In everything natural, there is something marvelous." But I consider the mystery of consciousness, the act of being aware of oneself, the most provocative and marvelous of all. It is the threshold to most of life's experiences from awakening to sleep or, as we shall see, from awakening to awakening. We haven't the slightest idea of what it is nor do we know what kinds or how many signals cause it to happen. But there's one indisputable fact. Most of life's experiences require signals of being conscious so the act of consciousness is inextricably bound to all such acts of life. Unfortunately, my calculator cannot determine the numerical enormity of these signals.

## **Sleep--The Subconscious Consciousness**

When I was a student at Jefferson Medical College in Philadelphia, it was generally believed that the sleeping brain was a quiet organ taking a rest from the wakened world seeking peace. But now we know it's just the opposite. During sleep, the brain is extremely active, using trillions of signals per second. I believe it is very much conscious of itself.

The activity which is fascinating and mysterious to me is dreaming. Dreams are oftentimes far more exciting than real life. I often wonder why there is a stream of unending stories and plots with complicated scenes which have never been or could or ever be experienced. For example, I would, while vigorously flapping my arms as ersatz wings, frequently fly over cities and mountains encountering a broad variety of adventures. When I dream of old folks who have left us, they are usually young in appearance and appear in scenes that never occurred or are not physically capable of happening. As in films, dreams require a plot and script, actors, lighting and production over a period of time. Current belief is that we dream about six times a night. In this state, the brain creates more creative productions in one night than a major Hollywood movie company can produce in a year!

There is no way to calculate the number of signals the sleeping brain employs for one second, one night or a lifetime, but, they are, "Out of sight."

### **External Body Signaling**

The numbers of signaling and resulting functions which occur in a human being caused by external body factors, and how they influence the internal signaling and activity, are unquantifiable. They are everywhere and constantly in action. To my knowledge, no one has

written a sweeping description of the vastness of this external-internal signaling phenomenon *which persuasively adds to the existence of the Human Signaler*.

External signaling can roughly be divided into a very broad and a more limited, epigenetic one. Let's start with a very small list of the former: It's what we eat, sunshine, darkness, interaction with people in innumerable situations ranging from family to the workplace, silence, noise, smell, traffic tickets, paying taxes- a powerful, disruptive psychological factor, reading, Internet, television, radio, attending a performance at La Scala of Verdi's thrilling unsurpassed opera, Otello, falling in or out of love, and an inspired or uninspired Church sermon.

A brief but critically important diversion: Before Darwin and Wallace, the brilliant Frenchman, Lamarck, proposed his revolutionary theory of evolution of acquired inherited traits. Thus, if the food supply of a giraffe grows higher and higher in the trees, its neck would have to become proportionately longer to survive, and this trait could be passed on to future offspring. His theory was aggressively both ridiculed and rejected by Darwinists who maintain that genetic mutations are solely responsible for all inherited traits. However, the recent, highly exciting field of epigenetics, which has deepened and expanded Lamarck's theory, calls for reconsideration by Darwinists, particularly Neo-Darwinists.

Epigenetics concerns itself with those signals which can modify DNA activity without changing the basic structure of DNA itself. For example, some type of external stress can send signals which can cause DNA swelling and, by doing so, alters DNA signaling which can lead to alterations of the mind and body of the newborn passing them on into adulthood. Surprisingly, we have recently learned that this type of signaling of human attributes can be transmitted not only to just a

single male or female offspring, but also to their future offspring for generations. Breathtaking future epigenetic discoveries are on their way and will dramatically influence evolutionary and other debates. *What's important to note is that it clearly supports the potential existence of the Human Signaler!*

### **Living as a Signaling Function**

It always triggers the wondering part of my brain when scientists speak of a cell function. They invariably relate it to a specific purpose. For example, mitochondria, the furnaces of the cell, have a critical purpose which is to metabolize sugar and fats to produce energy. Also, ribosomes in the cell function to produce proteins which are the messengers of the cells. But I can't recall anyone mentioning "living" as a specific cell function. The reason? There isn't a measurable specific "living" signal as such. But I consider it the most important function of all! For what's the purpose of cells but to first live in order to create and maintain human life from conception to the final moment? And this living signaling process goes on in ten trillion body cells every moment of every day. *This "living" phenomenon may be the most important support for the existence of the Human Signaler!*

### **Factors of Time and Change**

Now hold on to your *zucchetto*! Father Francis, at this point you have probably become immune to the staggering numbers quoted though there are mega trillions more. The numbers cited, however, refer only to a point in time. But practically everything in the human organism is in constant flux from the beginning to the end of life. The signaling is continuous, but let's, once more, assume they occur each second. The following are six examples of the enormity of the kinds of numbers we're dealing with:

Each cell in the body has 1 billion ATP energy molecules. ATP causes the generation of incalculable signals, but let's assume an absurdly low number of a thousand. One billion x 1 thousand x 10 trillion body cells x 31,536,000 (seconds in a year) amounts to 315,360,000,000,000,000,000,000,000 signals.

There are 100 trillion brain synapses, and let's assume each transmits only one signal instead of the normally trillions: multiplied by 31,536,000 annual seconds amounts to 3,153,600,000,000,000,000 signals each year.

It was mentioned that there are 200,000,000 trillion gene signaling functions going on. Yes, some genes are dormant but it requires signaling to keep them dormant. Let's assume an average lifespan of 70 years. Gene signaling numbers x annual seconds x 70 amounts to 441,504,000,000,000,000,000,000,000 lifetime signals.

It was also mentioned that there are about one billion methylation processes going brought about by signaling each second. One billion x annual seconds x 70 amounts to 2,207,520,000,000,000,000 lifetime signals.

Let's now consider living signals only as single ones. The 10 trillion body cells are living at a point in time. Billions of cells periodically die such as in the gastrointestinal tract and skin which are then replaced by signaling growth factors. They are not included in these calculations but they are also numerically in the mega trillion leagues. Over a 70 year period the number of the living signals amount to

22,075, 200, 000,000,000,000,000!

Regarding the bacterial metaorganism or microbiome, there are 800 trillion bacterial genes in the body and though there are many more,

let's assume that they have only one signaling-based function. Over a 70 year period the total signaling number is

1,766, 016, 000,000,000,000,000,000.

Father Francis, as I am writing to you, I am conscious both of myself and the fact that I'm writing this letter. My eyes are focused on the note pad; my brain is thinking about what to write and how to express it; my brain is also instructing my hand how to hold the pen and how to move my hand in order to write what I want to express; my heart is beating sending oxygenated blood to my entire body; my blood pressure is being maintained to prevent me from going into shock or having a hypertensive crisis; my liver is detoxifying a pharmaceutical I took an hour ago for a neck injury; my lungs are breathing in oxygen and expelling carbon dioxide; my gastrointestinal system is digesting a morsel of toast and butter that I ingested about 15 minutes ago; I now hear the coffee pot perking and can smell the coffee's aroma; my immune system is battling ever present attacking pathogens, and my body muscles are working together to prevent me from falling off the chair; I just uncrossed my legs for an unknown reason; my toenails are slowly growing and my head hairs, like yours, are in the process of leaving my scalp. All the cells in my body are performing their biochemical signaling functions that are necessary for the aforementioned activities to occur. And all, from individual cell function to body balance, require mega trillions upon mega trillions of signals to happen at each point in time.

*It's important to note that in all of us each signaling function is mysteriously a specific goal oriented one, but the equally or much greater mystery is how these mega trillions all converge to a single general common goal which is to bring into and continuously maintain life.*

## **Conclusion**

As was stated at the beginning of this letter, the conflict between Judeo-Christian beliefs and moral values and mechanistic materialist BioScientism will never be won by logical scientific or philosophical arguments put forth by either side.

However, it is my belief that the “Number Theory of the Human Signaler” will provide the objective evidence needed for a successful challenge to BioScientism. Along with what I call “Seven Billionism” and the data gathering tool of the “Hic et Nunc Q&A Survey Format,” it will be shown that the weight of all the evidence supports the existence of God-driven evolution and the existence of a personal God.

The strong support of your Jewish and Protestant colleagues and perhaps those of other faiths and beliefs as well, will be essential to carry out this work successfully.

It is my hope that this letter is but the beginning of a crucial dialogue.

Father Francis, on a personal note, why this attempt? When I was a young man I became deeply involved in Catholicism. I understood, and continue to understand and appreciate, its beauty and strength. The loss of my faith has not diminished such admiration. The world is sorely in need of these values. Helping and respecting others, being selfless and not enthralled with self-importance, making sure the family stays together, being honest, keeping your word, practicing the Judeo-Christian principal of love and staying close to God by prayer, are all examples of the core values of the Roman Catholic and other Christian denominations.

