DIGITAL CONSCIOUSNESS

A TRANSFORMATIVE VISION

"...if your head does not spin after reading this book you have not understood it!"
ANTHONY PEAKE, author of *Opening The Doors of Perception*

JIM ELVIDGE

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Contents

To Tashi

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Broadcasters like Art Bell and George Noory provided an outlet for many of these people to espouse their views.

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I wish to acknowledge my *Universe—Solved!* peeps—people who have written to me over the years, exchanged ideas, joined my Forum, and been kind and steadfast supporters of my work. You know who you are. ☺

Finally, to Tashi for her support and love, wise Eastern knowledge, long midnight discussions, help in editing and reviewing, and patience with me spending "yet another night on the book."

Introduction

There are many ways to tell a story. Broadly speaking, there are three: top-down, bottom-up and everything else. Most narratives have a message, a central theme or a point to get across. A scientific or philosophical work may have a hypothesis or theory to present and the objective of the work is to provide the evidence to support the theory.

In the top-down method, the overall message is presented first, followed by a set of rationales for that message, which we might call "the next layer down." Should any of those rationales require further breakdown for evidence or clarity, another layer of rationales is presented, and so on, methodically, until the author reaches whatever bottom level of explanation is comfortable. In the New Age world, that bottom layer is never very far down, and the authors use vague ambiguous terms like "vibrational level" and "energy field." In a rigorous scientific thesis, the bottom level may be full of equations and field-specific jargon that is difficult for the average reader to comprehend. The downside of such a storytelling approach is that the interesting points are presented up front, when the reader is still skeptical because the foundational material has yet to be presented. As the reader progresses through the work, they have an increasingly tedious task of slogging through deeper and deeper levels of detail.

The bottom-up method is certainly no better, because the most detailed material is at the beginning and may be sure to turn off the reader before any attention-grabbing

context is given. *The Universe—Solved!* was written in such a manner and I had to keep attempting to tantalize the reader with a promise that "it would all come together in Chapter 7."

So, I am doing my best in this book to present my argument and foundational elements in a non-linear Tarantino-esque narrative that blends context and detail into every section of the book. It is an experiment.

I am also freely using elements of some of my blogs, because they happen to provide explanations for some of the concepts within. But rest assured, dear reader, that there is plenty of new material here to sink your teeth into!

Chapter 1

Why Is This So Cool?

It Answers All of the Most Interesting Questions:

- What is life all about?
- Why does the mere act of observation appear to alter reality?
- Is there life after death? If so, what's it like?
- How is it that objective reality doesn't exist, according to recent experiments in physics?
- Why does the universe appear finely tuned for the existence of matter, let alone life?
- What is matter? What is dark matter?
- Do parallel universes really exist?
- If a tree falls in the forest and there's nobody around to hear it, does it make a sound?
- What explains quantum entanglement? The quantum Zeno effect? The delayed choice quantum eraser (apparent retrocausality)?
- Are paranormal experiences real? How do they work? What are UFOs?
- Is it nature or nurture? Or neither? What explains drastic differences between the values and personality traits of identical twins who have the same genetics and were brought up in the same environment?

What is cool about Digital Consciousness Philosophy is that it provides a theory, framework or an answer to all of the preceding burning questions. Details are coming.

It Can Change the World

Are you tired of the impression of the world and society that is imprinted upon us by the evening news? While the preponderance of negative stories are presented in a disproportionate amount relative to the myriad uplifting narratives that simultaneously exist, defenders of the media may argue that misery sells. The press is simply giving us what we want to see. Yet, the bigger truth is that the real crimes of society are underreported—stealth imperialism, war profiteering, greed, government corruption, lack of willingness to care for the truly unfortunate, cruelty to animals, big corporate interests stomping on indigenous cultures and so on.

Interestingly, were we to all have an understanding of and belief in Digital Consciousness Philosophy, things might be quite different. In fact, at the 10,000-foot level, it isn't hard to recognize that these differences represent an evolution of humanity.

For example, external consciousness implies an existence beyond corporeal death. Evidence in the form of collected personal experiences by research scientists such as Tom Campbell and Eben Alexander indicate that this existence is lasting—effectively immortal. Imagine how that would change decisions and priorities made here on Earth. All of the money and efforts toward life extension may be redirected toward life itself. The medical industry might recognize that extending our life expectancy is not an evolutionary directive. Knowing of an immortal consciousness, we may instead focus on curing diseases and improving the overall quality of life, rather than viewing people's health as a profitable maintenance plan that extends life beyond a comfortable limit.

Purpose

Digital Consciousness Philosophy imbues life with a great deal more meaning and purpose than does scientific materialism. This can give individuals a new perspective on the meaning of their personal lives. Instead of focusing their efforts on winning a hedonistic survival game based on fear and the scarcity of resources, the recognition that our purpose is to learn and evolve our consciousness can lead to significantly greater generosity to fellow humans, and true respect for other species on our planet. When the theoretical game Prisoner's Dilemma is played in an infinitely iterated mode, cooperative techniques optimize the outcome. Applying this lesson to an iterative life process, we would expect to see behavioral differences that result in an overall improvement in the quality of humanity as a whole versus a focus on personal self-interest.

Priorities

The increasing human population rapidly encroaches upon and destroys habitats for countless species of other conscious life forms, as well as using them for cruel experimental medical research. Recognition that animal consciousness is rooted in the same system that begets human consciousness would most certainly serve to eliminate the cruelty and exploitation. The materialist view implies that we are in constant competition for resources, thereby driving conflicts that cause war. But given the knowledge that we are all interconnected, would wars between groups of people based on differences in dogmatic religious beliefs, arbitrary geographical boundaries or political systems make sense anymore?

The power of intent

The digital nature of consciousness implies a probabilistic system (as evidenced clearly by quantum mechanics), which generates outcomes that can be influenced by intent. The belief that "skillful intention" can change your life, your society and your world could allow people to get out of their belief traps, and actually make a difference.

As the evidence that we exist in a consciousness-driven digital reality continues to mount, so will humanity's collective belief in this idea. Not only can the understanding of this model of our world lead to novel, unifying understandings in science but, more importantly, it can also lead to a more peaceful, harmonious, just and balanced worldview.

A Brief Overview

The detailed description of the digital-consciousness model and the way it works will be presented later in the book. But, to save the reader the angst of having to wade through all of the foundational stuff before the tasty tidbits, an overview is provided here.

Let's start with the idea of "all that there is." We typically think of this in terms of our physical reality, where "all that there is" is everything that exists in the physical universe. However, that has become a very antiquated notion over recent years, as we are now forced to consider things which do not appear to be in our reality, but for which there is ample scientific evidence. Examples include dark matter, dark energy and a huge quantity (some say infinite) of physical matter beyond the Hubble volume (the Hubble volume is that which is accessible to our observation, beyond which observation is theoretically impossible owing to the hard limit of the speed of light).

We should also consider things that may have less

scientific evidence, but do have a good deal of rational philosophical and scientific thought underlying them, such as parallel realities and the so-called multiverse. And finally, there is that which is even beyond the theoretical physical, but for which there is ample anecdotal and scientific evidence, such as non-physical realms, the afterlife, the "in between" lives and the "astral plane." I hope to demonstrate convincingly that this latter category is not to be ignored, but is as real as the book in your hands. So, let "all that there is" be the sum total of… well, all that there is. In our model, let's use a big gray cloud to represent this.

But this is not a collection of the physical stuff that we might think it is. Instead, it is both pure data and pure consciousness. Although it is an expansive system, it is not infinite, but of a size that is far beyond our comprehension. Physicist Tom Campbell calls this "Absolute Unbounded Manifold" (AUM). Others have referred to it as the "Global Consciousness System."

If you are right-brained, think of it as a blank canvas, on which we can create anything—minds, experiences, thoughts, cars. If you are left-brained, think of it as a programmatic substrate, upon which we can "program" anything—minds, experiences, thoughts, cars. It is data in the sense that, at its deepest level, it is organized as bits, as binary elements. The physical nature of it is not important, both because this is simply an introduction to the concept, and because it is theoretically impossible to know its true nature. This is because it is far more fundamental than we can ever have a hope of exploring experimentally. Indeed, the idea of exploring its nature with the coarse tools that exist in our (much higher level) virtual world doesn't even make any sense. It would be like probing the atom with an imaginary sledgehammer.

I am going to refer to this as "All That There Is" (ATTI) going forward. It is tantamount to being "God," in a

certain sense of the word. This "God" will be discussed later in the book.

You, the reader, have a consciousness. Your consciousness is a very small component of the consciousness of the whole System, but it is bounded. I represent this individuated consciousness (IC) by a little sub-cloud within the larger one, ATTI (obviously, not to scale). See Figure 1.1.

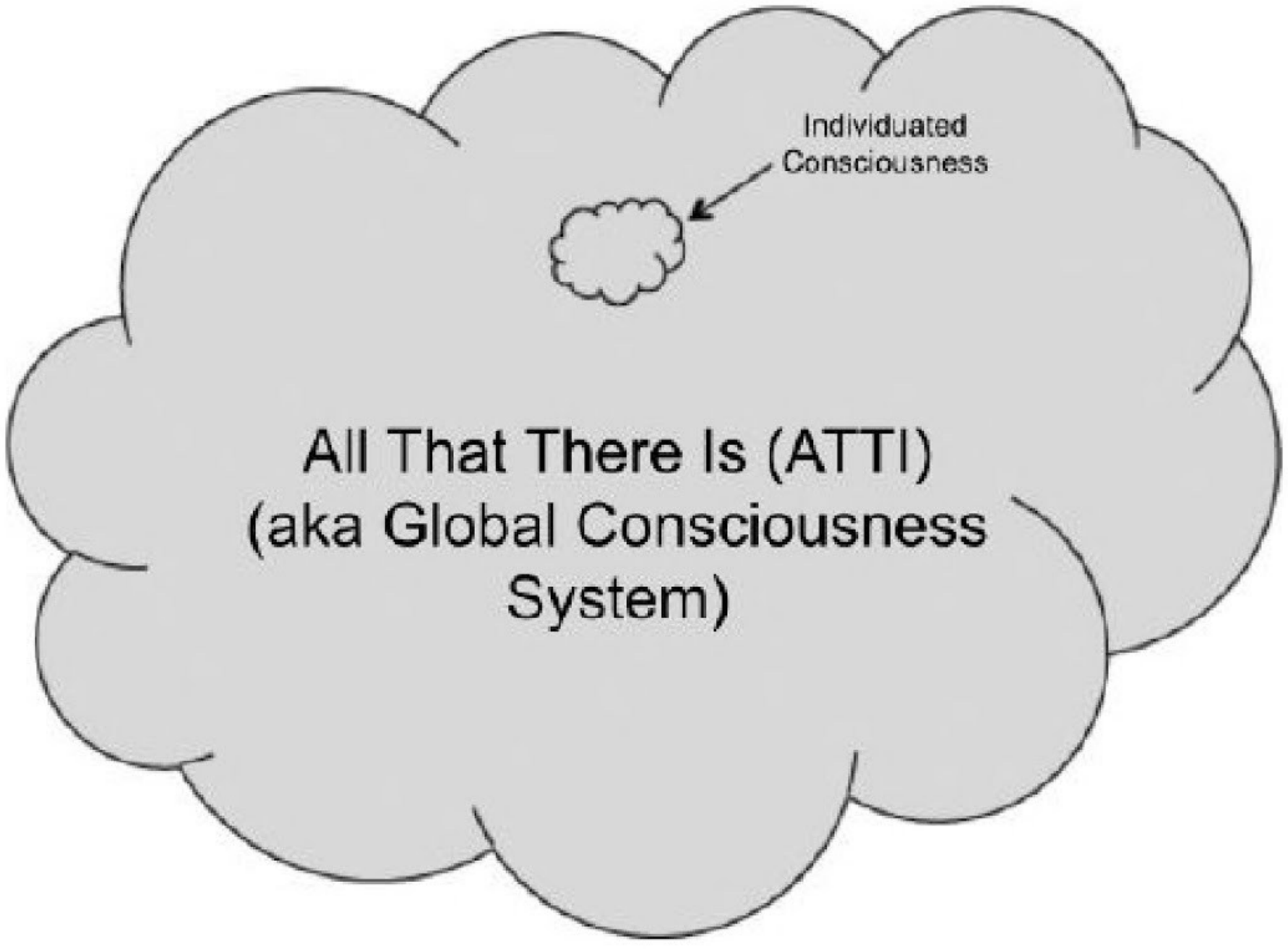

Figure 1.1

We all have ICs within ATTI—humans, dogs, ticks, fleas. The size of the sub-cloud would be relative to the complexity of the consciousness.

Another part of the system is what I refer to as the "Reality Learning Lab" (RLL). (Note: some have described life as a "learning lab" or "school" and Tom Campbell has described this reality as a "virtual reality learning lab.") Think of the RLL as a piece of virtual reality software

running on the ATTI "system." The RLL contains everything that we think of as physical—galaxies, planets, cars, humans, brains, cells, atoms and subatomic particles. None of it is truly physical; rather, it is virtual data representations of those things. That's right, consciousness is separate from the brain. It does not "emerge" from complex brain functions as material reductionists would have you believe. As we shall see, the evidence supporting this is overwhelming.

Instead, consciousness is fundamental—it is the stuff of which everything is made. Putting this all together, Figure 1.2 demonstrates the nature of reality in Digital Consciousness theory (DCT). Jim and Brandon are two individuals who exist as ICs in the global consciousness system, aka ATTI. They each have an information connection to the RLL subsystem where, along with the other ICs of 7 billion people on the planet, 500 million dogs, 30 trillion gnats, etc., they interact with each other, as well as the other artifacts in the RLL (cars, rocks, graduation hats).

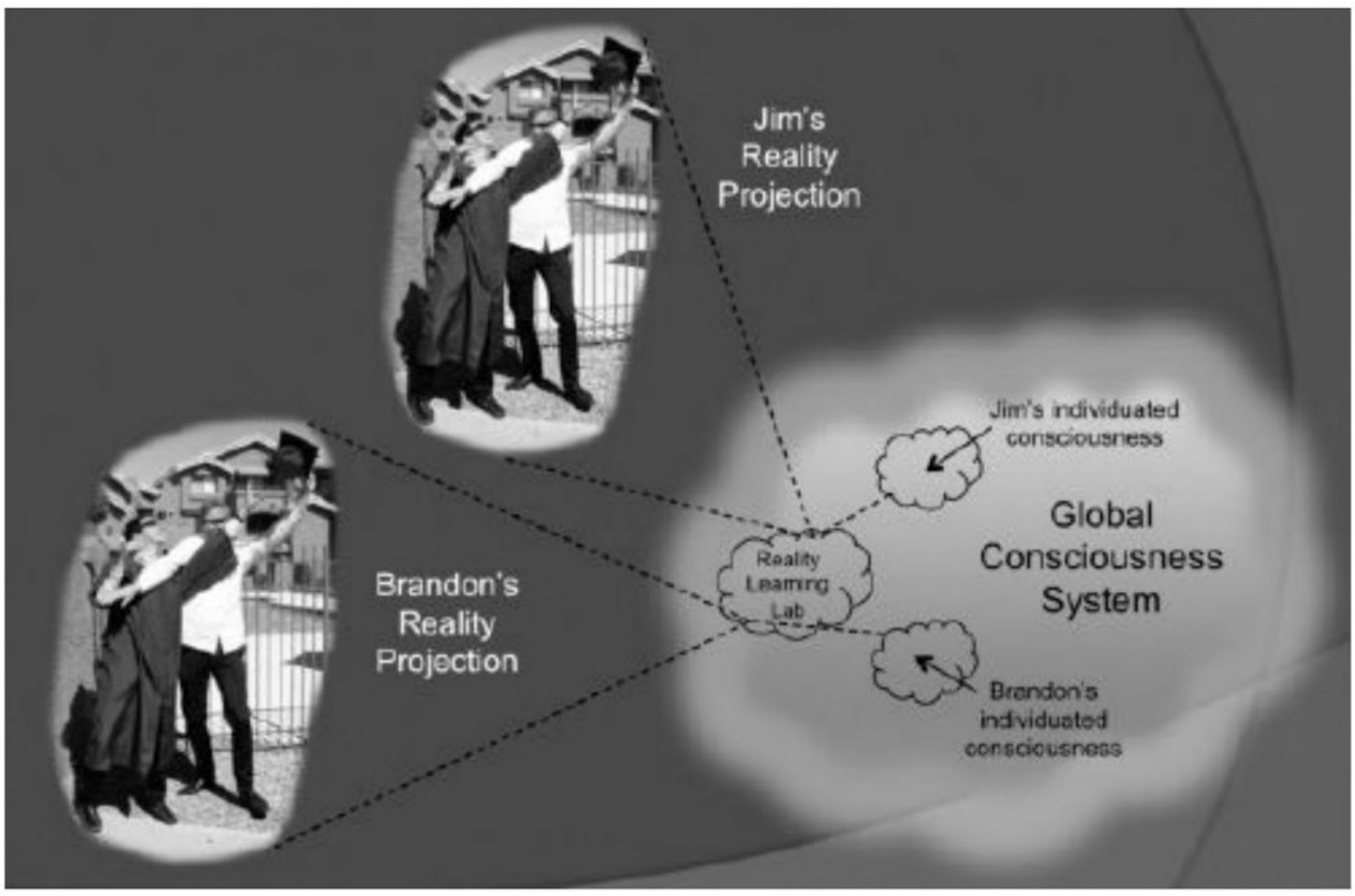

Figure 1.2

It is perfectly analogous to the experience of playing a multiplayer video game. The conscious entity is the player, but the projection of that player's reality in the game is his or her avatar plus the rest of the artifacts in the game, just as is shown in the figure.

Is it really that hard to believe? Another analogy would be a dream. Have you ever awoken in the middle of the night from a nightmare with your heart pounding? Why would your body react that way if your mind didn't believe that what it was experiencing was real?

Essentially, both the video game and the dream are projections. So, why do we think that dreams aren't real but the waking state is? There are two reasons:

1. Temporary State of Being: When we wake from the dream state, we recall the pre-dream state of the waking reality that we had yesterday. Hence, we feel that the dream is transient, a temporary excursion of our mind amidst another more permanent state of consciousness. However, as we shall see, we ultimately realize that our "normal waking state," "physical reality," "life here on Earth," whatever we want to call it, is also just a temporary state sandwiched in between a more permanent state of consciousness. Therefore, the mere fact of not having this realization or understanding is not a valid reason to believe that physical reality is concrete.
2. Consensus of Experience: When we dream, our experiences appear to be our own. There is generally no consensus established about those experiences with other conscious individuals. However, in the waking state, we have significant consensus of experience. When we are standing on

the street corner with friends and a blue car drives by, we can all agree that we saw a blue car, identify the brand, the number of passengers, the speeds of the vehicle, etc. Hence, the experience feels more real and concrete, because of the experience consensus that we have with others. However, there are two flaws in this argument. First of all, the dream state is not always and completely consensus-free, as mutual lucid dreaming studies strongly demonstrate. More fundamentally, however, experiments in many fields of science show that this consensus is not 100 percent. The results of many psychological experiments indicate that we all perceive the world slightly differently. Hypnosis can cause people to not perceive things at all, while the rest of us accept them as "being there." And finally, the field of quantum mechanics has now demonstrated conclusively that objective reality does not exist. The evidence for these claims shall be presented later.

It is easy to see how this model has tremendous explanatory power. Those experimental results that imply a lack of objective reality or a lack of conscious consensus now have a foundational explanatory construct. The power of belief and the placebo effect suddenly make sense, because the act of believing and intending is separate from the apparent physical stuff with which we interact. In fact, since that "stuff," like our bodies, is not concrete but malleable, it is easy to understand why our beliefs can mold it.

Even so, despite the incredible explanatory power of Digital Consciousness Philosophy, it is unlikely to gain immediate acceptance. This is because it typically takes 30 years or so for radical ideas to evolve from theory to

acceptance. The next chapter will explain why and identify the journey that this concept will take. We can then all sit back and enjoy the ride.

Chapter 2

The Evolution of Radical Ideas

"All great truths began as blasphemies."
- *George Bernard Shaw*

"Theories have four stages of acceptance:
1. This is worthless nonsense.
2. This is an interesting, but perverse, point of view.
3. This is true but quite unimportant.
4. I always said so."
- *J.B.S. Haldane, geneticist*

George Bernard Shaw and J.B.S. Haldane were well aware of a natural human tendency to resist change. Social psychologist Robert Zajonc is noted for his development of the "mere-exposure effect," which asserts that people have a tendency to prefer things with which they are familiar. The corollary to this effect is the tendency of all organisms to exhibit a fear/avoidance response in the presence of a novel stimulus.

It isn't surprising that we might fear change or react negatively to new elements in our environment, including new ideas. After all, human evolution passed through many periods where playing it safe was the best way to pass on your genes. The risk-takers—the one who challenged the saber-toothed cat, the one who ventured out of the cave at night, the one who ate the bright red berries—would get weeded out of the evolutionary tree. As a result, we have evolved to be skeptical and to resist change. It's in our DNA.

The Expert Effect

Unfortunately, this creates a behavior pattern that discourages the acceptance of new ideas. This is especially true in the academic community, owing to the "expert effect."

"The expert knows more and more about less and less until he knows everything about nothing."
- *Mahatma Gandhi*

"preposterous"
"rocks don't fall from the sky"
- *The French Academy of Science regarding reports of meteorites in the 1800s*

"No one will need more than 637KB of memory for a personal computer. 640KB ought to be enough for anybody."
- *Bill Gates*

"There is no reason for any individual to have a computer in his home."
- *Ken Olsen, founder of the now defunct Digital Equipment Corporation*

The Scientific Method

The "Scientific Method" is a structured methodology for developing hypotheses and theories. The elements of the currently accepted method are:

1. Define a question

2. Do background research
3. Construct an explanatory hypothesis
4. Test the hypothesis by doing experiments that produce empirical data
5. Analyze the data and draw conclusions
6. Publish the results
7. Retest, ideally by impartial peers (aka “peer review process”)

I say “currently accepted” because, like everything, the scientific method is in a constant state of change or flux. It is incorrect to think that the scientific method, as currently understood, is a final “best practice.”

Continuous Improvement

Continuous Improvement is a business concept whereby an organization undergoes a process of continuously inspecting their processes, products and structures, and making adaptive incremental changes to improve those processes, products and structures. The idea can easily be applied to other types of entities, such as schools, teams, governments (wouldn’t that be nice?), families and individuals. As such, it is erroneous to assume that the existing processes are the best they will ever be. Has there ever been a product that couldn’t benefit from some improvement? A person? A team? A country? In fact, in my humble opinion, the phrase “best practice” should simply be removed from the language. It implies that there is no further room for improvement and may influence people to become blasé about that process.

And so it is with the scientific method. It is a living process. What was thought of in the Middle Ages as ideal scientific philosophy has certainly been improved upon since that time. It would be incredibly arrogant

to think that in 2016 we have it all figured out and no longer need to question the validity of existing practices and methods.

Applying an attitude of continuous improvement to one's self can only be an outstanding practice. The scientific community would benefit from a similar philosophy, as we shall see.

Scientific methodology has certainly changed over the years. Aristotle's "Posterior Analytics" may have been the first writing to formalize a logical scientific method. Islamic scientists added experimentation to the formalism of science, while medieval philosopher Roger Bacon added independent verification, and great thinkers from the European Renaissance added concepts like a greater emphasis on causation (Francis Bacon) and logical induction. Over the years, various "demarcation criteria" have been proposed to determine what constitutes science. One such criterion, the need to establish a "mechanism," has long since been eliminated from the set, as Newtonian Gravity did not meet it. Predictability and falsifiability were new criteria promoted by Karl Popper in the mid 20th century. Yet these, plus testability, observability and repeatability, are not universally agreed upon. Neither do they all apply to theories that are commonly accepted as scientific, such as field theories and string theory. In fact, according to science philosopher Martin Eger, "Demarcation arguments have collapsed. Philosophers of science don't hold them anymore. They may still enjoy acceptance in the popular world, but that's a different world."[1]

Another important idea about science that often eludes even the most reputable of scientists (and usually the "experts") is the truism that there is never certainty in science. The probability of an idea being "true" falls somewhere between a zero (absolutely false) and a one

(absolutely true).

A hypothesis differs from a theory in that it is just an early suggestion, and has not been subjected to testing and analysis of the evidence. Whereas a theory has undergone significant testing and, presumably (unless it is a bad theory), is supported by a substantial level of evidence. Note that while this rigor pushes the probability of a theory being accurate toward unity, it can never get there. To have 100 percent certainty makes something a fact or a truth. The argument that gets the theory to 100 percent would be a proof. However, proofs are the domain of mathematics, not science. Facts belong in the courtroom, not in scientific research. And truth is only in the language of philosophy. Science is about hypotheses, evidence and theories. The more substantial the evidence that supports the theory, the better the theory it is.

Despite the controversy around scientific philosophy, it should be sufficient to recognize that:

1. The Scientific Method is not a universal concept, but rather a living idea that evolves according to a process of continuous improvement.
2. It is a well-structured methodology that has millennia of debate and fine-tuning behind it. As of 2017, it's the best we have.
3. There is no such thing as proof, truth or fact in science, just evidence.

Grounded with this objective overview of science, we can now turn to the eccentricities of the cult of experts, as they apply to an objective treatment of the scientific method. It is my contention that:

1. Hypotheses that upset existing theories are less likely to be accepted than ones that simply build

upon pre-established foundations.

2. The more radical the hypothesis, the more vehemently it is attacked and the longer it takes for acceptance.
3. Hypotheses that upset the scientific apple cart typically take 30 years, give or take a decade, to achieve mainstream acceptance.

One wonders if the reason for this is that it takes 30 years for an expert, threatened by a new idea, to get to the point in his or her career, where they simply no longer care, while newer scientists have been able to integrate the new idea into their worldview without threatening their livelihood.

The "30 Years to Acceptance" Syndrome

To cite one specific example, let's look at the idea of "cold fusion." Nuclear fusion is a nuclear reaction whereby lightweight atomic nuclei fuse together to form heavier nuclei, generating excess energy in the process. It is generally believed that stars create their energy in this manner, by having a continuous nuclear fusion reaction at their core. Until recently, it was thought that the only possible way to create a nuclear fusion reaction was to heat the fuel components to extremely high temperatures, such as millions of degrees Celsius. In 1989, world-renowned electrochemists Dr. Martin Fleischmann and Dr. Stanley Pons reported anomalous heat production accompanied by common nuclear reaction byproducts such as neutrons and tritium (an isotope of hydrogen) in a desktop experiment at room temperature. Dubbed "cold fusion" at the time, their announcement was met with extreme skepticism. Douglas Morrison, a physicist from the European Organization for Nuclear Research (in

French, Conseil Européen pour la Recherche Nucléaire, or CERN), referred to their work as "pathological science" and said "The results are impossible."[2] Steven Koonin, then professor of physics at the California Institute of Technology (Caltech) (and later the Under Secretary of Energy for Science at the US Department of Energy), commented "we're suffering from the incompetence and perhaps delusion of Drs. Pons and Fleischmann."[3] Scathing magazine articles were written and the scientists were ostracized for decades by their closed-minded peers. Some of the harshest criticism came from the Massachusetts Institute of Technology (MIT), who may have felt the threat of losing millions of dollars of federal "hot fusion" funding if a simple tabletop experiment could demonstrate net energy creation that their hot fusion program could not.

Within a short period of time, various research institutes around the world attempted to reproduce Fleischmann and Pons' results. Some experiments showed no hallmark signs of a fusion process. Others demonstrated some excess heat and still others resulted in anomalous fusion byproducts. But the damage was done. Cold fusion had become a joke; in reality, it was adopted as a metaphor for bad science or pseudoscience. Many researchers refused to touch such a tainted area of research for fear of damaging their reputation. So, cold fusion research went underground. In fact, a very clever tried-and-true technique was employed—change the name to save face. Cold fusion became Low Energy Nuclear Reactions (LENR).

Between 1989 and 2004, there were over 15,000 replicating experiments done in the newly dubbed field of LENR at such prestigious institutions as MIT, NASA, the United States Department of Energy, the University of Chicago, Osaka University and Toyota. According to science researchers Steven Krivit and Nadine Winocur, the

reproducibility rate became as high as 83 percent.[4] In 2012, during a colloquium on LENR at CERN (one of cold fusion's original and harshest critics), it was declared "The effect described by Fleischmann & Pons in 1989 is confirmed." Further, "The quality of experiments worldwide performed is so high and the results obtained so widespread/reproduced, that I believe it is the time to start an International Research Program to boost the results."[5]

So, in the cold fusion case, it took about 23 years to work through the first two stages of J.B.S. Haldane's Four Stages of Acceptance (see the beginning of this chapter). Cold fusion is still by no means accepted in the scientific mainstream.

Neither is this trend improving as we become more "enlightened." In 1827, Georg Ohm published his now famous theory of electrical resistance (now known as Ohm's Law). It was met with harsh criticism, even to the point where the German Minister of Education said that "a professor who preached such heresies was unworthy to teach science."[6] As a result, Ohm lost his job and landed on hard times. It wasn't until 1852 that he was appointed to a university teaching position—25 years, no different from today.

In 1879, amateur archaeologist Marcelino Sanz de Sautuola discovered and then published a statement that cave paintings in the Altamira cave in Spain appeared to date to the Stone Age. The French archaeology establishment ridiculed his findings and accused him of forgery. Sautuola died in disgrace in 1888, but was vindicated in 1902, when the scientific community retracted their opposition—23 years.

In 1933, Swiss astronomer Fritz Zwicky proposes a concept of "dark matter" to explain anomalies observed in the motions of galaxies. His idea was ignored by the scientific community for decades. German astronomer

Walter Baade referred to him as "mad," others as an "irritating buffoon." Zwicky died in 1974, but had been vindicated in 1973, when Princeton astronomers realized they needed dark matter to complete their model of the universe—40 years.

So as can be seen, there doesn't seem to be a trend toward the shortening of the adoption cycle of radical new ideas. Instead, we consistently seem to require 20 to 40 years for novel theories to reach the mainstream, even when they have solid evidence behind them.

The Technology Adoption Lifecycle

In the high-tech world, a related concept called the technology adoption lifecycle has its roots in the same set of fears. Based on the book *Diffusion of Innovations,* sociology professor Everett Rogers identified the pattern of adoption of new innovations or ideas (see Figure 2.1). He noticed that there are typically very few individuals, about 2.5 percent of the population, who are willing to adopt and experience the new ideas or innovations. The next group, called early adopters, comprises about 13.5 percent of the population. Then comes the majority, followed at the end by the 16 percent of us who are the laggards.

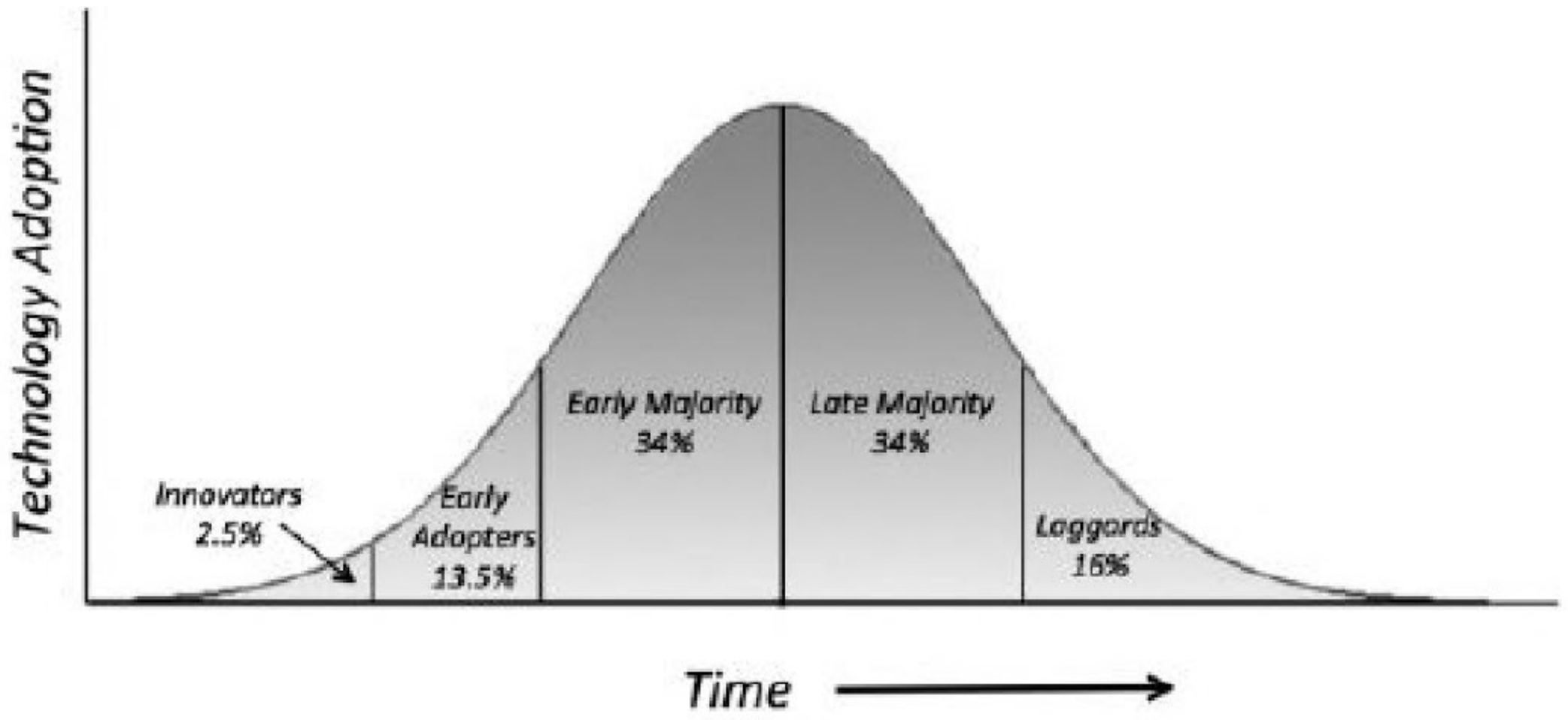

Figure 2.1

The technology cycle is usually faster than the scientific cycle, typically occurring over the period of 5 years or so, probably owing to the fact that the adopters are rushed by forces of ever-shortening technology support cycles as well as the "keeping up with the Joneses" effect. In addition, technology adopters don't have that much to lose except the cost of the new product and the time it takes to learn to use it, whereas there is much more at stake in adopting a new theory of science or reality; namely, your entire worldview.

A New Radical Idea

The idea presented in this book (as well as other books and papers written on the subject) is radical. It falls squarely into the category of "ideas that scare people" and hence, will require at least 30 years for the idea to achieve mainstream acceptance. However, it is more than a theory of science. To be sure, it makes use of the scientific method for establishing evidence, causal relationships and an analytical approach to its conclusions. It has explanatory and predictive power in various fields of science, such as quantum mechanics and cosmology.

However, it also belongs in the domain of philosophy.

Interestingly, philosophy was much more tied to science in the past (hence, the application of the degree "Doctor in Philosophy," aka PhD, to the sciences). And new philosophical ideas don't follow the common time frames of technology or science. Instead, they may need more than 30 years to gain acceptance. There is no rush to philosophy; it is just there to make sense of things, to make your life better. But it is not a religion. There is no dogma, no rules and no hierarchy of leadership. These are concepts designed to keep people in control, not to enlighten them.

Although its roots can be traced back to Plato's Cave allegory, with no small influence by people like Konrad Zuse in the 1960s and Philip K. Dick in the 1980s, I would mark the general genesis of the full formulation of the idea in the year 1999, for reasons that will be described in the next chapter. Hence, as this book is being written, it is 2015 and we are halfway through the scientific adoption cycle. Indeed, I have seen a healthy progression of acceptance in scientific circles, first occurring in fringe publications and late-night talk radio, and then tangential ideas innocuously dropped in articles published in the mainstream media. More recently, ideas around simulations and virtual digital realities have even received occasional support from well-respected and established scientists. The early adopter is aware of it and the early majority is starting to pay attention.

What is it?

Chapter 3

This Radical Idea

> "There are more things in heaven and earth… than are dreamt of in your philosophy."
> - *William Shakespeare, Hamlet (Act I, Scene 5)*

The idea I am talking about is Consciousness-driven Digital Reality.

It is based on four distinct tenets:

1. Consciousness is fundamental and primary. This means that consciousness is not simply an artifact of the complexity of a brain. Instead, it is fundamental to the universe (or whatever we shall call "all that there is"), and more the source of our experience of reality and even the source of reality itself.
2. All matter is information; all forces are rules about how data interacts.
3. The reality we experience is illusory, a simulation of sorts, designed for us to learn and evolve our consciousness.
4. The "system" is digital and consists of, at a minimum, the aggregate of all individuated conscious entities, plus the learning lab, and is driven by a fundamental rule of continuous improvement.

Before I go any further, I must stop and give credit where credit is due—to thousands of years of independent

thinkers who laid the foundation for this new idea.

Credit is Due

- *Historical Philosophers:* Plato, Zhuangzi, Descartes, Jung and the Hindu Maya Illusion all questioned the solidity of reality, contributing thought leadership to the idea of an illusory reality. Plato's Allegory of the Cave explores the idea that we build realities based on what we experience through our senses, which may only be a small fraction of the truer reality. Similarly, Edwin Abbott Abbott's novella *Flatland: A Romance of Many Dimensions* modernizes Plato's allegory by considering what we might experience if our senses are limited to a set of dimensions that is less than true reality. The so-called Dream Argument dates back to the 4th century BCE, when Chinese philosopher Zhuangzi dreamed of being a butterfly and pondered: "Now I do not know whether I was then a man dreaming I was a butterfly, or whether I am now a butterfly dreaming I am a man." French philosopher and scientist René Descartes penned his *Meditations on First Philosophy,* which questions all that we perceive through our senses and considers what little can actually be known with certainty.
- *Physicists:* Eugene Wigner, John Wheeler, Gerard 't Hooft, Brian Josephson and Anton Zeilinger are physicists who pushed (and continue to push) the boundary of physical reality, contributing to supporting evidence for tenet No 3. Their view may be a little different than that of the historical philosophers previously mentioned, as it has both the advantage and disadvantage of being somewhat grounded with experimental scientific evidence for the lack of an objective reality.

- *True Consciousness-driven Digital Thinkers:* Tom Campbell (physicist, author of *My Big TOE)* and Steven Kaufman (author of *Unified Reality Theory)* are two individuals who fully embraced all 4 Digital Consciousness tenets, and independently developed a comprehensive theory of the foundations, functions and evolution of reality. I humbly add myself to this camp and feel that my contributions to this effort consist largely of consolidating a huge wealth of evidence for the theory, developing detailed explanations for anomalies in quantum mechanics and offering a statistically sound model to explain it all. We all developed our ideas on this model independently.
- *Experiencers:* Robert Monroe, William Buhlman and others are researchers who have had the gift of the ability to explore the greater consciousness and realms beyond the so-called physical.
- *Digital Physicists and Mathematicians:* David Deutsch, Ed Fredkin, Konrad Zuse, Brian Whitworth and John von Neumann are physicists and mathematicians who have been thought leaders in digital physics, and supporters of tenet No. 2.
- *Modern Philosophers:* Nick Bostrom (philosopher from Oxford University and author of *The Simulation Argument),* David Chalmers and others who have embraced the simulation model.
- *Pop Culture:* Philip K. Dick, the Wachowskis Brothers and others are popularizers who have actually done a great service to bring simulation scenarios, life after death and paranormal topics into public consciousness.
- *Free-thinking Scientists:* Daryl Bem, Ian Stevenson, Dean Radin, Ervin Laszlo, Stephen Meyer and many other scientists deserve a great deal of credit for having the courage to explore the paranormal and

publish their findings in an often hostile scientific culture.

A Word About Words

The purpose of words is to convey ideas to others. Sometimes, we encounter topics for which existing words are insufficient. This is probably one of them. Words like God, consciousness, illusion, physical, virtual, simulation and reality are extremely difficult to use casually, because everyone has a slightly different understanding of what they mean. It honestly isn't something worth worrying about. If you don't like one word, substitute it in your mind for something that resonates better with you. Ultimately, the purpose of this book is to attempt to convey some ideas that may cause people to think differently and enrich their lives in some way.

That said, it may be useful to state some assumptions about certain words that I will be using in this book, along with some definitions that help the reader to appreciate the arguments made herein.

- *Materialism:* "A theory that physical matter is the only or fundamental reality and that all being and processes and phenomena can be explained as manifestations or results of matter" (per Merriam-Webster) *[author's note: It is refreshing to see that Merriam-Webster properly recognizes that this is just a theory]*.
- *Reality:* By convention, this has traditionally been the physical reality that we normally experience during our waking state. However, I think that it is more accurate to describe "reality" as a general category of environment, which appears to have all of the elements needed to carry out a meaningful existence.

So, therefore, a well-designed computer simulation would generate a type of reality, as would a comprehensive dream state, and, of course the physical waking environment here on Earth. In addition, the so-called astral plane, or "heaven," or the environment that we typically encounter after death, are realities. In fact, to some extent they are more real than our physical waking state reality.

- *Physical Reality (PR):* By convention, this is normally used to mean the physical waking state reality that we all experience when we are not sleeping, meditating, under the influence of hallucinogenic drugs, or experiencing OBEs, NDEs or mystical experiences. Isn't it ironic how many environments we have to exclude to clarify what the physical reality is? But, to be more accurate, what we call physical appears to be virtual. So, henceforth, I will use the term "waking reality" to mean what is traditionally thought of as physical reality.
- *Waking Reality:* See Physical Reality.
- *Virtual Reality (VR):* By convention, this has typically been used to indicate an environment or "reality space" that is layered on top of waking reality, with the assistance of reality-generation tools such as computer simulations and VR goggles. In truth, we have no idea what the *real* physical reality is and so everything else is virtual. Therefore, I use virtual in a relative sense. Experiencing a simulation that is layered on the physical reality makes it virtual to that physical reality. If we were in turn experiencing a simulation within that simulation, we would say that this "second level" simulation is virtual to the "first level" one.
- *Real:* "Real" in the new context can only mean "that which we actually experience." Therefore, a dream is real, as is an OBE and our waking reality. It is all real

as long as we are experiencing it. What our neighbor experiences, however, cannot be real to us.

- *The Universe:* The word "Universe" is used in many different contexts and, unfortunately, recently it has been demoted in significance, not unlike poor Pluto, the celestial body formerly known as a planet. In the materialist world, the Universe is everything. But then along came ideas like parallel universes, Hilbert Space and the Multiverse, and suddenly "Universe" didn't seem so all-encompassing. Then there are those who use Universe to mean "God, except that I don't believe in the traditional Judeo-Christian concept of God but instead in a vague new-agey idea that the Universe looks out for me," as in, "I am going to ask the Universe for advice." However, for clarity, I am only going to use Universe to mean the apparent collection of physical material that extends as far as the Big Bang was able to send it. In other words, what most people think of when they say "Universe." Tom Campbell refers to this as Physical Matter Reality, for those who wish to relate these ideas to his *My Big TOE.*[1]
- *Multiverse:* Max Tegmark has probably done the most in the mainstream science and math community to define what is meant by Multiverse. In that definition, he includes all other forms of Physical Matter Realities that may be "out there," including other "Big Bang-like" universe bubbles, a Hilbert Space of parallel worlds generated by quantum mechanical choices and mathematically failed universes that have to exist in order to solve the materialist dilemma of the finely tuned universe anomaly. It does not, however, include larger constructs, such as the place we seem to travel to when we die and the higher-level reality that might be generating all of the rest of the Multiverse stuff via a simulation-like experience.

- *ATTI:* All That There Is is the true foundation of reality. Being digital (as will be shown) and highly organized, it is pure consciousness. It is a system that contains all of us, as well as mechanisms for us to experience reality and evolve our consciousness. The universe (and if it exists, the Multiverse) are simply projections of experience and, mostly likely (again, as will be shown), a miniscule part of this system.
  - *Subjective:* What we experience.
  - *Objective:* What exists independent of experience. Quantum mechanics and other research have effectively proven beyond a reasonable doubt that objective reality does not exist. However, most of the rank and file of scientists have not yet come to terms with that.

In addition, there are many instances of the use of exponential notation in this book. For those who are unfamiliar with this form of expressing large numbers, it works like this:

> 2E12 is the same as $2*10^{12}$, which is the same as the number 2 followed by 12 zeros, or 2,000,000,000,000, also known as 2 trillion. Those are just many different ways to express the same concept.

Closely related to words are *models.* A model is simply a way of describing something. The number "2" is a model for the idea of having two things. General relativity is a theory of space, time and matter that can be understood equally well using different models. The equations of relativity can be used to derive the relative speeds and masses of moving objects, and the dilation of time and space, such as:

$$x' = gx - gbct$$
$$y' = y$$
$$z' = z$$
$$ct' = gct - gbx$$

Another model describes the exact same transformations, using matrices instead of linear equations.[2]

But a model of warped space (like what a heavy rock does to the surface of a trampoline) can be equally effective in describing what happens to speeds and masses of moving objects as they travel near a massive object.[3]

All are models that are equivalent in describing the same effects.

People use a model like "holographic" to describe a couple different things that relate to the nature of reality:

1. The idea that deep down, in a way that is not apparent to normal senses or means of measurement, things are interconnected.
2. The idea that information about all things exists at every point in space.

I only bring up these ideas to emphasize the point that models, metaphors, theories and descriptive words are just that—models, metaphors, theories and descriptive words. People use them to help explain ideas and experiences. But they are nothing real.

Consciousness-driven Digital Reality

Now let's examine the four tenets in more detail. Comprehensive evidence for each of these will be presented in Chapters 6 and 7, so feel free to skip ahead if you aren't buying it.

1. *Consciousness is fundamental and primary.* The mystery of consciousness has occupied the thoughts and writings of philosophers for millennia. And, although modern science attempts to develop explanations for every unknown, we are still no nearer to a clear understanding of consciousness than Plato was. In fact, one might argue that the longer the explanation for something eludes us, the more fundamental that thing is. Just as water is fundamental to a fish's reality, so is consciousness fundamental to our reality.

> "With no light and only a dim awareness, the fish knows nothing of water. Water just is, has always been, and is taken for granted. The fish does not ponder the nature of water, it swims in it. We swim in an ocean of consciousness. We are not aware of the ocean, but only of our local interactions with it."[4]
> - *Tom Campbell*

> "Meditate, vibrate upon the Lord; immerse your mind in Him, like the fish in the water."
> - *Guru Nanak, founder of the Sikh faith*

Consciousness doesn't "wink out" when electrical activity ceases in the brain. As we shall see in Chapter 7, the evidence is incontrovertible that consciousness can continue to exist in the complete absence of neural activity. Just as the existence of a single white crow would disprove the statement "all crows are black," the existence of a single instance of consciousness existing beyond a functioning brain disproves the statement that consciousness emanates only from brain function. Given that a 1992 Gallup Poll estimated that about 13 million Americans have experienced a near-death experience (NDE),[5] even if a small fraction of those experiences defy

the logical explanatory argument of a dying brain (as a significant fraction of them indeed does), we have way more than the single white crow necessary to disprove the materialist myth that consciousness emanates from the brain.

In fact, why do we need to disprove something that has never had a single shred of evidence in the first place? For evidence, some have made several fallacious arguments, such as experiments utilizing MRI technology that show that "neurochemical processes produce subjective experiences."[6] The problem here is the word "produce." Does the neurochemical process *produce* the experience or does the neurochemical process *enable* the experience? If I were to attach an oscilloscope input to the circuitry of a television set and make the observation that a movie appears on the screen when we observe voltage signals in the television circuitry, should I conclude that those signals are the source of the movie? Of course not. All they did was take part in the facilitation of the decoding of the movie into a signal that could be observed on the screen. The source of the movie was a broadcast center thousands of kilometers away. In our analogy, electrochemical signals in the brain facilitate the experience, but are not necessarily the source of the experience. And once we look at the very real evidence that disproves neurochemical causes for the effect of experience, we can remove the word "necessarily" from the last sentence. Sadly, many scientists don't follow the scientific method of following the evidence where it leads and instead cling to the materialism theory that is routinely taught in schools as if it were a fact.

2. *All matter is information; all forces are rules about how data interacts.* There is actually no evidence that there is really anything solid at a fundamental level. I like to use the word "stuff" to denote that which is theoretically indivisible. The Greeks coined the term atom (atomos),

which means exactly that. Even until the early 1900s, scientists thought that atoms were indeed the fundamental building blocks of matter. In 1909, Ernest Rutherford discovered that the atom was actually mostly empty space with a "solid" nucleus when he and his colleagues fired alpha particles at atoms, and some of them bounced directly back. He said of the experiment, "It was almost as incredible as if you fired a 15-inch shell at a piece of tissue paper and it came back and hit you."[7] Quark theory and string theory have progressively pushed the understanding of matter to more and more tenuous models. The direction this trend of discoveries is taking on the nature of matter is that there is ultimately no "stuff" at all.

The popular objection to the idea of matter as information is that we *feel* stuff when we touch things. But what are we actually experiencing? Even with the Rutherford model of the atom, we don't actually make contact with anything when we knock on a door. If we were to visualize exactly what is happening at the atomic level in extremely slow motion, what we would see is the molecules in the surface of our knuckles getting ever closer to the molecules in the surface of the door. The two sets of molecules never actually make contact. Instead, the closer they get, the greater the repulsive force of electromagnetism that will exist between them. Imagine having two very powerful magnets and attempting to push the north ends of each together. The repulsive force is easily felt. It is this repulsive force at the atomic level that makes you feel the slight pain sensation on your knuckles. But no "stuff" has to exist to make this happen.

The next argument might be that the force itself is carried by particles, which are a form of stuff, and it is the aggregate of those particles that we are feeling. Possibly, but certainly not necessarily. All that we really need in order to experience the feeling in our knuckles when we

knock on the door is something (a force, a particle, a transfer of information) that tells the molecules at the tips of our knuckles that they have been repelled, and our nerve endings, electrochemical signals to the brain and computational processing takes care of the rest.

Some people react negatively to the idea of everything being composed of bits. But this is only because, to this point, the things in the world that we most often think of as binary are technological—like smart phones and computers. So we associate the idea of being digital with cold, calculating technology. But there is nothing cold about flowers, music, love and emotions, and there is no reason for them to be analog versus digital in nature.

In fact, as we shall see, the idea that matter is simply information is not only self-consistent with everything that is observed in nature, but it also solves an incredible number of anomalies that will continue to dog science until they acknowledge this new model. Much more to come in Chapter 6.

3. *The reality we experience is illusory, a simulation of sorts, designed for us to learn and evolve our consciousness.* There are actually two elements of this tenet. One is that our reality is illusory and the other that it has a purpose. Let's tackle the former idea first. When we dream, we believe it is real. If our memories were erased and a new set of memories implanted in our minds, and we were subject to a fully immersive virtual reality experience, we would be in a simulation and not know it. In fact, it is absolutely impossible to know for sure that we are not. The idea of a simulation is not as kooky as it sounds at first. The world's leading physicists have shown that, beyond a reasonable doubt, there is no objective reality. Consciousness appears to be an integral part of the creation of not only our subjective reality, but also of the consensus reality experienced by others. If this is true, and consciousness is separate from the brain, as argued previously, then a

simulation is almost assured.

The use of the word "simulation" can certainly be debated, as it is not the most apt description of the kind of experience that I am presenting. Simulation, as it is generally used, implies something artificial, such as a virtual reality simulation or a flight-training simulator. However, there is nothing unreal about our experiences.

4. *The "system" is digital and consists of the aggregate of all individuated conscious entities, plus the learning lab, and is driven by a fundamental rule of continuous improvement.* This idea puts it all together. Not only is matter digital, but so is consciousness. It is interesting that some have an adverse reaction to this idea and seem to think that it makes our decisions pointless or that it implies solipsism. Neither is necessarily true. It really shouldn't change how you carry out your life. If anything, the recognition that this apparent reality isn't all that there is might even make one act more honorably, inasmuch as there is a point to it all. Your mind is your mind, and your awareness and experiences are still real. If the point is to learn and evolve, as it seems, one should continue to make the best decisions that help and support those who you love. Because their awareness and experiences are real, too. And inferring solipsism is simply a mistake. Multiple individuals with free will interacting in this reality, whether you call it a simulation or something else, is simply not solipsism. Much more about this in Chapter 7.

Taken as a whole, these four concepts together form a very powerful framework that completely explains all aspects of reality, including the most challenging philosophical and scientific conundrums.

Chapter 4

Philosophy, Science and Theories of Everything

> "The first gulp from the glass of natural sciences will make you an atheist, but at the bottom of the glass, God is waiting for you."
> - *Werner Heisenberg*

Depending upon your mentality, outlook on the world and conditioning, you may be tempted to approach the Digital Consciousness idea with the mindset of "but is this science?"

But why do we even ask such a question? What does it even mean for something to be "scientific?"

To begin to explore the answers to these questions, we need to consider what it is that we care about when considering this theory. If you are like me, we care about the likelihood that the theory represents truth and how much truth there is in it. Science does provide a framework for accumulating supporting evidence and eliminating aspects of a theory or an entire theory via conflicting evidence. To that end, the scientific method can be very useful in helping us to validate or refine our theory.

However, science can't say much about existence, consciousness, awareness, spirituality, ecstatic experiences, or even truly knowing something. Descartes said, "I think, therefore I am." Actually, being French, he said "*je pense, donc je suis*" in his *Discourse on the Method* in 1637, and later wrote the Latin *"cogito ergo sum"* in

Principles of Philosophy. "I think, therefore I am" was a translation, as is perhaps a clearer alternative form "I am thinking, therefore I exist." To know that you exist may actually be the closest thing we have to subjective certainty. And yet, there are no scientific experiments that can be done to validate it. It is simply "knowing."

What is Science?

In actuality, the modern "scientific method" is only a few hundred years old; although many sciences, such as medicine and astronomy, have been practiced for thousands of years. No two philosophers of science will agree on what constitutes science.

A modern, and commonly referenced, scientific method consists of the following steps:

1. Ask a question
2. Do research
3. Construct a hypothesis
4. Test the hypothesis via experiments
5. Analyze data and draw conclusions
6. Report results

Depending on the conclusions drawn, a feedback loop in the process may be necessary, in order to refine the hypothesis and create new experiments to generate more data.

As a hypothesis becomes stronger, owing to the amount of supporting evidence for it, it enters the realm of a "theory."

And that's pretty much the extent of it. Note that there is no concept of "proof" in science. Proofs are in the domain of mathematics. In fact, there are no absolutes in

science. Science deals only with hypotheses, evidence and theories. The more evidence that supports a theory, the stronger the theory should be considered to be.

As a methodical process, the scientific method is an excellent tool in providing a framework for theory refinement. However, it should by no means be considered a universal or fundamental concept. It's rather obvious that it isn't given the many refinements applied over the centuries, but it is sometimes hard to recognize that everything we base our society on, including ideas about science, are simply fluid and temporary ideas that fit a contemporary context. The coming realization that there is no such thing as 100 percent fixed objective reality, for example, will certainly reshape our views on what science is and how it should be conducted.

Another aspect of the definition of science is the concept of demarcation criteria. These are attributes that can be used in an attempt to categorize theories and concepts into science or non-science. Over the years, various demarcation criteria have come into and out of favor. Some have asserted that for something to be "scientific" it must meet these criteria and, as a result, science "bigots" regularly trot these criteria out to assert that ideas, which disrupt their cherished worldview, are "pseudo-science." A partial list of commonly used demarcation criteria follows:

- Testability: Is it possible to derive a test that furthers or refutes the hypothesis or theory?
- Falsifiability: Is it possible in theory to determine that the hypothesis or theory in question is false?
- Observability: Is the theory observable?
- Predictability: Does the theory make currently untested predictions that can later be tested for validation?
- Repeatability: Are the outwardly observable aspects

of the theory consistently repeatable?
- Mechanism: Is there an underlying physical material cause behind the observable aspects of the theory?

The Mechanism criteria has long since been discredited owing largely to the fact that theories of gravity (aka vortex gravity) based on an underlying mechanism (ether) fell out of favor when the evidence mounted to support a field-based theory. The concept of an ether-filled universe was ultimately dealt a death blow from the Michelson-Morley experiment. This experiment, named after scientists Albert Michelson and Edward Morley, was conducted in 1887, and used an interferometer to measure tiny differences in the speed of light propagating with the (supposed) ether and the speed of light going against the ether. Since no differences were noted, it was apparent that there was no such ether. I find it interesting that the results of a single experiment can make a scientific demarcation criterion obsolete.

In fact, just as there is no universal list of criteria that defines life, there is also no universal list of criteria that defines science. String theory is generally accepted as a bona fide scientific theory and string theory curricula exist in all of the most reputable university physics programs. But string theory is neither testable nor falsifiable. Who would tell physicists Edward Witten, Leonard Susskind, Brian Greene and Michio Kaku that their field of research is pseudo-science?

What about observability? Psychology is an accepted field of applied science. Yet, the mental states on which psychology is based are not directly Observable, only the resulting behaviors. Neither are they repeatable. In evolutionary biology, the common practice of inferring past mutations despite the lack of fossil evidence is certainly not following an Observable practice. And pretty much all theories based on fields are not Observable,

except in the macroscopic sense. The Big Bang Theory, especially the inferences around the early epochs and inflation, is neither Observable nor Repeatable.

And then there is the Many Worlds Interpretation (MWI) of Quantum Mechanics. David Raub conducted a poll of 72 "leading cosmologists and other quantum field theorists" in 1995 and found that 58 percent of them agreed with the statement "Yes, I think MWI is true."[1] And yet, that theory is neither testable, falsifiable, observable nor predictable.

[Note: I fully acknowledge that some may argue these assessments inasmuch as what seemed impossible yesterday (e.g. teleportation) is routine today and what seems impossible today (testing MWI) may very well turn out to be possible tomorrow.]

Paul Feyerabend, the late professor of philosophy from the University of California, Berkeley, argues in his book *Against Method* that there should be no strict rule-based methodology to science and that such rules simply restrict scientific progress.[2]

Digital Consciousness—Science or Philosophy?

How does Digital Consciousness fare in the test of what constitutes science?

- Testable: Yes. At Fermilab, the US's self-designated "premier particle physics laboratory," an instrument called the Holometer is being developed to study and test the quantum nature of space. The other aspect of our theory, immortal consciousness, will be tested by each and every one of us when we die. In addition, rigorous analysis of corroborating evidence of past-life experiences represents valid scientific testing.
- Falsifiable: At this point, it does seem like Digital

Consciousness may not be falsifiable. On the digital front, if any experiment designed to detect the discrete nature of space (such as the Holometer at Fermilab) comes up with a negative result, it could always be because the true resolution of space is much finer than the experiment can detect. On the consciousness front, it would also seem to be impossible to determine for certain that consciousness emanates strictly from brain function.

- Observable: Most definitely. As this book will show, many have experienced directly the separate nature of consciousness. And, theoretically, a sufficiently sensitive experiment could confirm the digital nature of space and matter.
- Predictability: Yes. Keeping in mind that while a theory may make predictions, the confirmation of a given prediction can never 100 percent confirm the theory (otherwise it would be a fact, not a theory, which doesn't exist, as previously argued). Digital Consciousness can make certain predictions. For example, since the system always evolves to more profitable outcomes, there could never be an apocalyptic event. This "evening effect" is explored in my first book, *The Universe—Solved!,* and can be summarized by the argument that the state of our reality will neither trend toward disaster nor utopia, despite a statistical likelihood of doing so. The implied "state machine" nature of fundamental reality, currently fully able to explain such quantum anomalies as entanglement and the quantum Zeno effect, may be exploited to predict other anomalies. Many other predictions will be covered later in the book.
- Repeatability: Yes, but we need to look at this concept a little closer. To be able to repeat an experiment and get exactly the same results—if, by

"results," we mean detailed data points—I would argue that this rarely, if ever, happens in any case. All results have error bars, owing to noise, limitations of the measurement systems and other unknown aspects of the experiment, so it is often impossible to get exactly the same data points. In addition, experimenter's bias and "observer-expectancy effect" can preclude consistent results from the same experiment done by different experimenters. Thus, "same results" or "similar results" means statistically the same or similar. To bring this point to a clear example, consider a telepathy experiment. As a subtle effect, which can easily be explained by Digital Consciousness, one will never get consistently repeatable data points. However, under similar experimental circumstances (for example, same environment, subjects selected in the same manner, perhaps even at random), the statistical outcome should be similar. For example, if a particular experiment shows a .5 percent bias toward positive results with an odds against chance of 1E-7, and subsequent experiments show similar positive biases within the error bar of the experiment, that can be said to be repeatable.

So, by 80 percent of the standard scientific demarcation criteria, Digital Consciousness theory (DCT) can be considered to be scientific, certainly more so than string theory or the MWI theory of quantum mechanics.

Even disregarding the controversy over scientific demarcation, science isn't for everything. Have you ever read a scientific article explaining what love is? If so, I bet it left you cold. Does that mean that love isn't real? Of course not. Just that love is something that probably doesn't need to be analyzed using a scientific method. But that doesn't make it worth talking about, writing about,

understanding and experiencing.

So, if it is important to you, the reader, that Digital Consciousness be considered scientific, you can rest assured that it may be considered so. And if you don't care about arbitrary and short-lived definitions of science, and care more about the evidence for a greater truth that underlies everything about our reality and defines what life is all about, call it philosophy.

Theories of Everything

The commonly used expression "Theory of Everything" (or TOE, for short) is actually somewhat of a misnomer. As used in scientific circles, a TOE is really more of a framework that supports all observable laws of physics, including other theories such as general relativity and quantum mechanics. Past and present proposed physics TOEs include the Grand Unified Theory (GUT) and string theory.

> "The more important fundamental laws and facts of physical science have all been discovered, and these are now so firmly established that the possibility of their ever being supplanted in consequence of new discoveries is exceedingly remote… Our future discoveries must be looked for in the sixth place of decimals."
> - *Nobel Prize Laureate Albert A. Michelson, 1894*

As Albert Michelson made the mistake of thinking only in the context of his time, so do today's physicists, who think that string theory or some other competitive TOE will be the final TOE in physics. Unfortunately, there are many things wrong with this way of thinking. First of all, who

decided that physics is the sole domain of TOEs? Physics will never explain consciousness. But isn't the so-called hard problem of consciousness a fundamental mystery that any true "theory of everything" should be able to address? Secondly, if we have any chance of discovering a true framework to explain ATTI, we need to get out of the mindset of thinking only in terms of our own time and culture.

Digital Consciousness can certainly be described as a TOE framework and a very comprehensive one at that inasmuch as it supports not only all foundational elements of physics, but metaphysics as well. No other theory can make that claim. The rest of this chapter will develop the powerful logic behind that claim.

Deductive, Inductive, Abductive Reasoning

A standard scientific method of developing a theory is via the logic technique of abductive reasoning. This quick aside explains the different kinds of reasoning:

- Deductive: Deductive reasoning infers specific conclusions from general rules or assumptions. As an example:
  - All swans are birds (general principle)
  - Fred is a swan
  - Therefore Fred is a bird (specific inference)

In science, deduction is used to go from theory to prediction and test. So, if the theory is true, then its predictions should be affirmed through experimentation. If they are not, the theory would need to be modified or the logic behind the prediction re-examined.

- Inductive: Inductive reasoning infers a generalization from specifics. For example:
  - 100 observations of individual swans indicate that

each is white (specific observations)
    - Therefore, it may be inferred that all swans are white (general inference, theory)

In science, inductive reasoning is used to form hypotheses and theories. Note that the general inference is not necessarily true. So, for the purposes of science, it is better not to include definitive statements. In the above example, all it would take is a single black swan to disprove the theory. However, if the theory is stated "most swans are white," then the theory has a better chance of standing (that is, until huge colonies of black swans are found that exceed in size the previously known population of white swans).

- Abductive: Abductive reasoning starts with an incomplete set of observations and proceeds to the likeliest explanation. For example:
    - Fred is a black bird
    - Fred is shaped like a swan
    - Fred hangs around with white swans
    - Most swans are white
    - Hypothesis: Fred is a rare black swan

Abductive reasoning is used routinely by doctors to make a diagnosis based on test results or by jurors making a decision based on evidence. It is commonly used in science as "inference to the best explanation." For example, the existence of Neptune was abduced from the odd orbit of Uranus. The discovery of the electron was abduced from the deflection of cathode rays.[3]

We will use abductive reasoning to demonstrate both the power of Digital Consciousness, as well as its strong likelihood of being true. One way to think about this is through the use of Venn diagrams.

Remember Set Theory?

Set theory is a branch of mathematics that involves the logic behind and relationship between groupings of objects. Sets can be easily described using Venn diagrams, as shown in Figure 4.1:

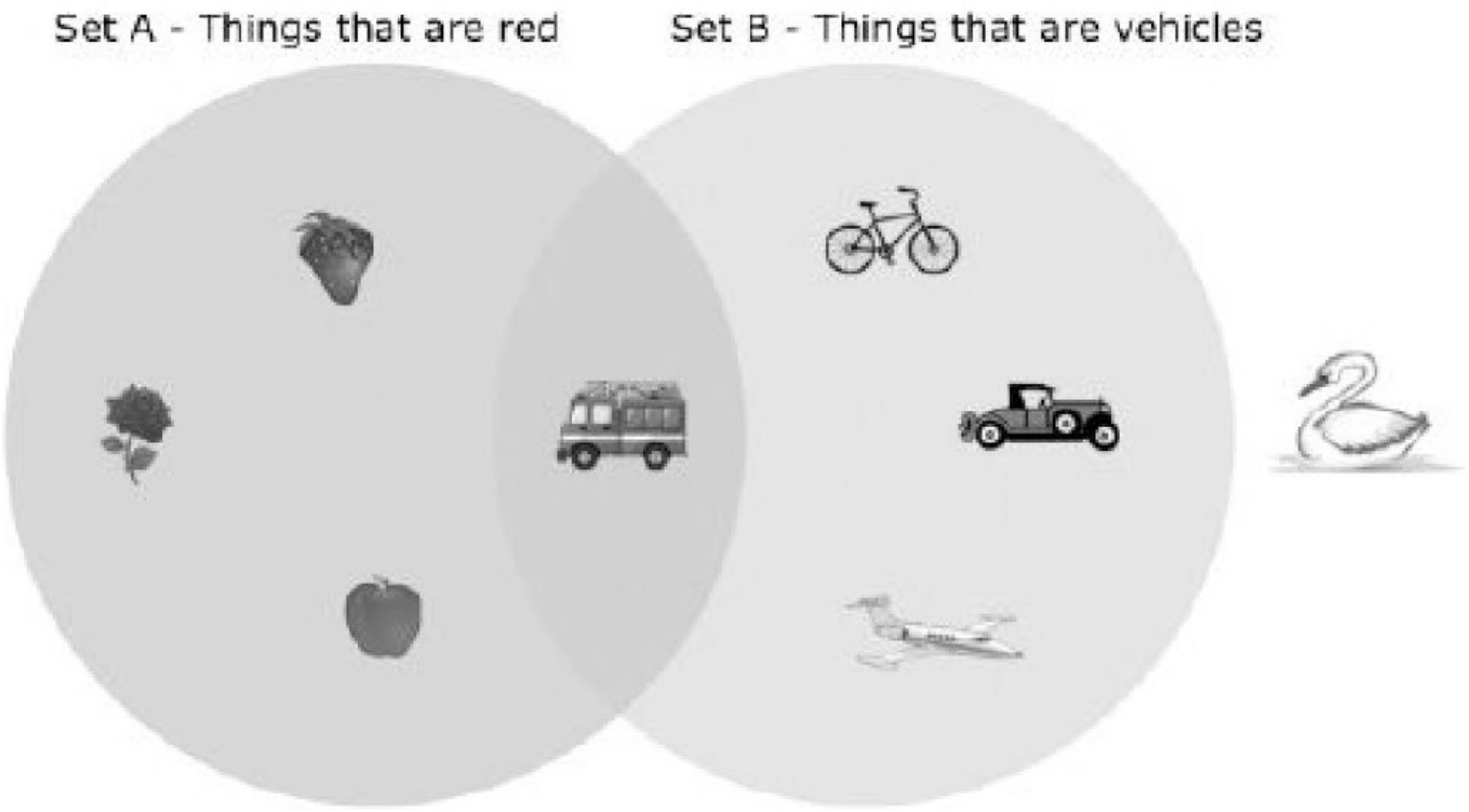

Figure 4.1

Imagine that Set A consists of all things that are red and Set B consists of all things that are vehicles. The *intersection* of Set A and B would therefore be all things that meet the criteria of both sets, namely vehicles that are red (for example, a fire engine). So in our diagram, there are four places that objects can be:

1. Set A only—such as a red rose
2. Set B only—such as a blue car
3. Both Set A and Set B; aka the *intersection* of Set A and Set B—such as a red fire engine
4. Neither Set A nor Set B—such as a white swan

We can also use sets and Venn diagrams to illustrate the abductive concept of the theory that best matches the data. Figure 4.2 shows how this would work:

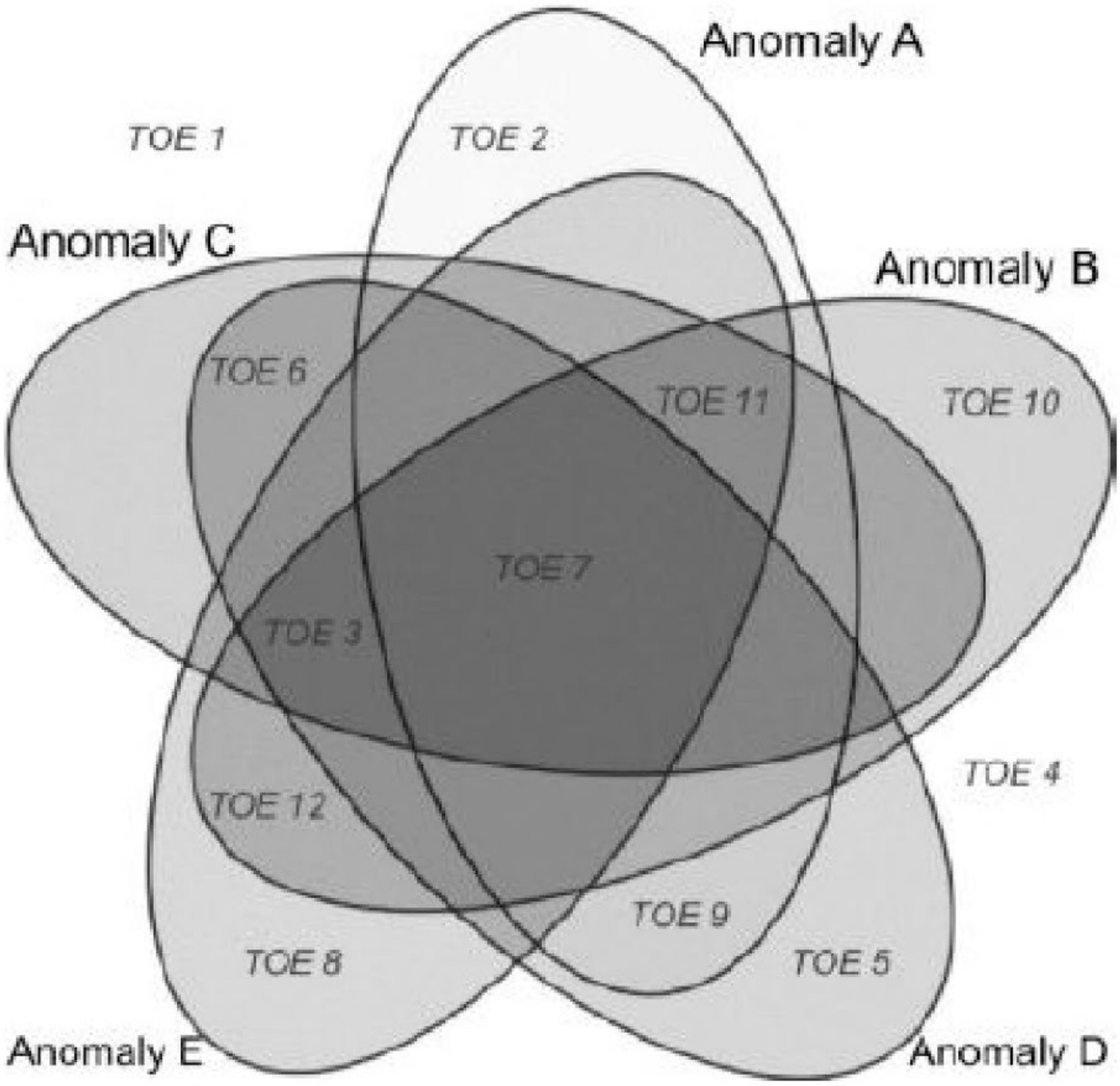

Figure 4.2

There are five anomalies in this "anomaly space" and 12 TOEs under consideration. TOEs 1 and 4 don't explain any of the anomalies at all, while TOEs 2, 5, 8 and 10 each explain only one. TOEs 6, 9 and 12 explain two anomalies, while TOEs 3 and 11 explain four of them (for example, TOE 11 explains all but Anomaly D). Only TOE 7 explains all five anomalies. Note that this doesn't imply that TOE 7 is "truth"—only that it provides an explanation for the five selected anomalies. All other TOEs can be rejected as true TOEs that provide a framework for everything; although many will still be called TOEs,

because that is what people tend to call theories that work for everything in their particular field of interest.

Also, some TOEs might be able to "support" the anomalies but not have any real explanatory power. Often, a TOE (such as the "Grand Unified Theory" of physics) will provide a strong foundation for theories, but it is left to experimenters and theoretical scientists to come up with the specific theories that fill in the gaps.

In Figure 4.3, to take a real example, we analyze which theory of planetary motion explains various anomalies observed over the centuries. So, there is a set identified for each anomaly, which contains all of the theories that would explain that particular anomaly. Or, for another way of looking at it, theories are plotted and encircled by the anomalies that they satisfy. In this example, four anomalies are considered:

1. Retrograde motion: Retrograde motion is the apparent backward motion of the outer planets, which occurs as a speedier Earth passes them in its revolution around the sun.
2. Lack of stellar parallax: Stellar parallax would be the effect of seeing stars at different angles (relative to other celestial bodies) from the vantage point of different positions in orbit.
3. Phases of Venus change size: When Venus is between the Earth and the sun, it is at its largest apparent diameter, yet its phase is at its newest point (thinnest sliver). Whereas when it is opposite the sun, it is a full phase, but at its smallest diameter in the sky.
4. Stellar aberration: Stellar aberration is an annual variation in the apparent position of stars owing to the variance of speed and direction of the Earth relative to the star.

Five different theories are summarized and included in the proper sets:

1. Aristotelian Geocentrism: Developed by Aristotle in the fourth century BCE, it is a simple model of the Earth at the center of the universe, with the sun, stars and planets revolving around it.
2. Ptolemaic Geocentrism: Claudius Ptolemaeus first formalized a comprehensive geocentric model of the universe that took into account retrograde motions of planets via "epicycles."
3. Copernican Heliocentrism with nearby stars: Copernicus' initial sun-centered model of the heavens still assumed that stars were fixed in a celestial sphere that wasn't that distant in comparison to the outer planets.
4. Tychonic Geo-heliocentrism with nearby stars: Tycho Brahe's model had planets revolving about the sun with the sun revolving about the Earth. It was highly equivalent to the pure Copernican heliocentric system from an observational standpoint.
5. Modern Keplarian Heliocentrism: Keplar's careful calculations of planetary motion allowed him to develop the more advanced laws of elliptical motion. That, coupled with advanced measurements showing that stars are very distant in comparison to the planets, brings us to the modern view of planetary motion.

Looking at Figure 4.3, it can be seen that one theory, Aristotelian Geocentrism, failed to explain three of the four anomalies (mostly likely because it was never fully formalized and based on detailed observation). Ptolemaic Geocentrism explained two of the anomalies—planetary

retrograde motion and an apparent lack of stellar parallax —while early Copernican Heliocentrism more easily explained retrograde motion, but failed to explain the lack of stellar parallax, assuming that stars were relatively close to the sun. However, the heliocentric model very thoroughly explained the fact that the phases of Venus consistently vary with its apparent size in the sky. Tycho Brahe's combined geo-heliocentric model succeeded in explaining three of our chosen anomalies, with the added advantage of keeping the Church happy by placing the Earth at the center of the universe. By allowing for the possibility that stars were extremely distant compared to planets, the Copernican Heliocentric model also managed to explain three anomalies. However, a fourth anomaly was discovered in the 18th century, called Stellar Aberration. There was no way for even Brahe's model to explain that without Earth motion relative to stars, and so the only model capable of explaining all four anomalies is the Modern Heliocentric model that we have today.

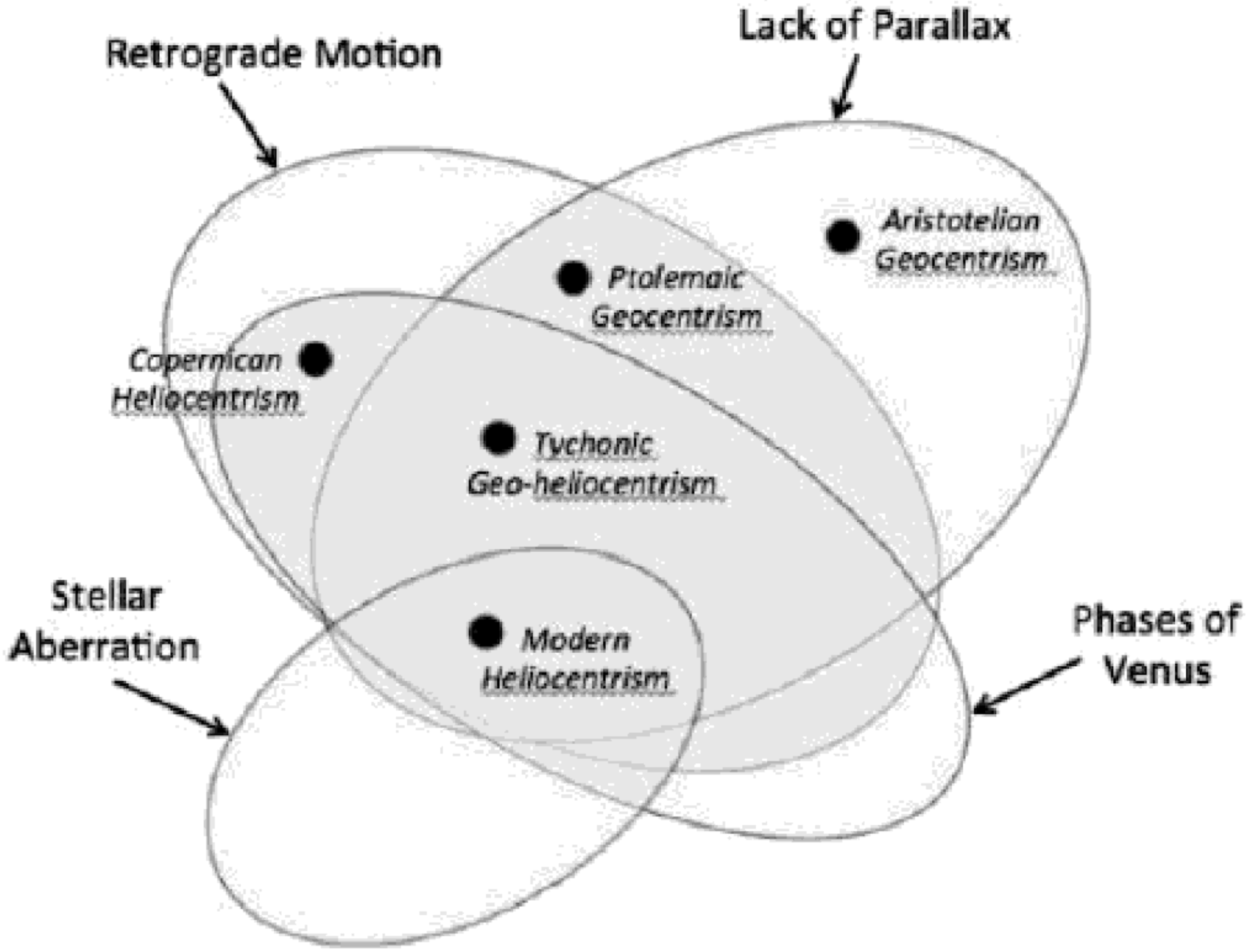

Figure 4.3

There is another way to illustrate this. Instead of plotting "theory space," we could plot "anomaly space" (a set of anomalies) and use Venn diagrams to create sets of anomalies that are satisfied by particular theories. Figure 4.4 demonstrates this method. In this case, rather than seeking the theory that is at the intersection of all sets of anomalies, we look for the theory that supports all anomalies.

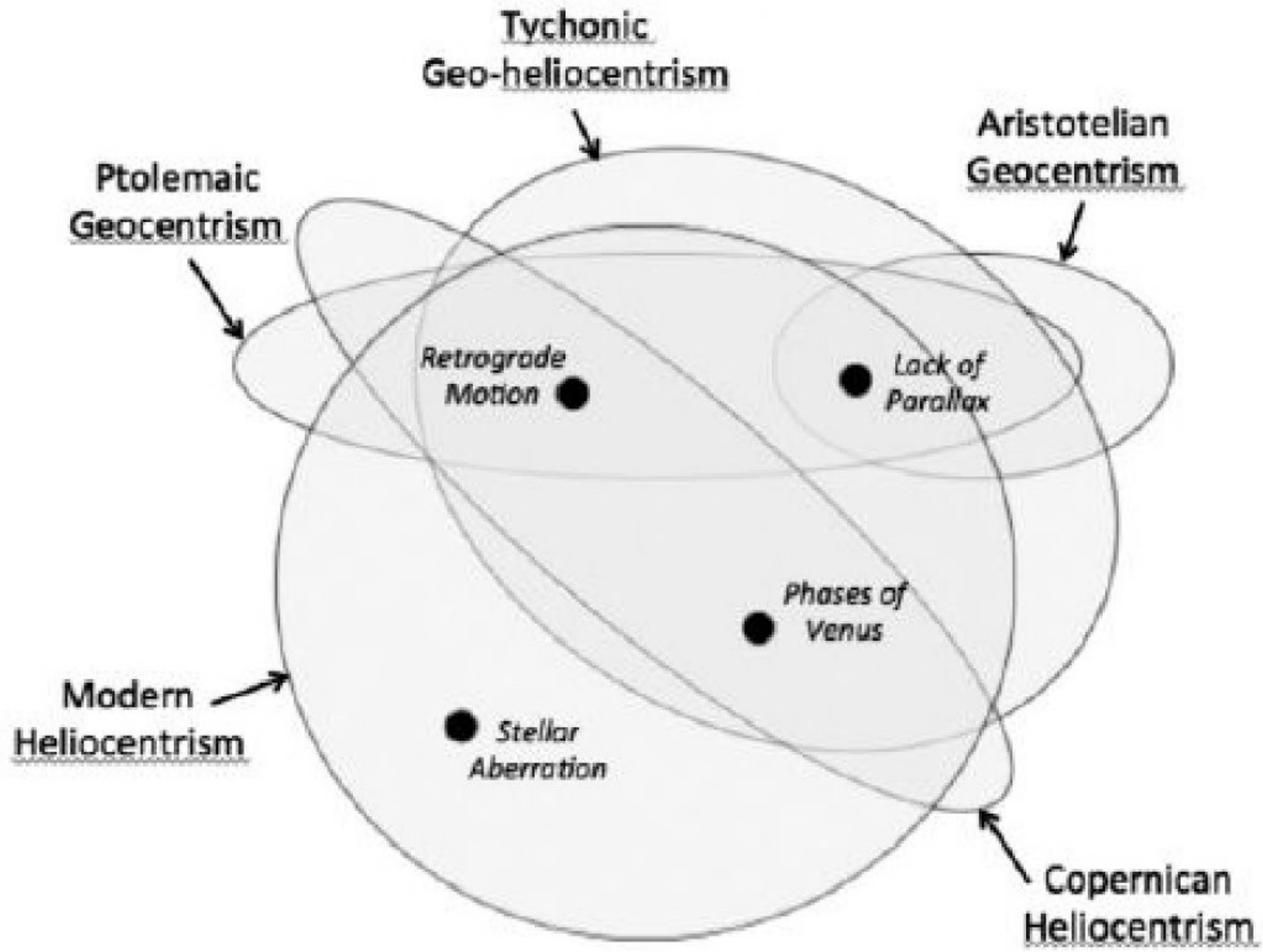

Figure 4.4

Aristotelian Geocentrism only encircles the "Lack of Parallax" anomaly. Ptolemaic Geocentrism covers Retrograde Motion plus Lack of Parallax, while Copernican Heliocentrism covers Retrograde Motion and Phases of Venus. Tychonic Geo-heliocentrism covers three of the four anomalies, but only Modern Heliocentrism covers all four. It's the same information, just presented in a different manner.

Of course, this is a contrived example, used for illustrative purposes only. Since the time frame for the development of these celestial motion theories was spread over 2,000 years and the various anomalies were observed over a similar period, there was never a point where anyone had five theories to apply to four anomalies at the same time. However, if they did, it would be clear to see what the winner was. I intend to use the same process to show that the Digital Consciousness model should be

taken very seriously as a best fit to all of today's anomalies.

Chapter 5

Evidence—Digital

> "Every physical quantity, every it, derives its ultimate significance from bits, binary yes-or-no indicators."
> - *Physicist John Wheeler*

This is where the fun begins—compiling evidence for DCT. This chapter presents the evidence that our reality is ultimately discrete and digital deep down, while the next chapter presents the evidence for a consciousness-driven reality.

Which Came First, the Digital Chicken or the Digital Philosophy Egg?

As many scientists, mathematicians, futurists and philosophers are now embracing the idea that our reality is digital, it would be perfectly understandable to wonder if digital philosophy itself is tainted owing to the tendency of humans to view ideas through the lens of their times. We live in a digital age, surrounded by computers, the Internet and smart phones, and so might we not be guilty of imagining that the world behaves just as a multiplayer video game does? We probably wouldn't have had such ideas 50 years ago when, at a macroscopic level at least, everything with which we interacted appeared analog and continuous.

Actually, the concepts of binary and digital are not at all new. The I Ching is an ancient Chinese text that dates

to 1150 BCE. In it are 64 combinations of eight trigrams (aka the Bagua), each of which clearly contain the first three bits of a binary code. Many other cultures, including the Mangareva in Polynesia (1450) and Indian (5th to 2nd century BCE), have used binary encodings for communication for thousands of years. Over 12,000 years ago, African tribes developed a binary divination system called Odu Ifa.[1]

> "There are 10 types of people in the world: those who understand binary, and those who don't."
> - *Ian Stewart*

German mathematician and philosopher Gottfried Leibniz is generally credited as developing the modern binary number system in 1679, based on zeros and ones. Naturally, all of these other cultures are ignored, so that we can maintain the illusion that all great philosophical and mathematical thought originated in the EU. Regardless of Eurocentric biases, it is clear that binary encoding is not a new concept. But what about applying it to the fundamental construct of reality?

It turns out that while modern digital physics or digital philosophy references are replete with sources that only date to the mid 20th century, the ancient Greeks (namely Plato) believed that reality was discrete. Atoms were considered to be discrete and fundamental components of reality.

A quick clarification of the terms "discrete," "digital," "binary," "analog," and "continuous" is probably in order:

- Discrete: Having distinct points of measurement in the time or spatial domains.
- Digital: Having properties that can be encoded into bits.