

Reality Matters

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Abstract

Starting from the basic premise in George Land's article "The Evolution of Reality" (The Journal of Bahá'í Studies, vol. 3, no. 1) that "atoms created their own realities," this article will apply the Bahá'í teachings to show that this assertion is only partially right. The question begging to be answered is how can atoms know what to do and what to be, thereby creating their own function and purpose? How matter affects reality, and more important, how reality affects matter, was answered by Bahá'u'lláh and 'Abdu'l-Bahá over one-hundred years ago. "The new physics" of relativity and high energy describe the reality of matter in corresponding terms. Our universe is turning out to be not only intelligible but also encoded with intelligence beginning on the subatomic level. The Bahá'í writings show that it is the power of the emanating spirit of God which is the reality animating creation, also beginning with the atom. It is this one Reality encompassing and underlying all other realities that defines and gives meaning and purpose to all created things.

Résumé

Partant de la prémisse de base de George Land, expliquée dans son article intitulé «The Evolution of Reality» («L'Évolution de la réalité», La Revue des études bahá'íes, vol. 3, no. 1), cet exposé fait appel aux enseignements bahá'ís pour démontrer que cette affirmation n'est vraie qu'en partie seulement. La question à laquelle il faudrait répondre est: comment les atomes peuvent-ils savoir quoi faire et quoi être, créant ainsi leur propre fonction et but? Comment la matière influence la réalité et, plus important encore, comment la réalité influence la matière sont des questions auxquelles ont répondu Bahá'u'lláh et 'Abdu'l-Bahá il y a déjà plus de cent ans. La «physique nouvelle» de la relativité et de la haute énergie décrit la réalité de la matière en termes correspondants. Ainsi, notre univers se révélerait être, non seulement intelligible mais aussi encodé d'intelligence dès le niveau subatomique. Les Écrits bahá'ís, d'autre part, révèlent que le pouvoir de l'esprit émanant de Dieu constitue la réalité qui anime la création, dès le niveau de l'atome également. Cette réalité, qui à la fois englobe et sous-tend toutes les autres réalités, est ce qui définit et confère un sens et un but à toute chose créée.

Resumen

Comenzando con la aserción básica según el artículo de George Land "The Evolution of Reality" ("La Evolución de la Realidad") (La Revista de Estudios Bahá'ís, vol. 3, no. 1), de que "los átomos crearon su propia realidad," esta disertación se vale de las enseñanzas bahá'ís para demostrar que la declaración es apenas medio correcta. Más al caso es la pregunta de, ¿cómo saben los átomos qué hacer y qué ser, creando así su propia función y propósito? La forma en que lo material afecta la realidad, y aún más importante, como la realidad afecta lo material fue aclarada hace mas de cien años por Bahá'u'lláh y por 'Abdu'l-Bahá. La "nueva física" de la relatividad y de la mecánica cuántica traza la realidad de la materia en términos correspondientes. Resulta que nuestro universo no sólo es inteligible, sino también está codificado con inteligencia que

comienza al nivel sub-atómico. Los escritos bahá'ís demuestran que la fuerza emanante del Espíritu de Dios es la Realidad animando a la creación, comenzando asimismo con el átomo. Es esta única Realidad que, abarcando y antecediendo toda otra realidad, define y da sentido y propósito a todas las cosas creadas.

The *Journal of Bahá'í Studies* has published a number of thought-provoking essays on the nature of reality in the recent past, all of which deserve individual attention, but it was George Land's essay, "The Evolution of Reality" that prompted this response. Drawing upon some similarities between General System Theory (GST) and Chaos Theory, neither one of which was identified nor credited in his article, Land offers what seems to me to be an incomplete premise regarding reality, matter, and evolution. His assertion that "Atoms created their own reality" (28) follows a certain logic derived from the above two theories that concern themselves primarily with responses of organized living systems (GST) and, in the case of Chaos Theory, the effects of effects which determine future states and conditions of systems or events which seem to be random. In this latter theory, the repetition of patterns plays a dominant part.

If I am reading Land correctly, he enlarges upon the "from chaos to order" idea to include the evolution of matter into a coherent universe. He proposes that through atomic and molecular repetition the systems become self-referential, resulting in increasingly successful learned behavior. The outcome is the system's capability to create both its function and its purpose.

However, the reality Land talks about is not the system's essential inner reality, nor is it an outer all-encompassing physical reality. What he seems to be saying is that any organism creates not only its own personal and environmental reality but also its own personal function and purpose as it goes about its business of enhancing conditions for its survival. Land says this ability is innate within atoms, molecules, cells, and ever-larger systems. He accounts for its presence as having evolved by means of an unexplained "inner integral drive" ("Evolution" 21) to create order out of chaos, and purpose out of order. Put together, all of these conditions would result in a teleological universe with no causation and as many individual purposes and realities as there are organisms. This anarchistic and existentialist reasoning avoids having to deal with origins because matter has no past. It teaches itself how to be self-correcting, self-evolving, self-organizing, self-maintaining, and self-creating.

We know that this is not exactly the way our universe behaves. Self-conscious individuation (and individualism) takes place on a very specialized, highly evolved plane. By avoiding a proper explanation of his premise (how such a miracle of life could evolve anywhere in the universe to begin with), Land gives us only a few vague words. His logic cannot escape the implication that atoms (matter) seem to be inherently intelligent, and Land admits that he is uncomfortable with the growing body of experiments which seem to

demonstrate intelligence or consciousness on sub-atomic levels because it creates “confusion,” that is, if it is true that particulate energy is mindful, we will have no choice but to redefine once more what we mean by reality and what we mean by matter.

The Argument

Both religion and science have long sought to unravel the riddle of life and the universe. The Bahá'í teachings seem to hold the key to these mysteries, but solving mysteries means we must go beyond them, behind them, and read between the lines. Truth is both illusive and an elusive goal; reality is its beacon.

This article will explore the matter of reality and the reality of matter and will describe how each affects the other based upon the author's understanding of the Bahá'í writings on these subjects. The article also examines how the Writings correlate with particular philosophic thought and some current theories in the sciences.

The Scientific and Philosophical Background of the Argument

Humanity's perception of reality has changed many times throughout recorded history, particularly in the West. Ptolemy's picture of a geocentric universe satisfactorily explained both our physical and our social universes for some 1800 years. When it gave way to the new picture proposed by Copernicus, Galileo, and Newton, both religion and philosophy found themselves having to redefine their traditional reality-bases. Since then it has been science, not religion or philosophy, that has described our physical and, by association, our social worlds to us. With the emergence of the “new physics”—relativity and quantum mechanics—early in the twentieth century, humanity's perception of what was real began its most radical shift.

For example, do we think of an object such as a chair as a solid piece of furniture or as mostly empty space? Most of us now know that both descriptions are true, but is one truer than the other? Is matter more real than the energy it is “composed” of, or is energy, having preceded matter, the dominating reality? We have also learned that the energetic atom occupies a world stranger and more complex than anyone had dreamed possible one hundred years ago.

Sir Arthur Eddington, one of the giants of relativity physics with a mystical bent, had many thoughtful things to say about the problem of defining reality. He wrote:

In most subjects (perhaps not excluding philosophy), it seems sufficient to agree on the things that we shall call real, and afterward try to discover what we mean by the word. And so it comes about that religion seems to be the one field of inquiry in which the question of reality and existence is treated as of serious and vital importance. (*Quantum Questions* 196)

And so it has come about that not only has the word *reality* itself become a language problem, but trying to define or describe it has also become an even riskier undertaking.

With such an ambiguous picture of physical reality (what you see is what is real, but the reality of what you do not see is still more real), the time was ripe for Ludwig Wittgenstein (d. 1951), mathematician and philosopher, to inform both philosophy and science that what this picture really conveyed was that there is no real reality out there—we have invented it by means of an agreed-upon discourse of language and mathematical symbols that has imposed order and meaning upon a universe that has none.

The problem worsens when we consider that there is only a fragile common inner reality we all share. There are as many versions of what an appropriate subjective reality might be as there are people. Like the eighteenth-century British empiricists, contemporary behavioral philosophers also consider reality to be little more than sense perception and physiological responses. To the social scientist, our inner and outer realities have been indoctrinated by our cultures.

We need also to consider the picture of reality experienced by members of the animal kingdom; this kingdom too has both inner and outer dimensions. Is the human picture of physical reality any more "accurate" than the animal's? And if atoms do possess intelligence, what kind of physical reality do they perceive? Certainly their picture of reality would be more fundamental, thus rendering it even more "accurate." It would seem that the more sensitive to and aware of reality's disguises organisms become, the more fragile and tenuous, the more ambiguous and elusive reality becomes.

The Bahá'í Argument

Both Hinduism and Buddhism examine the ambiguities of what constitutes reality and the metaphysical traps these ambiguities set. Their literature abounds with descriptions and insights on almost every level of how to understand reality. The Bahá'í writings also follow in their tradition, but both Bahá'u'lláh and 'Abdu'l-Bahá give us several gauges for determining reality and its place in both the physical and spiritual realms.

Much as Parmenides and Plato proposed almost 2,500 years ago, the Bahá'í Faith recognizes the underlying oneness of an unchanging reality that reveals itself in gradients in the world of creation. What at first seems to be a splintering of this one reality into fragments like a broken mirror, as the ancient Gnostics thought, is a misleading metaphor. "But for this Essence of the essences, this Truth of truths, this Mystery of mysteries, there are reflections, auroras, appearances and resplendencies in the world of existence" ('Abdu'l-Bahá, *Some Answered Questions* 147). The reality underlying all phenomena, 'Abdu'l-Bahá said, was unchanging. "The material world is subject to change and transformation" (*Promulgation* 161). "Changes and transformations are not

applicable to that eternal reality. Transformation from condition to condition is the attribute of contingent realities" (*Promulgation* 174).

When discussing reality, 'Abdu'l-Bahá used this word as a synonym for truth. He usually stated what we call the first basic Bahá'í tenet as the independent investigation of reality (see *Promulgation* 62–63). In fact, the index for *The Promulgation of Universal Peace* does not even have a separate listing for "Reality"; it refers the reader to "Truth"). A Bahá'í definition of truth might be to define it as humanity's recorded collection of accurate statements about reality. Bahá'ís believe that it is the holy teachers of all the revealed religions who give us the criteria for determining what are accurate statements regarding spiritual and moral truths, and what are not. Those sciences which are self-correcting uncover the truths that relate to natural phenomena.

The Three Worlds of Reality

'Abdu'l-Bahá referred to both a Divine Reality¹ and a relative reality, but the only actual definitions and descriptions of these realities are contained in his explanations of the "three worlds": the world of God, the world of the Manifestations of God, and the world of creation. Although he makes it clear that the underlying one Reality "does not admit multiplicity or division . . ." (*Promulgation* 180) yet, he says, it is this Reality that comprises the inner essence or reality of all created things in varying degrees throughout the worlds of God (see *Some Answered Questions* 294–96).

Bahá'u'lláh's descriptions of Reality/reality are couched in layers of spiritual symbolism whose meanings are often veiled. To find Bahá'u'lláh's descriptions of the grades of reality as they exist in these "three worlds," the reader is directed to the mystical treatise *The Seven Valleys*, which takes the seeker of truth (reality) on an inner spiritual journey through the degrees of realities, or, as they are also called, the "grades of self" or the "stages of the soul."

In *Some Answered Questions*, 'Abdu'l-Bahá provides the most accessible explanations about these three worlds and the realities they encompass. He tells us that the first world, the world of God, is beyond verbal description, "It is invisible, incomprehensible, inaccessible, a pure essence which cannot be described . . ." (146). It is a world where time, space, and matter are nonexistent, where reality is one eternal Reality. He also makes it clear that this Reality is not a synonym for God but pertains to the Reality that describes the world of God. God, as pure preexistent Essence, is a unique Reality, utterly beyond words or any ideation. Thus, it cannot be God's Reality or Essence that becomes the reality or essence in created things, otherwise we would have a pantheistic universe. "Though the 'First Mind' is without beginning, it does not

1. Whenever this article refers to Reality as it applies to God or the divine state, the word will be capitalized to distinguish it from the relative or conditioned reality of material existence.

become a sharer in the preexistence of God, for the existence of the universal reality in relation to the existence of God is nothingness . . ." ('Abdu'l-Bahá, *Some Answered Questions* 203). Rather, this Reality has been willed by God as the underlying Reality defining the universe and all God has created (see *Some Answered Questions* 203; 'Abdu'l-Bahá, *Selections* 46–51; and 'Abdu'l-Bahá, *Promulgation* 425 for variations on this idea).

The second world, the world of the Manifestations of God, is where the Reality of the divine world begins its first transformation from sheer abstraction and essence into the world of BEING, the world where God, through his holy Spirit mirrors his divine qualities and attributes in the persons of the holy Manifestations. This world connects God's Spirit with our spirit, and the only glimpse, the only knowledge we have of this world is attained through the pure and unadulterated words of the holy Revelators.

The only reality we can observe first hand is that of the third world, the world of creation, the world where energy materializes and manifests itself as our more familiar physical realities. Here, both objective and subjective reality is filtered through perceptions relative to each other and conditioned by limitations of which we are seldom aware. Although this world is subject to change and transformation, its underlying reality is not. This "oneness" is the universal organization that operates under one universal law and interconnects all matter (atoms) ('Abdu'l-Bahá, *Promulgation* 80, 350).

Comparing the Bahá'í and Scientific Arguments

How does the Bahá'í model of phenomenal reality compare with the current scientific model? No previous Revelation has had available to it the scientific data that the Bahá'í Faith has been able to incorporate into its literature regarding a variety of subjects never previously addressed by any religion. The older religions had no reason to speculate about universal origins and the evolution of species, for example, since the vocabularies for these ideas did not yet exist.

As for an explanation of universal genesis, science is still in the process of trying to validate its theoretical model of "The Big Bang." John Boslough, in his book *Masters of Time*, makes a convincing case that "The Big Bang" theory has been falling apart for some time as new evidence consistently contradicts its basic assumptions, including the puzzling "smoothness" discovered in the cosmic background radiation. Obviously, simulating the initial conditions necessary to validate the Big Bang can never be reconstructed or tested. The Bahá'í cosmogony is expressed best by the word 'Abdu'l-Bahá most often used: *transformational*. He says, "The universe has never had a beginning. From the point of view of essence it transforms itself. God is eternal in essence and in time" (*Divine Philosophy* 107). This conceptualization recognizes a universe without beginning or ending, but one that is constantly in a process of being created.

Both Bahá'u'lláh and 'Abdu'l-Bahá repeatedly inform us that a creator must

have a creation, as the word implies, and, as God the Creator is eternal with no beginning and no end, so must be his creation. Bahá'u'lláh states in *Gleanings*, "The process of His creation hath had no beginning, and can have no end" (61). Both also make clear in any number of passages that creation, as a whole and in its constituents, undergoes changes and transformations, births and deaths, so that trying to gauge its age with the tools we have at hand will be an endless Sisyphean endeavor.

To understand how creation can exist as an eternal creation, we must understand first the differences and relationships among preexistence, existence, and nonexistence as they are best explained by 'Abdu'l-Bahá in *Some Answered Questions*. When capitalized, Preexistence refers to the unknown condition of God or the divine state (293). Otherwise, 'Abdu'l-Bahá says there are two ways of talking about preexistence (lowercase): first, as essential preexistence, or "existence which is not preceded by a cause," and second, as the preexistence of time, both of which describe two kinds of phenomena (280). We can interpret the "pre-existence of time" as being the same as eternity. But the phenomena of time (relative time) all have beginnings and endings, existences and nonexistences. To explain phenomenal existence and nonexistence and their relationship to that which is preexistent, 'Abdu'l-Bahá continues:

... existence and non-existence are both relative. If it be said that such a thing came into existence from non-existence, this does not refer to absolute non-existence, but means that its former condition in relation to its actual condition was nothingness. For absolute nothingness cannot find existence, as it has not the capacity of existence. . . .
 . . . The Creator always had a creation. . . . The names and attributes of God require the existence of beings, and the Eternal Bounty does not cease. If it were to, it would be contrary to the perfections of God. (281)

If we ponder this startling and new approach to universal genesis, we must conclude that there was never a time when creation was not; there was no pre-existent void, no vacuum, no pinpoint of pure energy waiting to explode, nor a primordial universe of aimless, free-floating energy pervading all space waiting to manifest itself as matter. Existence, or creation, is from the beginning that has no beginning. 'Abdu'l-Bahá informs us that to deny this truth is to deny God (*Promulgation* 463).

The Reality underlying the universe is changeless, but the phenomena it eternally creates are diverse and everchanging, an endless display of creative possibilities, some of which may become manifested at any given time, or have had existences in the past, or which may exist in the future. Bahá'u'lláh wrote, "That which hath been in existence had existed before, but not in the form thou seest today. . . . Verily, the Word of God is the Cause which hath preceded the contingent world—a world which is adorned with the splendours of the Ancient of Days, yet is being renewed and regenerated at all times" (*Tablets* 140–41).

As Land and others are beginning to suggest, neither the First nor Second Law of Thermodynamics is holding up too well these days as they apply to the cosmos at large and to subatomic phenomena. Creation as an on-going process does not mean that matter has learned how to create itself with its own realities. Without resorting to an original blueprint conceived by an awesome Intelligence, there does not seem to be any other satisfactory way to explain how intelligence seemed to have created itself. Although many scientists accept the idea of some kind of Ultimate Intelligence or Reality as a First Cause, it remains an abstraction so remote that neither physics nor mathematics can be applied to validate or falsify it, even though Sir James Jeans mused that God must be a mathematician (*Quantum Questions* 128).

In 1920, 'Abdu'l-Bahá wrote to Dr. Auguste Forel, the famous Swiss scientist, "Similarly the wise and reflecting soul will know of a certainty that this infinite universe with all its grandeur and perfect order could not have come to exist by itself" (*Auguste Forel* 19). Earlier in the first decade of this century, 'Abdu'l-Bahá voiced this same admonition to early Bahá'í pilgrims, "... then can this great universe, which is endless, be self-created and come into existence from the action of matter and the elements? How self-evidently wrong is such a supposition!" (*Some Answered Questions* 6). Within this same context 'Abdu'l-Bahá on a number of occasions offered three different explanations for the formation of matter: accidental, involuntary (or compulsory), and voluntary. Only the last explanation, he said, was tenable—the composition of elements effected by an unseen force. It is "the Ancient Power, [which] causeth these elements to come together, every formation giving rise to a distinct being" (quoted in *Auguste Forel* 17).

'Abdu'l-Bahá also reminded us that the key to understanding our world lies in our ability to separate "that which is reality from that which is not" and that sense perception, and even reason, provide only some of the tools (*Promulgation* 21). Even scientists admit their limitations. In the book *Quantum Questions*, which contains essays and interviews with the founders of quantum mechanics, Max Planck is quoted as saying:

As Einstein has said, you could not be a scientist if you did not know that the external world existed in reality, but that knowledge is not gained by any process of reasoning. It is direct perception and, therefore, in its nature akin to what we call Faith. It is a metaphysical belief. Now that is something which the skeptic questions in regard to religion, but it is the same in science. (154)

Further on, Sir Arthur Eddington, always philosophically articulate, observed:

Similarly, I assert that the nature of all reality is spiritual, not material, nor a dualism of matter and spirit. . . . It is probably true that the recent changes of scientific thought remove some of the obstacles to a reconciliation of religion with science, but

this must be carefully distinguished from any proposal to base religion on scientific discovery. . . . We have learnt that the exploration of the external world by the methods of physical science leads not to a concrete reality but to a shadow world of symbols, beneath which those methods are unadapted for penetrating. . . . To understand the phenomena of the physical world, it is necessary to know the equations which the symbols obey but not the nature of that which is being symbolized. (180–82)

These are not statements pragmatists or empiricists would accept or perhaps understand; nor are they statements students will find in their physics textbooks. Wittgenstein, however, made this way of looking at reality the cornerstone of his iconoclastic philosophy—that it is only the discourse of language with its agreed-upon rules we all learn which gives meaning and order to the outside world.

Many of ‘Abdu’l-Bahá’s talks in America stressed the importance and station of science in its quest to uncover the true nature of reality. “In fact, science may be likened to a mirror wherein the infinite forms and images of existing things are revealed and reflected” (*Promulgation* 50). In the same talk, he stated that science was another pathway to God (*Promulgation* 49). Reality, like divine knowledge or truth, exists as a unity, and “Unity is the expression of the loving power of God and reflects the reality of Divinity. . . . Throughout the universe the divine power is effulgent in endless images and pictures” (*Promulgation* 14).

The Journey of the Atom Explanation

To bring together how the unity of Reality/reality and the power of the divine Will work in the world of relativities, ‘Abdu’l-Bahá recast Aristotle’s Great Chain of Being in terms of Bahá’u’lláh’s Revelation. This explanation was repeated over and over; in fact, there is no other Bahá’í philosophic teaching that is as ubiquitous as the Kingdoms of God. ‘Abdu’l-Bahá included it in one form or another in almost every talk he gave, regardless of topic. His insistent expounding of this very broad and inclusive conceptualization should send a clear signal to all Bahá’ís that ‘Abdu’l-Bahá must have considered it the foundation upon which Bahá’í philosophy is built and understood. Unfortunately, this teaching has been relegated to classes for teaching children simple demonstrations of the life sciences. As a result, Bahá’ís grow up to consider this repetitious explanation one of the more elementary teachings. Nothing could be further from the truth.

In ‘Abdu’l-Bahá’s hands, the Kingdoms of God express the gradations of real existence as they manifest the inner realities of spirit and the outer realities of form and structure. The agent responsible for this marvel is the lowly but eternal atom. Repeatedly, ‘Abdu’l-Bahá takes us on “the journey of the atom.” Through this journey we are shown the various stages of conditioned reality and how God’s emanating Spirit animates all the hierarchies of creation culminating in the human spirit or rational soul. It is one of the first conceptualizations that

'Abdu'l-Bahá explains in his letter to Dr. Forel: "In like manner the mind proveth the existence of an unseen Reality that embraceth all beings, and that existeth and revealeth itself in all stages, the essence whereof is beyond the grasp of the mind" (*Auguste Forel* 9–10).

God's Divine Energy—Spirit as the Universal Template

We now know that the universal primordial energy is the unified one reality that pervades all things. Whether we think of it as energy—matter exchanges at extraordinary temperatures, or as waves travelling from low to ultra-high frequencies, or as the cellular energy that gives life to our bodies and minds, it is the same energy throughout, appearing in different guises. So far, physics has no explanation as to its origin. The Bahá'í writings tell us its source is divine; from God's world it comes, and to God's world it returns, an eternal force empowered by God's Will. It is only one step further to suggest that this divine energy is the same as the divine Spirit of God revealing itself as the eternal creational emanation that gives life to our universe. It is both constant and in motion, creating the patterns for all phenomena first as the invisible essence of all matter (the energy within atoms) and then as the power and wisdom behind the formation and organization of all entities. This Spirit—Energy obviously cannot be mindless, since to call it so would be the same as to call God mindless. We occupy not only an intelligible universe but also an intelligent one:

Creation is the expression of motion. Motion is life. A moving object is a living object, whereas that which is motionless and inert is as dead. All created forms are progressive in their planes, or kingdoms of existence, under the stimulus of the power or spirit of life. The universal energy is dynamic. Nothing is stationary in the material world of outer phenomena or in the inner world of intellect and consciousness. ('Abdu'l-Bahá, *Promulgation* 140)

The greatest power in the realm and range of human existence is spirit—the divine breath which animates and pervades all things. It is manifested throughout creation in different degrees or kingdoms. ('Abdu'l-Bahá, *Promulgation* 58)

... and the explanation of true pantheistic statement and principle is that the phenomena of the universe find realization through the one power animating and dominating all things, and all things are but manifestations of its energy and bounty. ('Abdu'l-Bahá, *Promulgation* 286)

The Mindful Energy-Encoded Matter Argument

For those of us who believe in an all-powerful omniscient God, it is an evident conclusion that God's divine intelligence is behind and responsible for the intelligence we find in creation, reflections of the reality of his divine Spirit. It does not require any "leap of faith" to conclude that matter knows what to do and what to be because particulate energy has been preprogrammed with all the divine laws it will ever need to carry out both its function and its purpose in

infinite expressions and forms. This internal encoding is God's universal template for all existences. "The elements and lower organisms are synchronized in the great plan of life" ('Abdu'l-Bahá, *Promulgation* 350).

'Abdu'l-Bahá states:

It is obvious that all created things are connected one to another by a linkage complete and perfect, even, for example, as are the members of the human body. . . .

Likewise, look into this endless universe: a universal power inevitably existeth, which encompasseth all, directing and regulating all the parts of this infinite creation; and were it not for this Director, this Co-ordinator, the universe would be flawed and deficient. It would be even as a madman; whereas ye can see that this endless creation carrieth out its functions in perfect order, every separate part of it performing its own task with complete reliability, nor is there any flaw to be found in all its workings. Thus it is clear that a Universal Power existeth, directing and regulating this infinite universe. Every rational mind can grasp this fact. (*Selections* 48–49)

The essence or reality of matter as mindful energy can be read as both a physical and a spiritual explanation. Universal divine laws are the same as science's natural laws; science uses one terminology and religion uses another, but both are speaking about the same thing. For example, the physicist's quest for the one law which will unify the four forces that hold together our universe can be seen as the equivalent of the Bahá'í assertion that the spiritual law underlying all other laws and holding them together is God's Love.

Love is the most great law that ruleth this mighty and heavenly cycle, the unique power that bindeth together the divers elements of this material world, the supreme magnetic force that directeth the movements of the spheres in the celestial realms. Love revealeth with unfailling and limitless power the mysteries latent in the universe. ('Abdu'l-Bahá, *Selections* 27)

In an impassioned speech delivered to the Theosophical Society in New York in 1912, 'Abdu'l-Bahá explained that

the Divine Spirit is penetrating from eternity to eternity, for it is the bounty of God, and the bounty of God is eternal. Can you conceive of limitation of the divine power in atomic verities or cessation of the divine bounty in existing organisms? Could you conceive the power now manifest in this glass in cohesion of its atoms becoming nonexistent? (*Promulgation* 159)

The idea of intelligence at work throughout the universe is not new. In Western philosophy Plato explained human conscious intelligence as our "remembrance" of abstract eternal ideas or forms that represent truth or reality. Some two-thousand years later, Gottfried Leibniz (d. 1716), both scientist and philosopher, proposed that all phenomena were made up of what might be described as a kind of conscious wave-particle ether called "monads" that was

their essence. Since their origin was from the mind of God they also accounted for what Leibniz called the preestablished universal harmony as they carried out God's plan for all creation. In light of the above Bahá'í quotations, Leibniz appeared to be on the right track.

In the sciences, there are a number of physicists and astronomers who are also intrigued by the idea of consciousness and intelligence in particulate energy. The Russian cosmologist Andrei Linde proposes that energy-matter carries "impressed messages." Sidney Coleman, a theoretical physicist at Harvard famous for his work in "wormhole universes," in musing over the fact that in the beginning energy and matter seemed to be "prearranged," suggests that perhaps it is precognition on their part and that universes may be created by other intelligent universes. Similar ideas of the connection between consciousness and matter are held by some of the most distinguished physicists of our time, among them John A. Wheeler, Jack Sarfatti, David Bohm, and the Nobel prize recipient, Eugene Wigner. The reader is referred to Michael Talbot's book *Mysticism and the New Physics*, where this subject is treated at length.

But it was the original EPR experiment (Einstein, Podolsky, and Rosen) and the "two-slit" experiments with paired photons done in the hope of actually seeing light in its dual nature as waves and as particles, that changed the traditional way scientists looked at the reality of matter. Einstein himself ridiculed the notion that photons were demonstrating "awareness." He attributed the unusual outcome to have been skewed because the light energy observed was travelling only a short distance. He said he would wait until the same results were duplicated over a much longer distance. Unfortunately, he did not live to witness the results of this latter successful experiment since replicated any number of times (*God and the New Physics* 103-14).

A crude analogy of the two-slit experiments using humans and automobiles instead of photons or electrons is offered. Imagine that a cosmic Colossus sees us on our planet much the way physicists see photons and electrons. Let us further imagine that there are twins who want to go to a rock concert but are driving separate cars to get there, along with thousands and thousands of other teenagers also arriving in their cars. They swarm like a wave through the gate leading to the auditorium, including the twins whom the Colossus is tracking. Here they separate—one goes to the right and the other to the left. Their routes take them through two opposite tunnels where the Colossus loses sight of them and all the other automobiles. When the twins emerge from opposite sides, they park in adjacent parking spaces. The other cars also arrive and park in orderly fashion.

How does the cosmic Colossus react to his observation? He first might wonder if his observation of the "twin cars"—indeed, all the cars—affected their behavior. He saw them only as one steady continuous stream. When he tried to track the particular "twin cars" separately, they disappeared inside opposite tunnels and then reappeared to come to rest side by side. He could see

where each automobile was, but he could not determine how fast they were going. He would find this behavior so strange he might then consider the possibility that there was some kind of "knowingness" on the part of the cars, an uncanny awareness they shared since they all seemed to know where the others were going and thus avoid colliding with each other in one huge jumble-heap at the end of their destinations. Using humans driving automobiles in the above analogy to substitute for photons obviously biases the reader in favor of the ideas expressed above, but it is given in the hope it will aid in understanding this seminal experiment.

For a clearer example of how intelligence can be encoded in life-forms in varying degrees without their hosts consciously controlling and directing it, we need only to look at how the DNA double helix works. From the lowly virus that shares 45% of its DNA with us to the chimpanzee which shares 99%, it has become more and more evident that all life on Earth arose from one parent genome that has related us all, as 'Abdu'l-Bahá also suggests (see *Some Answered Questions* 181)

The discovery of the DNA helix and its messenger RNA in the 1950s revealed that the human genome was contained within the nucleus of every cell. Some three-billion pairs of chemical bases in each double helix some eight feet long spell out messages inside us from birth to death and govern who and what we are. Even if all the DNA sequences are eventually deciphered, no one will really understand how this miraculous programing got programed in the first place. It can hardly be called a random or accidental event because accidents do not become "the general case." Chance events, by their very definition, contain no "inner integral drives" that direct them to coherence or purposeful function. Nor are accidental events evolutionary because they exist as separate, isolated temporal states. But this genetic marvel intelligently, even conscientiously, governs the evolutions of each and every living organism on our planet. In each case, the unfolding of the genetic code is triggered over time by certain chemical stimuli when the right condition or the right environment exists, revealing its function and its purpose.

How can it know what to do and when to do it, and more important, when to stop? These DNA-RNA processes cannot all be reduced to mindless chemical reactions that were perfected over time by countless repetitions. If this were the case, they would have to "know" what combinations and sequences were "correct" (successful) and "remember" them. In addition, each cell contains not only the blueprint for its own identity, function, and purpose but also the entire coding for the total organism. Holograms work in the same way, as do computer-generated fractals in Chaos Theory. The DNA helix exhibits characteristics of self-survival, self-organization, self-maintenance, self-replication, and self-protection, all directed towards enhancing the organism's future states. In higher forms of life, all of the above attributes work as instinct,

acts that the organism performs involuntarily in its own interests. Instinct is a good example of how complex behavior patterns can be intelligently encoded within us but be outside our conscious control or knowledge.

There is also recent evidence that cells may actually communicate with each other in an exchange of information not previously suspected. These almost invisible cell components not only appear to be smart in their own right but also comprise the material in our brains that in turn makes us smart. I, for one, am amazed that without possessing any conscious knowledge whatsoever, these organic cell "bits" can put together whatever is necessary to create the human mind and all that it represents without knowing what a mind is, having none of its own. And we, the supreme recipients of this created mind, cannot explain it either.

The miracle of the human genome is that it can decipher itself by means of an internal intelligent program far superior and more complex than any kind of computerized "artificial intelligence" that we with "educated intelligence" can devise. The biological sciences continue to tell us that nature serendipitously spawned this miracle, which then evolved to comprise every order and niche in the phyla of life, eventuating in the emergence of a self-aware reasoning species. *Nature* is a convenient catch-all word difficult to define. The implication of those sciences dealing with "natural" laws is that nature is an intelligent entity capable of conscious and creative thought and acts; that nature, as our original mother, has somehow endowed the human species with attributes she herself does not possess. "Should any one suppose that man is but a part of the world of nature, and he being endowed with these perfections, these being but manifestations of the world of nature, and thus nature is the originator of these perfections and is not deprived therefrom, to him we make reply and say: the part dependeth upon the whole; the part cannot possess perfections whereof the whole is deprived" ('Abdu'l-Bahá, *Auguste Forel* 12). 'Abdu'l-Bahá, in the opening chapter of *Some Answered Questions*, explains the condition, organization, and limitations of nature. The obvious answer to this question is that nature is not the whole, so we must look elsewhere for it. 'Abdu'l-Bahá advised us that nature is both imperfect and incomplete (*Promulgation* 309).

The Final Argument

What I am proposing should by now be clear: particulate matter in and of itself is neither consciously intelligent nor self-aware, but has been consciously encoded with intelligence through the power and bounty of the ultimate supreme Intelligence, God, in various degrees throughout the Kingdoms. Disorder, as Chaos Theory also cautiously suggests, seems to have within it the seeds of its own reordering and structure, its own unique "reality," realized through a kind of converse symmetry that everything in the universe seems to possess, ourselves included, as a kind of yin-yang polarity. Order and disorder are two sides of the same process, the same reality.

God, as the Uncaused Cause, is the ultimate Intelligence and Progenitor of all things, imbuing every atom with a unique encoded intelligence that directs both its function and its purpose when it selectively combines with other atoms. Only by this means can matter "create its own reality." The idea of entelechy has recently reemerged, if somewhat tentatively, in scholarly circles. Their next question should be to ask whether a "what" or a "who" is responsible for its design.

Western philosophic logic has divided all things into Aristotelian "either-or" discourses. Either something is, or it is not. Either a true reality exists, or none exists. This word-play has divided the "new physics" practitioners into two camps. Either relativity or quantum physics describes our universe "correctly." It seems to me that the Bahá'í teachings allow for both to co-exist and both to be applicable. Just as Newtonian or classical physics can be applied successfully to solar systems, relativity physics seem to be working well to explain our visible physical universe-at-large, while quantum physics peers into the hidden inner realities of things. For example, the trained psychologist uses a completely different set of criteria and tests for examining our "inner self" than what a medical doctor uses for examining our anatomies. We would think it peculiar if someone suggested that only one set of criteria could be true.

Summation

The Bahá'í model offers the world both a spiritual and a physical picture of an interconnected and interdependent universe that seems to be communicating with itself on all levels. To be sure, there are still many hidden connections between energy and matter waiting to be found. 'Abdu'l-Bahá observed that the universe had been created for our education and that "we must learn how to read the universe; it is an open book" (*Bahá'í World* 5: 667).

The reason we cannot or will never be able to define or describe the underlying reality or essence of all things is that it lies hidden in God's world and is known only to God. As a spiritual abstraction, it will remain an eternal mystery. As subject, it finds its object in the world of the Manifestations of God. The hidden reality mirrors itself as divine attributes in the personages of the holy Revelators. Our only clue to understanding anything at all about essential Reality is through their unadulterated teachings.

In the world of creation, this Reality manifests itself as the intelligent essence of every object in the universe, even though it resists our dissection of it. Since there is little likelihood that we will ever be able to define or describe it, we will never be able to create it artificially or clone it, as 'Abdu'l-Bahá also confirmed.

What humanity defines as reality consists both of the inner subjective realities we create within our own heads and the outer or objective realities we define as our physical and social environments. These realities can be anything we want them to be or agree to; they belong to the "world of appearances"; a world of "shadows and symbols," "silhouettes in the cave," and, in

Bahá'u'lláh's words, "... a show, vain and empty, a mere nothing, bearing the semblance of reality" (*Gleanings* 328). At the same time we hope that some of our descriptions of them fit the criteria for accurate truth-statements.

As for the most undefinable Reality of all, the holy Revelators left us the key for unlocking truth, thereby allowing us to catch a glimpse of what essential Reality might be. It is attainable only by means of a lone inner spiritual quest to find the path to God. Taking this mystical journey is completely voluntary on the part of the individual. In the strangest twist of all, only by relinquishing all personal control and attachments to what we think are our inner and outer realities can we ever hope to find our way or make any real progress. True Reality is the one we have not invented; rather, *it* has created and defined *us*. This spiritual path points simultaneously to two directions; one towards the Reality of the divine and the other back to the reality of the inner self which mirrors that divine Reality.

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