The Active Force and That Which Is Its Recipient: A Bahá'í View of Creativity

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> We often think, naively, that missing data are the primary impediments to intellectual progress—just find the right facts and all problems will dissipate. But barriers are often deeper and more abstract in thought. We must have access to the right metaphor, not only to the requisite information. Revolutionary thinkers are not, primarily, gatherers of facts, but weavers of new intellectual structures.
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> —Stephen Jay Gould, *The Flamingo's Smile*

Abstract
Applying a framework for understanding the creative process generally, this essay explores the notion that the universe is coded to be creative. The view is offered that the universal system exists in a perpetually poised, generative, dynamic state and that creativity is the fundamental reality of the universe. Utilizing the concept of "covenant" as a metaphor for the governance structure of the universal generative dynamic, the author investigates the unique role of consciousness in the creative process.

Resumé
À l'aide d'un cadre permettant de comprendre le processus de création en général, l'auteur explore dans cet essai la notion que l'univers est codé pour être créatif. Il offre une perspective selon laquelle le système universel existe dans un état d'équilibrage perpétuel, générateur et dynamique, et que la créativité est la réalité fondamentale de l'univers. Utilisant le concept de l'« alliance » comme métaphore pour illustrer la structure de gouvernance de la dynamique génératrice universelle, l'auteur explore le rôle particulier que joue la conscience dans le processus de créativité.

Resumen
Aplicando un marco para comprender el proceso creativo de manera general, este ensayo explora la noción de que el universo está codificado para ser creativo. Se ofrece la visión que el sistema universal existe en un estado perpetuamente listo, generador y dinámico y que la creatividad es la realidad fundamental del universo. Utilizando el concepto de "alianza" como una metáfora para la estructura gobernadora de la dinámica generadora universal, el autor investiga el rol único de la consciencia en el proceso creativo.

Lawful Order, Uncertainty, and the Dynamics of Creation

This exploration of creativity begins with a perspective on fundamental reality derived from study of the Bahá'í Writings. At first, the Bahá'í view seems somewhat paradoxical. Reality has both a quality of "sameness" and a quality of "relativity," which means things can look very different depending on how one is looking:

> earthly and heavenly, material and spiritual, accidental and essential, particular and universal, foundation and structure, appearance and reality and the essence of all things, both inwardly and outwardly—all of these are connected one with another and are interrelated in such a manner that we find that drops are patterned after seas, and that atoms are structured after suns in proportion to their capacities and potentialities. For particulars in relation to what is below them are universals, and what are great universals…are in fact particulars in relation to the realities and beings which are superior to them. Universal and particular are in reality incidental and relative considerations. ('Abdu'l-Bahá, "Tablet of the Universe")

All elements of reality are similar and radically different according to how they are perceived and connected to one another. Scientists believe that the causal laws that govern the universal system are really quite simple. However, the dynamics involved in the operation of these laws may be quite complicated, even for relatively simple situations. Dynamics that are easily understood and predicted when two objects interact—such as one planet orbiting one star—become excruciatingly difficult when more objects are introduced. The world we observe is full of variability, which arises out of the operation of simple invariable laws (Stewart).

The variability of things is due to the vast array of contingent events which interact many times with slightly different initial conditions, resulting in outcomes which differ, at least slightly, each time (Gleick; Briggs and Peat; Buchanan). It is the interaction of myriad elements and forces within a universal, ordered association that defines life and human beings, not a particular planetary matrix or physical prototype. As 'Abdu'l-Bahá suggests:

> every single thing has an effect and influence upon every other, either independently or through a causal chain. In sum, the completeness of each and every thing—that is, the completeness which you now see in man, or in other beings, with regard to their parts, members, and powers—arises from their component elements, their quantities and measures, the manner of their combination, and their mutual action, interaction, and influence. When all these are brought together, then man comes into existence.
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> As the completeness of man stems entirely from the component elements, their measure, their manner of combination, and the mutual action and interaction of other beings—and since man was produced ten or a hundred thousand years ago from the same earthly elements, with the same measures and quantities, the same manner of composition and combination, and the same

> interactions with other beings—it follows that man was exactly the same then as exists now. (*Some Answered Questions* 46:6–7)

A more interesting question is what grounding laws and organizational principles govern the dynamics of these interacting forces. As a material entity, the universal system is defined by three primary characteristics: the composition of elements, motion, and causality. The reality of composition and motion has the inevitable consequence that all material entities are phenomenal, that is, temporary. "Absolute repose does not exist in nature" and "the whole physical creation is perishable" ('Abdu'l-Bahá, *Paris Talks* 88, 90). The reality of causality has the inevitable consequence that some form of inherently necessary relationships exist within the universal system. As Bahá'u'lláh makes clear: "All that is created, however, is preceded by a cause." (*Gleanings* 82:10). Even at the subatomic level, where quantum events are often said to be spontaneous and apparently acausal, statistical methods are used very successfully to predict outcomes. This suggests that at all levels of subatomic physics, inherently necessary relationships exist, although the causal mechanisms may not be obvious.[1] In other words, all of phenomenal reality is temporary and constantly subject to change, and anything can happen within well-defined statistical laws.

From this basic understanding, let's consider the possibility that the universal system is essentially coded to be creative. We can imagine a universal system awash with untold numbers of interactions, subject to a similarly vast array of changing conditions, acting within an overall causal framework that is coded to maintain a dynamic equilibrium among all these factors. Wave behavior is perhaps a useful metaphor. Consider a mostly calm ocean, with only ripples of wave action. This expresses one state of such equilibrium. A larger, slowly rolling swell wave expresses another state. The towering waves favored by surfers manifest yet another state of evolving equilibrium. Hurricane-driven waves and tsunamis express other, catastrophic states of evolving equilibrium. The "center of balance" for a particular wave is at a very different physical point in each case, and each expresses dramatically different energy levels. Yet all of these wave forms, although completely unpredictable, are restrained within ranges of lawful possibilities, and the general patterns of wave behavior can be described within knowable patterns of statistical probability distributions. Thus, every system is in some state of evolving equilibrium, ranging from states that are internally very stable and change only through intrusive external forces to those that are much more dynamic.

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1 I am grateful for some stimulating thoughts about causality provided by Ian Kluge on one of his early Bahá'í philosophy webpages, which seems to no longer exist.

The dynamics of this sort of equilibrium represent a multitude of individual elements all following their own simple rules of obedience to underlying laws of causality. A wave, in whatever manifestation, is essentially a statistically describable set of evolving local interactions within a global framework. A wave is always in a poised state, a constantly evolving state of interpenetrating forces or actions and reactions (Bak). As Per Bak writes:

> complex behavior in nature reflects the tendency of large systems with many components to evolve into a poised, "critical" state, way out of balance, where minor disturbances may lead to events, called avalanches, of all sizes. Most of the changes take place through catastrophic events rather than by following a smooth gradual path. The evolution to this very delicate state occurs without design from any outside agent. The state is established solely because of the dynamical interactions among individual elements of the system: the critical state is self-organized. Self-organized criticality is so far the only known general mechanism to generate complexity. (1–2)

Motion, transformation, and change are continual in the world of being, a constantly evolving equilibrium within fixed limits.

This kind of motion is the fundamental characteristic of all phenomena. For example, physicists now describe electron orbits mathematically as a kind of wave constrained within the force generated by the electric field of the atom (Ranjbar). At the most fundamental quantum levels of existence, the images produced by probability equations to describe these orbits appear wavelike. For example, a one-dimensional motion can be modeled as a guitar string, a two-dimensional motion as the vibrating surface of a drum, and a three-dimensional motion as the surface of a balloon. Each of these models is essentially a wave restrained within certain parameters (Unverricht).

Interestingly, 'Abdu'l-Bahá uses the metaphor of a "restrained wave" to describe the orbits of heavenly bodies: "these great orbits and circuits fall within subtle, fluid, clear, liquid, undulating and vibrating bodies, and... the heavens are a restrained wave because a void is impossible and inconceivable" ("Tablet of the Universe"). Small ripples in a pond or puddle and monstrous tsunamis speeding across an ocean follow the same laws. The apparent divergence and complexity of types results from the same simple underlying model. The image of wave functions is one useful way to envision a fluid, but restrained, description of what is "real."

Now let's consider another metaphor to take the next step in my argument. A single ryegrass plant may have over 10,000 kilometers of roots, with billions of microscopic root hairs (Raven, Evert, and Eichhorn 679). In such

an environment, where does the plant end? At the visual macroscopic level, it is impossible to tell. The webbing of infinitely tiny roots in mature grasses is impossible to resolve and differentiate. At the microscopic level, we have even more difficulty. The flux of gasses and chemical interactions in the vicinity of roots is essentially impossible to define completely. So frenzied are these interactions at the microscopic level that it makes it difficult to say precisely where is the "edge" of the plant. While we may have an "obvious" common sense response to this question, careful thought reveals that the "edge" of the plant is ambiguous, except insofar as we arbitrarily define a boundary.

Ultimately, however, any boundary we define necessarily ignores some aspects of the interrelationship of the plant with its neighbors and the environment. We must recognize that the "singleness" of the plant and its "unity" with the wider system are profoundly interwoven. Depending on how we organize our perception of the reality of the plant, the diversity of single plants provides a substitute for the unity of the system, and vice versa, depending on our perceptual focus. The "edge" of the plant is essentially a matter of the perceptual lens we apply. The grass plant we observe with the naked eye exists as a continuum between its unseen edge in the atmosphere and its unseen edge below ground. This continuum—the plant—reflects the current state of equilibrium among the myriad interactions to which the plant is subject.

With this image in mind, let me suggest that the universal system is characterized by a basic structure of dynamic symmetry, an elegant continuum of relationships uniting seeming opposites. The sort of symmetry I'm suggesting does not describe mirror images but rather a relationship where opposites are transformed into each other. Einstein's famous insight that energy equals mass is one such symmetry, but other such symmetries are legion. They are, in fact, at the foundation of the universal system.

Symmetry, Reciprocity, and a "Similitude of Opposites"

> The world of existence came into being through the heat generated from the interaction between the active force and that which is its recipient. These two are the same, yet they are different. (Bahá'u'lláh, *Tablets* 141)

This is perhaps Bahá'u'lláh's most significant description of the essential nature of things. Clearly, He indicates that there is a basic symmetry—what might be termed a "similitude of opposites"—that defines the most basic creative process and relationships of the universe. This simple, elegant statement captures how diverse phenomena merge into one another, providing the basic engine of creativity.

In the passage cited above, where does the "active force" end and the "recipient" begin? Where is the bifurcation between the two? Simply

put, there is no way to describe such a division. They are essentially one and the same. Just as the plant merges into the environment at the subatomic level, leaving no clear line of bifurcation, the universal system is structured around symmetrical relations where one "pole" of a relationship transforms into another "pole." Such relationships are infinite, and these webs of relationships have no edges within the universal system.

Let us consider another thought experiment. Imagine a whirlpool vortex swirling within the course of a rapidly flowing stream. Where does the vortex become the stream or the stream become the vortex? Is there a clear point of demarcation, or does it depend on whether one is focusing on the "reality" of the vortex or the "reality" of the stream? Even if one focuses on the reality of the vortex, for instance, one will still be left with a purely arbitrary definition of where the vortex becomes the stream, and vice versa. At the subatomic level, the frenetic interactions are just as difficult to capture as they were when we tried to find the edge of the plant. Both the stream and the vortex might have a relatively consistent autonomy and stability—a seamless order uniting these dissimilar patterns of order. As the whirlpool and the stream transform into one another without a perceptible edge or bifurcation, we may imagine that "[t]hese two are the same, yet they are different" (Bahá'u'lláh, *Tablets* 141).

This similitude of opposites conserves the essence of each opposite pole in a relationship. Energy is matter, and vice versa. This conservation of essence describes the fundamental principle of reciprocity upon which the universal system depends. Obviously, we can adopt different perceptual lenses appropriate to different specified purposes that enable us to simplify the universal wholeness and to treat aspects of it, at least momentarily, and for certain limited purposes, as single individuals with a seeming autonomy, stability, and separate existence. Yet we should not fall into the trap of believing that "reality" is therefore fragmentary and made up of "things" that are separate and absolutely distinct from other "things."

Reciprocity is an immensely powerful yet beautifully simple concept. 'Abdu'l-Bahá tells us that

> the greatest relationship that bindeth the world of being together lieth in the range of created things themselves, and that co-operation, mutual aid and reciprocity are essential characteristics in the unified body of the world of being, inasmuch as all created things are closely related together and each is influenced by the other or deriveth benefit therefrom, either directly or indirectly. (qtd. in *Ḥuqúqu'lláh* 7–9)

I suggest that reciprocity offers a simple and elegant term to describe the fundamental nature of relationships in the universal system. Using another thought experiment, let's explore

evolutionary change in light of the concept of reciprocity. The concept of reciprocity locates the primary, but not exclusive, mechanism of evolutionary change in the relational transactions among organisms and their environment. Relationships that achieve or sustain a consistent pattern of equilibrium remain as sustainable patterns; those that don't, disappear. Reciprocity is not sufficient by itself, however, to explain all types of evolutionary change because there are other non-reciprocal factors that can also play a role in fostering evolutionary change. The increasingly probable idea that it was a sizeable extraterrestrial object slamming into the earth sixty-five million years that extinguished the dinosaurs is one such non-reciprocal factor.[2]

It is also true that the actual relational transactions that make up the fiber of reciprocity are chaotic and non-linear. The webbing of relationships is intricate and embedded within random and chaotic elements. This means that specific relational interactions are so unique and unrepeatable in encompassing a multitude of unique circumstances as to often make the actual relational transactions impossible to trace. It is the nature of reciprocating transactions that they are essentially local, not global or cosmic. Or perhaps it is more accurate to say that the global or cosmic pattern of reciprocity is extremely dependent on unmeasurable variations in local conditions and individual relational transactions.

The reciprocal dynamism we have been exploring is also found in social manifestations. For example, on the one hand, social anthropologists have observed that the nature of social reciprocity in primates is difficult to attribute to any one factor (Frank and Silk). Yet they also have found that equitable relationships tend to be associated with the strongest and most enduring social bonds, and that these mechanisms enhance longevity in a variety of cultural settings (Silk et al., "Strong and Consistent Social Bonds").

Organisms adapt to, and are constrained within, natural laws and physical principles. It is not surprising that the most successful life-forms of all time are those enmeshed within the most simple and easily sustainable patterns of reciprocity. Simple bacteria are the most successful life-forms of all time (Gould, "Evolution of Life" 87). If the fossil record clearly demonstrates anything, it is that bacterial life has been sustained from the beginning of life to the present, and with little doubt it will endure until Earth is no more. Bacteria have found ways to be nearly perfectly reciprocal within an astonishingly diverse range of environments.

The universal system supplies opportunities for a vast and unknowable

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2 Yet even here we should keep in mind that on time scales that exceed easy comprehension, such asteroid strikes are part of cosmic-scale patterns of thermodynamic and quantum reciprocity.

number of relational transactions. 'Abdu'l-Bahá indicates that all the elements of the universal system are involved in relational transactions:

> My meaning, instead, is that this endless universe is like the human body, and that all its parts are connected one with another and are linked together in the utmost perfection. That is, in the same way that the parts, members, and organs of the human body are interconnected, and that they mutually assist, reinforce, and influence each other, so too are the parts and members of this endless universe connected with, and spiritually and materially influenced by, one another. (*Some Answered Questions* 69:3)

Thus, each niche of existence potentially has a vast range of possible receptors for what it offers and itself is a possible receptor for untold varieties of activity generated by other units and forces in the creation. According to Bahá'u'lláh, "Every creature hath been endowed with all the potentialities it can carry." (qtd. in Shoghi Effendi, *World Order* 169) Further, he affirms that each creature "will be enabled . . . to reveal the potentialities of its pre-ordained station." (*Gleanings* 124:2). This inherent station in the universal system includes the "capacity and limitations" that it is "empowered to manifest" (*Gleanings* 74:1).

This ability to manifest capacity within certain limitations is the essential "spiritual" essence within all things. Each and every created thing is endowed with the capacity to exercise a particular influence—to express activity within the universal system and to be receptive to the activity of other elements. "The light of the sun becomes apparent in each object according to the capacity of that object. The difference is simply one of degree and receptivity" ('Abdu'l-Bahá, *Promulgation* 14). In a message to the Swiss scientist August Forel, 'Abdu'l-Bahá further describes this interplay of activities and receptivities that is the essential engine of evolution: "every being hath come to exist under numerous influences and continually undergoeth reaction. These influences, too, are formed under the action of still other influences" (*Tablet to August Forel* 18).

Everything in the creation is endowed with distinct capacities and virtues, which form the basis of active-receptive relationships with other elements of the creation. This is the key understanding to explain two quite dissimilar but obvious outcomes of evolution: the persistence and stability of very simple life-forms and the inevitable tendency for increasingly complex life-forms to emerge. The fundamental principle of reciprocity, as the engine of evolution, is well expressed in the reality that some very simple relational transactions can be extremely stable and nearly indestructible. It is also well expressed by the reality that as the number of interactions and possible interactions increases, so does the possible complexity.

The simple mathematics of possible relationships means that complexity will emerge, but it does not necessarily mean that complexity is better in an evolutionary sense. We can think of the universal system as an immense arena of efflorescence, with potentialities flaring out in all directions. It is as if experiments are bursting forth all over the place. In a sense, all this active expression of potential is radically contingent. The experiment may fail. Complexity is no guarantee of success and survival.

Paleontologists point out that configurations of life-forms were actually much more complex at an earlier stage of Earth's history. The Burgess Shale deposits, for instance, provide fossil evidence of an immensely greater variety and creative range of life-form archetypes than anything that has existed since. The maximum diversity of possible anatomical forms was reached very early in life's history (Gould, "Evolution of Life" 87–89). Most of these life-forms became extinct. Thus, one could say that life-form archetype complexity failed. Today we have more species than ever before, and hence, greater species complexity. But these species are restricted to a much smaller number of life-form archetypes. So, while complexity is an inevitable outcome of the evolutionary process, the probability of success is not so much a matter of complexity in and of itself as it is whether the pattern of relational transactions is sustainable. Just for sheer sustainability and evolutionary success as usually defined, simple and unassuming life-forms like bacteria, insects, and parasites are the best bets. More complex life-forms like tigers, which are dependent on very specialized patterns of reciprocity, are much more vulnerable in an evolutionary sense. Only certain kinds of food and habitats will sustain a tiger, but cockroaches will do quite nicely in a vast array of niches, and bacteria can do even better.

Engine of Creation: Wild Efflorescence Governed within the Bounds of Law

On the basis of the discussion so far, I suggest that relational transactions are sustainable when they are harmonized by a "covenant"—my term for a mechanism that enables dynamic, reciprocal equilibrium between activity and receptivity. What might such a mechanism look like? In the following passage, 'Abdu'l-Bahá uses the human body as a metaphor for how all created things are connected:

> 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. Note how all the members and component parts of the human body are connected one to another. In the same way, all the members of this endless universe are linked one to another. The foot and the step, for example, are connected to the ear and the eye; the eye must look

ahead before the step is taken. The ear must hear before the eye will carefully observe. And whatever member of the human body is deficient, produceth a deficiency in the other members. The brain is connected with the heart and stomach, the lungs are connected with all the members. So is it with the other members of the body.

And each one of these members hath its own special function. The mind force—whether we call it pre-existent or contingent—doth direct and co-ordinate all the members of the human body, seeing to it that each part or member duly performeth its own special function. If, however, there be some interruption in the power of the mind, all the members will fail to carry out their essential functions, deficiencies will appear in the body and the functioning of its members, and the power will prove ineffective.

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)

In this passage, 'Abdu'l-Bahá attributes the balanced functioning of the universe to a "mind force" built into the very essence of the universal system, which operates in both a "pre-existent" and a "contingent" manner.

With that in mind, let us consider another way that 'Abdu'l-Bahá describes this mechanism:

> Know that faith is of two kinds. The first is objective faith that is expressed by the outer man, obedience of the limbs and senses. The other faith is subjective, and unconscious obedience to the will of God. There is no doubt that, in the day of a Manifestation such as Christ, all contingent beings possessed subjective faith and had unconscious obedience to His Holiness Christ.
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> For all parts of the creational world are of one whole. Christ the Manifestor reflecting the divine Sun represented the whole. All the parts are subordinate and obedient to the whole. The contingent beings are the branches of the tree of life while the Messenger of God is the root of that tree. The branches, leaves and fruit are dependent for their existence upon the root of the tree

> of life. This condition of unconscious obedience constitutes subjective faith. But the discerning faith that consists of true knowledge of God and the comprehension of divine words, of such faith there is very little in any age. (qtd. in *Bahá'í World Faith* 364)

I take these passages to mean that the fundamental mechanism of obedience built into the structure of the universe has two dimensions. First, there is a pre-existent spiritual/religious dimension termed objective, or discerning, faith, which is conscious, knowing obedience. Secondly, there is a contingent natural dimension termed subjective faith, which is unconscious, unknowing obedience. For the sake of the argument here, let's consider this as being the two sides of a "covenant"—a religious side (Covenant) and a natural side (covenant). Both serve essentially the same integrative function, but the religious Covenant can apply only to beings with the requisite powers of conscious choice, while the natural covenant binds all the elements of the universe together, knowing or unknowingly. 'Abdu'l-Bahá uses the concepts of both pivot and artery to illustrate this connective, centering framework:

> Thus it hath been proven and made evident that these infinite beings in this wondrous universe will discharge their functions properly only when directed and controlled by that Universal Reality, so that order may be established in the world. For example, interaction and co-operation between the constituent parts of the human body are evident and indisputable, yet this does not suffice; an all-unifying agency is necessary that shall direct and control the component parts, so that these through interaction and co-operation may discharge in perfect order their necessary and respective functions . . . .
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> All these interactions therefore are connected with that all-embracing power which is their pivot, their centre, their source and their motive power. (*Tablet to August Forel* 22–23)

> Although in the body of the universe there are innumerable nerves, yet the main artery, which pulsates, energizes, and invigorates all beings, is the power of the Covenant. All else is secondary to this. ('Abdu'l-Bahá, "Tablet to Mr. and Mrs. A. C. Killius")

The existence of such a timeless covenant, governing both the natural and Divine realms of existence, is explicitly affirmed by both the Báb and Bahá'u'lláh:

> Bear Thou witness that, through this Book, I have covenanted with all created things concerning the Mission of Him Whom Thou shalt make manifest, ere the covenant concerning Mine own

> Mission had been established. (Bahá'u'lláh citing the Words of the Báb, *Epistle* 160)[33]

> Through Thee have We gathered together all created things, whether in the heavens or on the earth, and called them to account for that which We had covenanted with them before the foundation of the world. (Bahá'u'lláh, *Summons* 10)

Bahá'u'lláh's statement that "whatsoever passeth beyond the limits of moderation will cease to exert a beneficial influence" suggests the shape of the governance framework (*Proclamation* 113). This, perhaps, is a simple definition of the covenant governing reciprocity. On the human scale, it also alludes to one aspect of justice, namely that "[w]hose cleaveth to justice, can, under no circumstances, transgress the limits of moderation" (*Gleanings* 164:2). 'Abdu'l-Bahá describes the covenant mechanism this way: "A middle course is best, as it is written: 'It is incumbent upon you to do good between the two evils,' this referring to the mean between the two extremes. 'And let not thy hand be tied up to thy neck; nor yet open it with all openness . . . but between these follow a middle way'" (*Secret* 109). Evolutionary success is not just about whether an individual tiger has sharper claws or can run a little faster after game. This may make him a better hunter and may help his kind to survive in the short term, but it does not guarantee long-term success. Moderation must also be a part of the various relational transactions affecting the tiger: there must be enough game, the tigers must not be overly greedy, and the tiger's predators and fellow species must not ask more from the tigers than they can sustain. If any of these sets of relational transactions are not reciprocal, tigers are ultimately doomed.

Similarly, there is nothing inherent in self-aware consciousness that guarantees evolutionary success. There is not an inherent progress in biological evolution that gives a guarantee of survival to more intelligent species. Like the tiger that can run a little faster, intelligence may help individuals better adapt to local conditions. However, even very successful adaptation to local conditions on a short-term basis may not contribute to the long-term continuation of the species. For instance, one could argue that higher intelligence has enabled industrial-commercial-consumer cultures to vastly expand and grow—an apparently successful adaptation. However, if these cultures violate the covenant principle of moderated reciprocity, this short-term success may collapse over the long run.

There is an innate creative efflorescence in the universal system by which the new continuously emerges and offers itself as a possibility to

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3 In another place the Báb writes, "Verily We have taken a covenant from every created thing upon its coming into being concerning the Remembrance of God" (*Selections* 91).

other elements of the system. If there is receptivity, the possibility has the opportunity to develop further; if not, it becomes dormant. Even if there is answering receptivity and the possibility begins to flourish, this is not a guarantee that it will succeed over the long term and survive. Circumstances change, and the relational transactions can blaze up and dwindle. Change is omnipresent—new potentialities emerge, and new sustainable relationships are attained or disintegrate. There is no detailed blueprint, only the interplay of immeasurable numbers of random possible relational transactions within an inbuilt architecture of law that guarantees that creativity continues.

Scientists are beginning to suspect that simple cellular life may arise as a fairly predictable outcome of the organic chemistry available in the cosmos. Stephen Jay Gould argued that life emerges wherever planets exist with the right constituents and conditions—undoubtedly a common occurrence in our vast universe ("War of the Worldviews" 22–33). Suppose also that there is no single blueprint but that evolving life can experience a vast range of possibilities, including environmental histories so unpredictable that no single route can be identified ahead of time. There might be substantial variation on some common themes, even if we do not allow for different possible life chemistries. There may be vast amounts of simple life in the universe and some fair amounts of highly complex life-forms also, as well as some other amounts of conscious life. Conscious beings may, in fact, evolve frequently, but there seems little reason to expect all life to look like it does on Earth. Yet we should expect that all life, wherever it exists, whatever its appearance, and whatever its biological themes, will manifest the basic principle of reciprocity—if it is to remain viable.

Life, as it evolves, manifests a flexibility that yields immense variety. Living things on Earth have set up successful housekeeping in vastly dissimilar environmental niches, and it is possible that across the vastness of the universe we have not seen anything yet! The story of life is probably the story of "great reciprocators," with the greatest numbers and constancy of life-forms developing around the most stabilized modes of reciprocity.

A stable system is not static, however, because "the universal energy is dynamic" ('Abdu'l-Bahá, *Promulgation* 140). Dynamic energy underlies even the most apparently quiet and stable system. Each element of the universal order is constantly offering itself and receiving offers for relational interactions. Relationships develop according to each participant's specialized capacities for receptivity. As 'Abdu'l-Bahá proposes:

> the bestowals of God are moving and circulating throughout all created things. This illimitable divine bounty has no beginning and will have no ending. It is moving, circulating and becomes effective

> wherever capacity is developed to receive it. In every station there is a specialized capacity. (*Promulgation* 160)

Let's consider what happens when a change is introduced into the system that makes the system unstable. For example, we may imagine a perfectly balanced tire rotating smoothly as a system in equilibrium. Now let's attach a weight to the rim of the wheel. The wheel will wobble, and as it is speeded up, it will begin to vibrate more vigorously. If the speed continues to increase, the unbalanced wheel will vibrate ever more violently until either the tire is destroyed or the weights are adjusted to restore balance.

When a stable system begins to wobble, a new energy pattern is added to the pre-existing pattern. If additional weights are added in different places on the tire, additional energy patterns are created. None of these patterns stop the ones that already exist, but they begin to interact with each other in increasingly complex ways.

Periods of stability can be interrupted by any number of factors, the essential point is that some new or additionally energized player begins to actively offer itself to potential reciprocators. As other units or forces begin to interact with the new or changed player, the balance of the system is changed. Here we find the source of change in any system. Stability is disturbed, and the system begins to wobble and change, possibly going all the way into chaotic or turbulent behavior but ultimately returning to stability, although perhaps a very different pattern of stability. Catastrophic failure of the system is also one form of return to stability, for example. As a system of reciprocal relationships goes through this sort of change process, we must expand our concepts of order and chaos to include the possibility that both may exist simultaneously during the period of instability.

In large, highly complex systems, when the balance is disrupted, what essentially happens is that long-standing patterns of reciprocal relationships are disturbed and changed. Each old relationship that is broken or disrupted opens the possibility of the old relationship units finding new relationship partners. Even at the level of two bodies (such as planets) being intruded upon by a third, the relationships become highly complicated. Imagine billions of relationships with billions upon billions of possible interactions, and the number of possible creative interactions quickly becomes incalculable.

The place where all these interactions come together, I suggest, can be termed the "covenant." I use the word "covenant" to refer to the unknowable space where all the wildly efflorescent, reciprocal interactions are governed within the bounds of law. In religious terms, the Covenant has been described as "the Universal Balance" (Shoghi Effendi, *God Passes By* 239).

In practical terms, the covenant mechanism harmonizes the flow of

relational interactions and channels even the most chaotic processes of change toward new states of equilibrium. Equilibrium can be restored either by the formation or reformation of new mutually reciprocating relationships, allowing organization and development to continue, or through dissolution and extinction, with organization and development ceasing or decaying. The covenant essentially governs these processes of cohesion and dissolution. Relational interactions congruent with the covenant of moderated reciprocity result in further development; those that are not congruent result in decomposition and extinction.

> All created things are expressions of the affinity and cohesion of elementary substances, and nonexistence is the absence of their attraction and agreement. Various elements unite harmoniously in composition, but when these elements become discordant, repelling each other, decomposition and nonexistence result.
> ('Abdu'l-Bahá, *Promulgation* 123)

If reciprocity is the greatest relationship in the world of being, the covenant is the governance structure through which reciprocity occurs. The covenant as a governance structure provides for a diversity of elements and forces to achieve dynamic balance and to interact harmoniously in a sustained combination or composition. That such an unseen governance structure seems beyond the grasp of the mind or to fly in the face of common sense does not mean that its effects and reality cannot be discerned. In this light, it is interesting to consider the words of 'Abdu'l-Bahá:

> Similarly in the world of being there exist forces unseen of the eye, such as the force of ether previously mentioned, that cannot be sensed, that cannot be seen. However, from the effects it produceth, that is from its waves and vibrations, light, heat, electricity appear and are made evident. In like manner is the power of growth, of feeling, of understanding, of thought, of memory, of imagination and of discernment; all these inner faculties are unseen of the eye and cannot be sensed, yet all are evident by the effects they produce. (*Tablet to August Forel* 9–10).

The Most Complex Integrated Structure of Order Known

The degree of complexity expressed in the integrative process is closely related to the degrees of self-awareness, consciousness, and freedom involved. When a highly complex interplay of diverse forces and elements is harmonized, an incredibly rich reality is produced. Human beings are the most highly integrated existent things known. All the diverse interplay of forces present from the subatomic level to the assembly of

spiritual-psychological forces must be balanced and harmonized for there to be a sustainable human "I."

The structure of harmonizing governance—the covenant/Covenant—unites and integrates the great diversities within our mind, symbolized by Beginning and End, Heaven and Earth, Good and Evil, Freedom and Law, and Individual and Community. In a religious sense, the Prophets of God, through revealing the Word of God, provide the integrative vision that unites opposites on a grand cosmic scale.

> He Who is both the Beginning and the End, He Who is both Stillness and Motion, is now manifest before your eyes. Behold how, in this Day, the Beginning is reflected in the End, how out of Stillness Motion hath been engendered. This motion hath been generated by the potent energies which the words of the Almighty have released throughout the entire creation. (Bahá'u'lláh, *Gleanings* 85:3)

> [T]he holy, divine Manifestations have had a nature in the utmost equilibrium, the health and wholesomeness of their bodies most perfect, their constitutions endowed with physical vigor, their powers functioning in perfect order, and the outward sensations linked with the inward perceptions, working together with extraordinary momentum and coordination. ('Abdu'l-Bahá, *Tablets of the Divine Plan* 70)

To be human is to have the spiritual capacity to manifest this supreme integrative power. Human is not merely a biological species associated with planet Earth; more fundamentally, it is the spiritual manifestation of the Covenant principle in the universal system:

> Consider the rational faculty with which God hath endowed the essence of man. Examine thine own self, and behold how thy motion and stillness, thy will and purpose, thy sight and hearing, thy sense of smell and power of speech, and whatever else is related to, or transcendeth, thy physical senses or spiritual perceptions, all proceed from, and owe their existence to, this same faculty. So closely are they related unto it, that if in less than the twinkling of an eye its relationship to the human body be severed, each and every one of these senses will cease immediately to exercise its function, and will be deprived of the power to manifest the evidences of its activity. It is indubitably clear and evident that each of these afore-mentioned instruments has depended, and will ever continue to depend, for its proper functioning on this rational faculty, which should be regarded as a sign of the revelation of Him Who is the sovereign Lord of all. Through

its manifestation all these names and attributes have been revealed, and by the suspension of its action they are all destroyed and perish . . . . These diverse names and revealed attributes have been generated through the agency of this sign of God. (Bahá'u'lláh, *Gleanings* 83:1–3)

[M]an has been man from his very inception and origin, and… the essence of his species has existed from eternity…human existence—that is, the species of man—is a necessary existence, and…without man the perfections of Divinity would not shine forth. ('Abdu'l-Bahá, *Some Answered Questions* 50:1)

The progression of all created things culminates in perfect man, and no greater being than him exists: Man, having reached the human station, can progress only in perfections and not in station, for there is no higher station to which he can find passage than that of a perfect man. He can progress solely within the human station, as human perfections are infinite. ('Abdu'l-Bahá, *Some Answered Questions* 64:6)

Man is the sum of Creation, and the Perfect Man is the expression of the complete thought of the Creator—the Word of God. ('Abdu'l-Bahá, *Paris Talks* 39)

> At most we can say that there was a time when this earth did not exist, and that at the beginning man was not present upon it.
>
> But from the beginning that has no beginning to the end that has no end, a perfect Manifestation has always existed. This Man of Whom we speak here is not just any man: That which we intend is the Perfect Man. ('Abdu'l-Bahá, *Some Answered Questions* 50:4–5)

What defines "human" across the ages, and wherever it exists, is the capacity to consciously participate in covenant governance. This participation enables vast diversity to be integrated within the human psyche, which, in turn, is generative of infinitely creative patterns of culture, thought, and construction. A human being is the most complex integrated structure of order in the known universe, combining within itself an astounding range of elements and forces—a diversity of states that Bahá'u'lláh likens to "angels created of snow and of fire" (*Prayers* 158). Bahá'u'lláh further reflects on the reality of this astounding integrative structure in the following way:

> Likewise, reflect upon the perfection of man's creation, and that all these planes and states are folded up and hidden away within him.
>
> Dost thou reckon thyself only a puny form
>
> When within thee the universe is folded? (*Seven Valleys* 34)

The covenant is the engine of creativity in the universe. Another way to think of this is that the covenant/Covenant is not so much a doctrine as it is the structure for rightly ordered governance. In discussing the religious concept of Covenant, Bahá'u'lláh associates it with "a mighty force, a consummate power [that] lieth concealed in the world of being" and directs attention to "its unifying influence" (*Tablets* 221). In essence, 'Abdu'l-Bahá says, "If it is considered with insight, it will be seen that all the forces of the universe, in the last analysis serve the Covenant" (*Selections* 228).

Humanity's significance within the universal system is that unlike the rest of the creation, which is ruled by the covenant without awareness or freedom to choose, "[m]an perceives the hidden law in created things and co-operates with it" ('Abdu'l-Bahá, *'Abdu'l-Bahá in London* 23). What a person chooses to cooperate with is not so much a set of rules but the principle of moderated reciprocity—a governance structure that harmonizes a highly dynamic reality.

The creative power of the covenant/Covenant, Bahá'u'lláh says, is that forces that seem to be opposites are, in reality, the same but different. It is hard to grasp just how astonishingly generative this "same but different" reality really might be. A description of the power released by this transformative principle is provided by Bahá'u'lláh. It is at one and the same time both Creator and Destroyer, Begetter and Abaser.

> Turn, O Lord my God, the darkness of their fancies into the brightness of certitude, and cause them to arise, and to walk steadfastly in Thy straight Path, that haply Thy Book may not hinder them from recognizing Him Who is its Revealer, and Thy names from acknowledging the One Who is their Creator, and their Provider, and their Origin, and their King, and their Begetter, and their Destroyer, and their Glorifier, and their Abaser, and their Governor, and the Sovereign Protector of their Bearers. (*Prayers* 283–84)

Thus, the nature of change and transformation is not necessarily incremental and gradual. In fact, Bahá'u'lláh makes it clear that the generative and creative power associated with the Advent of a Manifestation of God is profoundly dynamic and disruptive:

> I testify that no sooner had the First Word proceeded, through the potency of Thy will and purpose, out of His mouth, and the First Call gone forth from His lips than the whole creation was revolutionized, and all that are in the heavens and all that are on earth were stirred to the depths. Through that Word the realities of all created things were shaken, were divided, separated, scattered, combined and reunited, disclosing, in both the contingent world and the heavenly kingdom,

> entities of a new creation, and revealing, in the unseen realms, the signs and tokens of Thy unity and oneness. (*Prayers* 295)
>
> The world's equilibrium hath been upset through the vibrating influence of this most great, this new World Order. (*Gleanings* 70:1)

Scientists are coming to understand, in fact, that systems—both natural and cultural—are hypersensitive and peculiarly unstable (Buchanan). There is constant change, motion, and transformation inherent in the universal system—an inherent vibrating, dividing, separating, and scattering. It is the power of the covenant that combines and reunites, integrates and unifies, disclosing through this structure of governance new creations of unity and reciprocity.

If the world of existence came into being through the dynamic interaction between the active force and that which is its recipient, then existence perhaps is defined more by the synapse where the active and receptive forces interact than by either activity or receptivity. This is, perhaps, one way to define freedom: the synapse where activity and receptivity interact under human agency.

The development of freedom of mind in the human species meant that a lot of things would never be the same again. With the achievement of self-conscious freedom by one species, the universe reached a new level of complexity and potential. This freedom to discover, reflect, and choose is more than just an intellectual capacity. It is an agent for the creative transformation of the universe itself.

The universal system unfolds more of what it potentially can become through the expression of human mind and spirit. Humanity is the center of the unfolding of integrative consciousness in creation. As we awaken to new possibilities of obedience to the covenant of moderated reciprocity, it is the "spiritual" essence of the universe that achieves an entirely new level of possibilities. The unfolding of the human spiritual potential for integrative thinking—for conscious participation in the balancing governance structure of the covenant—is not an isolated event but one that creatively changes the entire universal system.

'Abdu'l-Bahá tells us that natural selection does occur in an evolutionary sense: "In nature there is the law of the survival of the fittest," and this is said to be a "natural law" (*Promulgation* 353). The world of nature is characterized by "a ceaseless struggle for existence," and "evidences of the physical survival of the fittest" are everywhere (*Promulgation* 400). However, the capacity to learn and develop capacities of integrative consciousness and behavior allows for humankind not only to transcend the struggle for existence, but to form nature to another pattern of development. The natural order is developed into something more than it was through human action. As conscious activities

to broaden integrative thinking and behavior are consolidated and expanded, humanity departs more and more from being a purely "natural" species. And with each consolidating step in this direction, future generations are formed to depart ever more systematically from a pure "state of nature."

> Man is endowed with an outer or physical reality. It belongs to the material realm, the animal kingdom, because it has sprung from the material world. This animalistic reality of man he shares in common with the animals.
>
> The human body is like animals subject to nature's laws. But man is endowed with a second reality, the rational or intellectual reality; and the intellectual reality of man predominates over nature. ('Abdu'l-Bahá, *Foundations* 51)

> Throughout the universe, composite materials or complex phenomena are made up of single elements bound together by a power of attraction or association. Animals are susceptible to certain affiliation and fellowship and they exercise natural affinity of kind. This elemental attraction, this admixture and selective affinity is love manifest in the degree of the animal kingdom. Humanity has all the sensibilities of the animal kingdom, but still beyond and above all these lower powers humanity has a capacity for the susceptibilities and affinities which bind humans together, enabling them to live and associate in friendship and solidarity. ('Abdu'l-Bahá, *Promulgation* 255–56)

Evolutionary biologists have linked this capacity for affinity and solidarity to the development of conscious intelligence and creative intellect. Nicholas Humphrey, a psychologist at the University of Cambridge, for instance, has argued that the primary purpose of creative intellect is "to keep society together" (Leakey 147). Related research suggests that "in humans, greater social integration is generally associated with reduced mortality and better physical and mental health, particularly for women . . . and the capacity and motivation to establish and nurture close social relationships has been a strong selective pressure in the primate evolution for many millions of years" (Silk et al., "The Benefits of Social Capital").

The development of human-style consciousness correlates with the high demands for creative, integrative intelligence associated with social life. The network of social alliances, monitoring of others' behavior, and patterns of interaction, even among primates generally, is extremely complex. Learning how to be successful in such complex networks of reciprocal interaction is difficult and places high evolutionary demands on the capacities to think and behave integratively. Developing a capacity for integratively creative intelligence is both a

spontaneous evolutionary benefit and a force that, as it develops in increasingly complex ways, becomes a factor itself in changing the evolutionary context for future generations.

As a case in point, one of the unusual aspects of human development is that offspring are born virtually helpless and remain relatively small and powerless throughout an extended childhood and adolescence. Even other primates progress from infancy to adulthood much more rapidly. It has been suggested that this extended period of adolescent development has to do with the high degree of socially integrative learning that young humans must absorb to be successful among complex rules of culture and social mores (Leakey 43–50).

There is an inherent difficulty in tracing causes and consequences within a chaotic process such as evolutionary change, which occurs over thousands of generations and involves an impenetrable web of interactions. However, it is also true that patterns can be identified amidst the chaos. For instance, young kittens inevitably scratch dirt in the same manner to cover their droppings, and birds build characteristic styles of nests. Similarly, a biologist from another planet would observe some universal patterns in human development that are uniquely characteristic of humanity and can be reasonably assumed to have some evolutionary sources. The capacity for higher-order integrative thinking and behavior has many manifestations. Biological anthropologist Terrence Deacon points to symbolic thinking that can unify, synthesize, and relate amazingly complex arrays of impressions, perceptions, concepts, and interactions as perhaps the most telling human characteristic of all:

> We are all heirs of symbolic forms that were passed from one generation to the next and from one group to another, forming a single unbroken tradition. We derive all our symbolic "traits" from this common pool and contribute to its promulgation. Being a part of this symbolic information lineage is in many respects a more diagnostic trait for "humanness" than any physical trait. (341)

The capacities for playing successful social chess require incredible skill in understanding and integrating the diverse, shifting, and unpredictable behavior of others (Leakey 147–49). In discussing the qualities of a truly learned individual, 'Abdu'l-Bahá explains that moderating one's own behavior and attitudes "is the very foundation of every laudable human quality . . . the balance wheel of all behavior, the means of keeping all man's good qualities in equilibrium" (*Secret* 59).

The human evolutionary process has required skills to integrate and harmonize a plethora of diverse individuals, factors, phenomena, and concepts within a flexible but unified creative intelligence. What uniquely happens in the human case is that

conscious efforts are taken to explore and develop ever more integrative capacities for thinking and behaving, and new generations are educated and trained to carry these capacities to even higher levels of development. This, in turn, creates an evolutionary environment that is increasingly pro-integrative.

Human beings develop as a unique species through conscious efforts to manifest, test, and confirm integrative skills and capacities. Throughout history, individuals and social groups have undertaken conscious initiatives such as education, training, religious observance, storytelling, myth-making, ritual, prayer, meditation, and many other means of fostering integrative thinking and capacities. Stimulating a transcendent vision allows people to perceive new relationships and connections between such seemingly dissimilar (even opposite) concepts as First and Last, Beginning and End, Good and Evil, Individual and Community, etc. This can promote further development of individual integrative capacities while also increasing group solidarity.

At the same time, because the human integrative capacity functions as a lens through which we survey and interpret the world, it can both enhance and constrain our access to the new diverse sources of input that are the engines of creativity. Sometimes our integrative capacity comes to rest in a fairly rigid configuration for a time, interpreting the world for us in a relatively stable pattern of perception. This pattern seems to be so normal and offers such a logical picture of the world around us that we sometimes dub it "common sense." Each of us has our own idiosyncratic bundle of common sense.

However, our unexamined, largely unconscious collection of common sense can become a problem for creativity. Common sense can easily become institutionalized, formally and informally, in processes and circumstances that systematically limit contact with information and ways of looking at the world that lie beyond one's personal prejudices. As Einstein famously observed: "Common sense is the collection of prejudices acquired by age eighteen" (11). It is precisely such unconscious common sense maps of the world that underlie racism, sexism, and other forms of structural prejudice and injustice.

This perhaps is an example of a situation ripe for the world's equilibrium to be upset—and a new surge of creativity released—by a renewal of covenant governance. In the following passages, one can almost feel the intense creative heat generated by the interaction of "similar but different" forces within the parameters of covenant governance:

> And yet, is not the object of every Revelation to effect a transformation in the whole character of mankind, a transformation that shall manifest itself both outwardly and inwardly, that shall affect both its inner life

> and external conditions? For if the character of mankind be not changed, the futility of God's universal Manifestations would be apparent. (Bahá'u'lláh, Kitáb-i-Iqán 240–41)

> Is it within human power, O Hakim, to effect in the constituent elements of any of the minute and indivisible particles of matter so complete a transformation as to transmute it into purest gold? Perplexing and difficult as this may appear, the still greater task of converting satanic strength into heavenly power is one that We have been empowered to accomplish. The Force capable of such a transformation transcendeth the potency of the Elixir itself. The Word of God, alone, can claim the distinction of being endowed with the capacity required for so great and far-reaching a change. (Bahá'u'lláh, *Gleanings* 99:1)

In his advice to Hakim, Bahá'u'lláh, in essence, is describing the fundamental creative dynamic of the universal system. When I argue that the universe is coded to be creative, I am suggesting that any particle of matter may transform into its opposite. Even more, that satanic strength may transform into heavenly power. The scales of necessary observation may be too vast or too tiny, too timeless or too fleeting, but such transformations are the creative work of the covenant/Covenant being done.

The application of this understanding may be far more profitable than it might seem. First, non-equilibrium is the natural state of creativity. Searching for a gradual unfolding of history or of social transformation is a misplaced wisp of illusion. Perhaps it is more fruitful to analyze the physical, social, and cultural worlds around us as naturally poised toward dramatic periods of change, in which even the smallest forces—like grains of sand falling onto a pile—can have tremendous transformative effects. What if the world is permanently balanced in a critical state so that even the tiniest acts are amplified and impact the larger system? Perhaps we may find greater power within ourselves by viewing our spiritual development and actions through this lens.

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