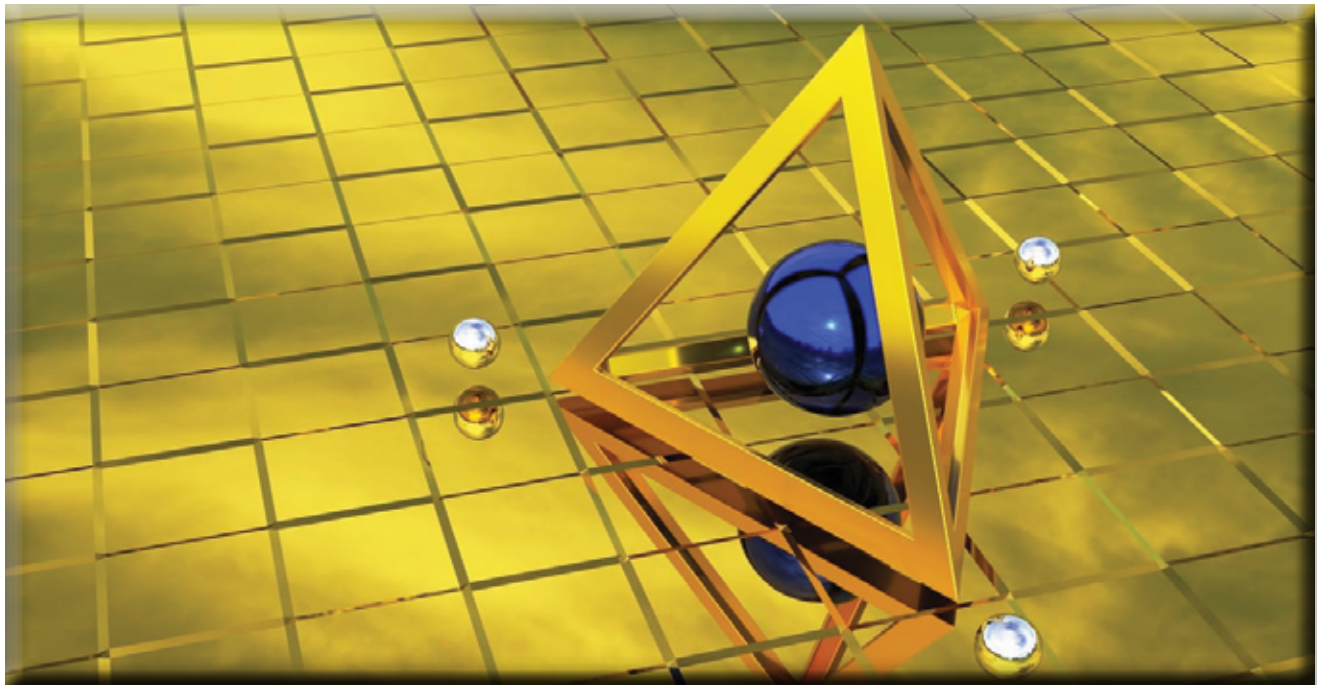


ACES (Articles, Columns, & Essays)

Achieving Peace: A New Paradigm, Part II—Tetrahedron and the Game

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INTRODUCTION

Part I of this article proposed that (1) achieving peace should be both a global and a local goal, and (2) that global civilization, at its very core, believes and accepts that nature's design is based on scarcity; however, scientific evidence manifested during the current century instructs us that, in fact, *sufficiency*, or *plenitude*, is the "normal" condition in the universe and, by extension, on earth.¹

Here, part II draws heavily on the work of the late R. Buckminster Fuller, especially as set out in his works, *Synergetics*² and *Utopia or*

Oblivion,³ to develop an organizational and information-processing model which can host a planet-wide game for "Making the World Work for Everyone."

This paper proposes that nature's design, topology, geometry, and other attributes of the tetrahedron provide a powerful conceptual model to replace the ancient, static, and obsolete organizational pyramid, which is replete with its hierarchies, inequities, and requirements for "you-or-me" competition.

When reading this article, the reader will find occasional but purposeful restatement

(repetition), which is offered based on Fuller's "Note on the Rationale for Repetition in This Work" (*Synergetics*):

It is the writer's experience that new degrees of comprehension are always and only consequent to ever-renewed review of the spontaneously rearranged inventory of significant factors. This awareness of the processes leading to new degrees of comprehension spontaneously motivates the writer to describe over and over again what—to the careless listener or reader—might seem to be tiresome repetition, but to the successful explorer is known to be essential mustering of operational strategies from which alone new thrusts of comprehension can be fully accomplished. To the careless reader seeking only entertainment, the repetition will bring about swift disconnect.⁴

Nations and societies built on a belief in *scarcity* are ancient in their origins and dominate, both globally and locally, the way in which life is conducted at every level. Competition is the dominant strategy employed to secure and insure both short-term and ongoing survival in a (wrongly) presumed resource-scarce (i.e., not-enough-for-all) environment.

Using optimally potent ways, a meshing and integration of our *new* understandings of plenitude with the *previous* globally dominant, scarcity-based and scarcity-driven views of economic and political systems is critical, if there is ever to be a truly enduring and self-sustaining global peace.

Accruing proofs of, and providing ready access to, plenitude and sufficiency have potentially profound and ameliorative effects on the quality of life for virtually the whole of humanity. Along with the new understandings, there need to be created new ways of organizing and conducting human affairs and efforts so that

"sufficiency for all" becomes the new operational reality.

Strategically speaking, the application of general systems theory (GST) to enduring and ancient human problems should be deemed essential. As presented in Fuller's *Synergetics*,

In order to take synergetic strategy advantage and thereby to think comprehensively and anticipatorily, in terms of total systems, we have to start off with Universe itself as a closed finite system that misses none of the factors. We must also include all the universal degrees of freedom, and the approximately unlimited range of frequencies in the use thereof, which cover all variable relationships of Universe. They become the controlling factors governing general systems and, thereby govern such supercomplex systems design as that of a nation's navy or a fundamental program for comprehensively considerate and efficiently effective use of all world resources. The general systems approach starts with the differentiation of Universe, including both metaphysical and physical, and permits progressive subdivisions in cybernetical bits to bring any local pattern of any problem into its identification within the total scheme of generalized system events. Problem solving starts with Universe and thereafter subdivides by progressively discarding irrelevancies thereby to identify the "critical path" priorities and order of overlapping developments that will most economically and efficiently and expeditiously realize the problem's solution by special local problem identification and location within the totality of the problem-solving scenario.

Because of our overspecialization and our narrow electromagnetic spectrum range of our vision, we have very limited integrated comprehension of the significance of total information. For this reason, we see and comprehend very few motions among

the vast inventory of unique motions and transformation developments of Universe. Universe is a nonsimultaneous complex of unique motions and transformations. Of course, we do not “see” and our eyes cannot “stop” the 186,000-miles-per-second kind of motion. We do not see the atomic motion. We do not even see the stars in motion, though they move at speeds of over a million miles per day. We do not see the tree’s or child’s moment-to-moment growth. We do not even see the hands of a clock in motion. We remember where the hands of a clock were when we last looked and thus we accredit that motion has occurred. In fact, experiment shows that we see and comprehend very little of the totality of motions.

Therefore, society tends to think statically and is always being surprised, often uncomfortably, sometimes fatally by the omni-inexorable motion of Universe. Lacking dynamic apprehension, it is difficult for humanity to get out of its static fixations and see great trends evolving. Just now, man is coming into technical discovery of general systems theory. The experimental probing of the potentials of the computers awakened man to a realization of the vast complexes of variables that can be mastered by general systems theory. So far, man has dealt but meagerly and noncomprehensively with his powerful planning capability. So far, he has employed only limited systems theory in special open-edged systems—“tic-tac-toe” rectilinear grid systems and planar matrixes. The arbitrary open parameters of infinite systems can never be guaranteed to be adequate statements of all possible variables.

... Unless one starts with Universe, one always inadvertently starts with open infinite systems. Only by starting with finite Universe and progressively dismissing finite irrelevancies can one initiate finite, locally

limited, general systems theory to assured satisfaction in problem solving.

... We are going to have to find effective ways for all of humanity to see total Earth. Nothing could be more prominent in all the trending of all humanity today than the fact that we are soon to become world man; yet we are greatly frustrated by all our local, static organization of an obsolete yesterday.⁵

At our disposal to employ—as tools for global synchronization into the reality of cosmic plenitude—are (1) the reality of plenitude itself; (2) strategic and synergetic thinking as ever increasingly augmented through general systems exploration of universe, including any derivative models of designs destined for local applications; and (3) the increasing capacity and capability of computers as instruments for processing vast amounts of data at levels of complexity that greatly broaden and deepen humanity’s apprehension of both the visible and invisible global conditions, patterns, and trends.

Furthermore, the discovery of the prime geometry that nature employs as its “building block” in both the physical and the metaphysical universe—i.e., the tetrahedron, octahedron, icosahedron, and the vector equilibrium (see Figures 1, 2, 3, and 4)—gives us the opportunity to base our own designs, models, and architectures on those that nature employs. In other words, we can glean lessons for humanity’s success through the study of recently discovered cosmic architecture and application of such information to the great problems confronting humankind.

This article will also focus on the application of cosmic architecture to the problem of progressively eliminating frustrations (which are caused by local, static organizations of an obsolete yesterday) by providing an “energetic” (non-static) geometric model to be used as the systems structure forming new organizations

which may supplant or transform those that are pre-existing and static—and, therefore, obsolete.

Much of the static condition of today's organizations derives from humanity's belief that the past best instructs and predicts the future. Einstein informed us that mass is equivalent to energy. Matter is not static; it is energy itself.

Those of us who are without benefit of an electron microscope with which to peer into atomic and subatomic levels of matter—and the relative great distances that separate one atom from the other—have a very limited range of optical vision which permits us to see only the aggregated atoms of matter as seemingly dense, solid, and non-energetic. So, the inner workings of nature remain invisible to our ordinary sight, making problematic any conceptual shift from a world and universe that is apparently solid, static, enduring, immutable, and eternal to one that is invisible, always changing/transforming, and is built entirely of omnipresent and ever-abundant energy. Shedding an ancient, honored, and static view of the world is both the problem and the preferred outcome, if we are to allow ourselves to enter the new world of *plenitude for all*.

The pyramid (which is one-half of an octahedron but not a tetrahedron) is often employed as a model to describe social, cultural, and economic systems. As an economic model, it shows the few *haves* at or near the top and the *have-nots* at or near the bottom. The inequities in access to and distribution of wealth are graphically depicted on the pyramid model and are, at least inferentially, “proven” by the fact that the model is chosen to depict “the natural order of things.” The model has come to represent the eternity and immutability of nature. The great pyramids of Egypt stand in silent and unchanging witness to the passing millennia. The social, economic, and political systems they symbolize (e.g., scarcity-based competition for resources and social, political, and economic hierarchies)—such as with the pharaoh at the top and the peasants at the bottom, or the political/corporate president

at the top and the ordinary citizen/worker at the bottom—reach across time, dictating how we live today and tomorrow; and these systems hold us in bondage to a view of the universe which is non-energetic and static, unchanging, and obsolete.

Reference was made earlier to the prime (energetic) geometry that nature employs as “building blocks” of all structure—organic, inorganic, and conceptual—including weightless and size-less thought; those building blocks are the tetrahedron, octahedron, icosahedron, and vector equilibrium (see Figures 1, 2, 3, and 4). Strictly speaking, the vector equilibrium (VE) is not a structure, as are the other three; VE is a system of omnipresent triangulation within which, and through which, the three prime structures exist, transform, aggregate, and associate/disassociate. The VE comprises the invisible cosmic matrix, the “cosmic web.”

The problem with using the (Egyptian) pyramid conceptually as a model to represent a rationale for (or to depict graphically) our political, economic, and social systems does not stem so much from its apparent geometry (the pyramid is one-half of an octahedron and, thus, a portion of a prime structure). The problem stems more from our continuing to mistakenly equate conceptuality and nature's design with the (now) obsolete view of nature as being comprised solely of static, immutable, non-energetic, massive solids. Derivatively, because gravity brings the pyramid to rest upon the earth's surface, structures (whether physical or conceptual) must have a top and a bottom.

On this idea, R. Buckminster Fuller writes the following (this author's notes about related figures are included in brackets):

In the conceptual process of developing the disciplines for carrying on the process of consideration, the process of temporarily putting aside the irrelevancies and working more closely for the relationships between

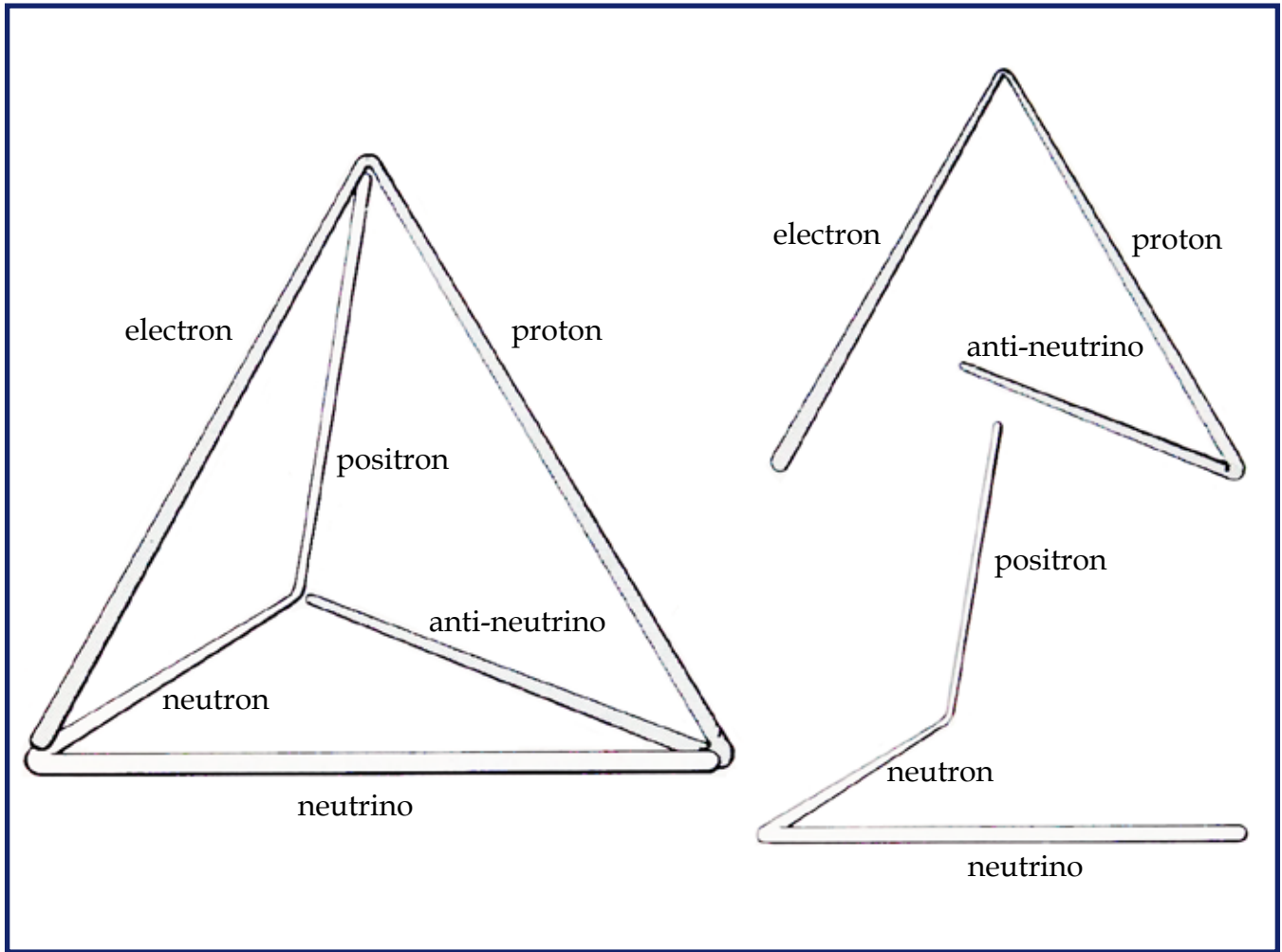
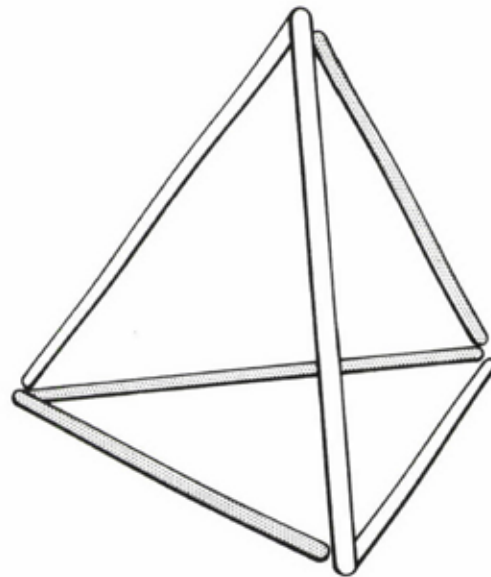
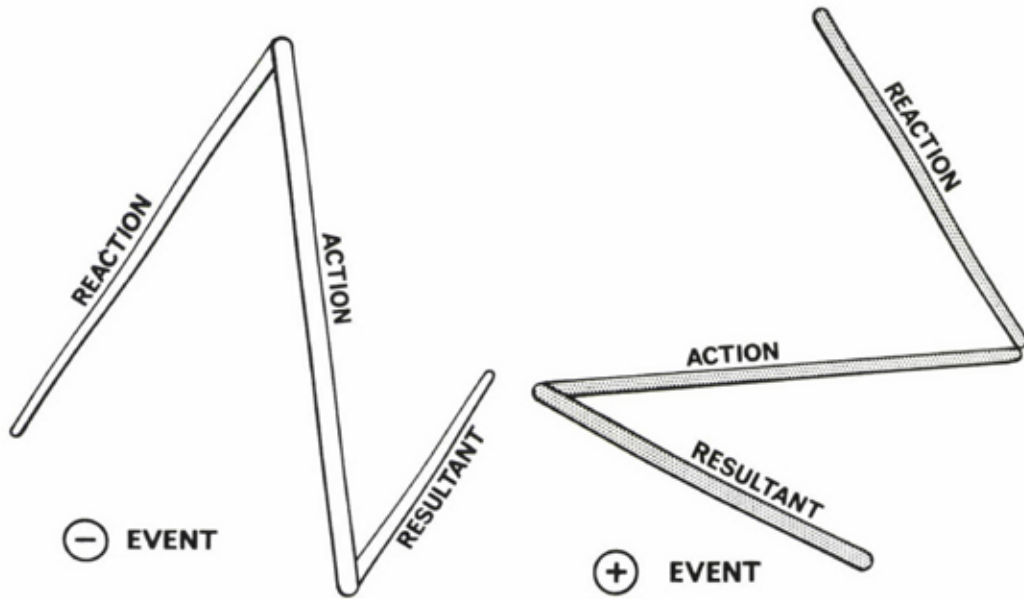


Figure 1: Tetrahedron as Vectorial Model of Quantum. The tetrahedron as a basic vectorial model is the fundamental structural system of the Universe. The open-ended triangular spiral as action, reaction, and resultant (proton, electron, and anti-neutrino; or neutron, positron, and neutrino) becomes half quantum. An association of positive and negative half-quantum units identifies the tetrahedron as one quantum.*

A TRIANGLE IS A SPIRAL
AND IS ONE ENERGY EVENT



ONE POSITIVE + ONE NEGATIVE EVENT
= **TETRAHEDRON**

Figure 2: Two Triangular Energy Events Make Tetrahedron. The open-ended triangular spiral can be considered one “energy event” consisting of an action, reaction, and resultant. Two such events (one positive and one negative) combine to form the tetrahedron.†

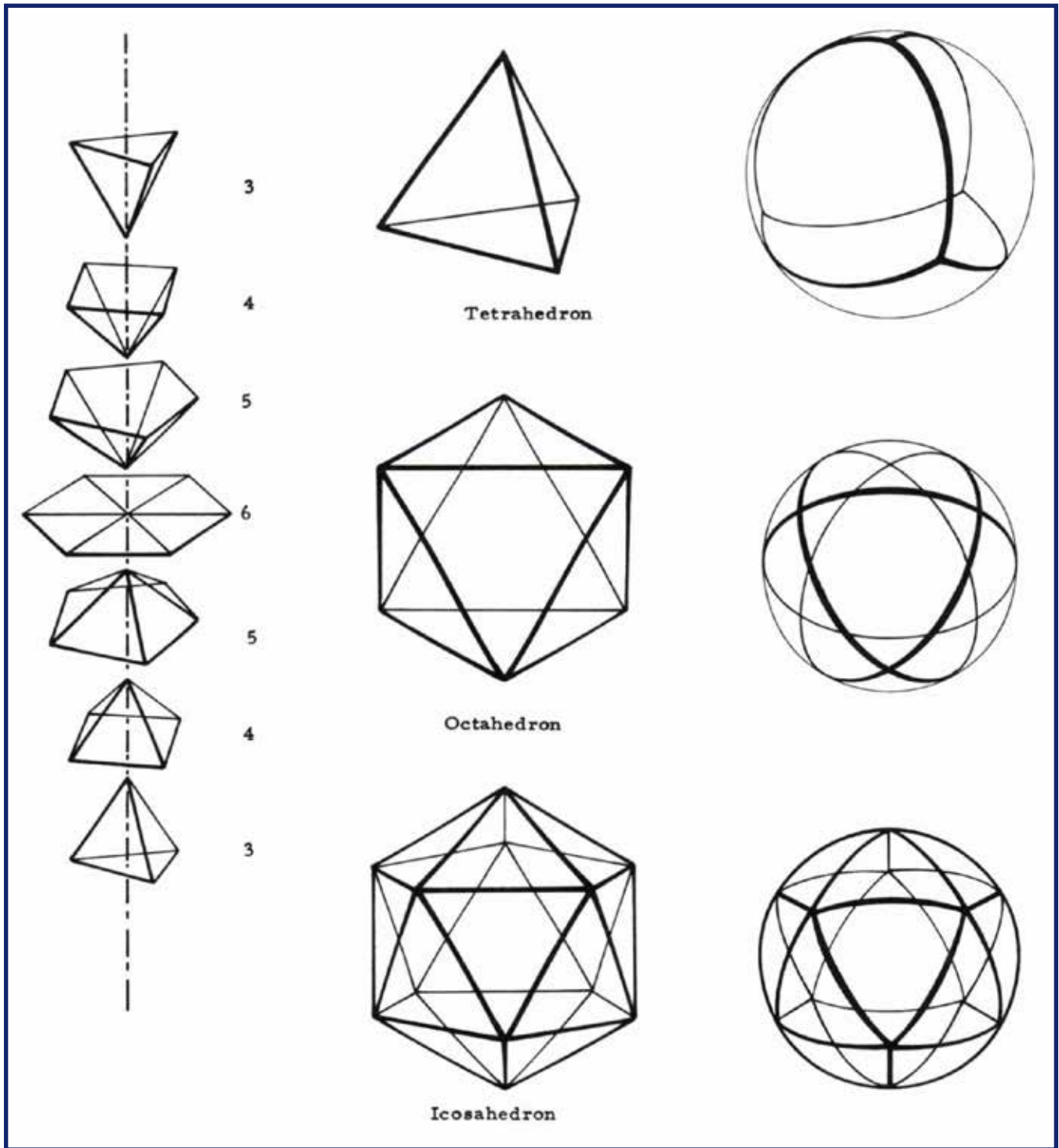


Figure 3: The Three Basic Structural Systems in Nature with Three, Four, or Five Triangles at Each Vertex. There are only three possible cases of fundamental omniscymmetrical, omnitriangulated, least-effort structural systems in nature: the tetrahedron with three triangles at each vertex, the octahedron with four triangles at each vertex, and the icosahedron with five triangles at each vertex. If there are six equilateral triangles around a vertex we cannot define a three-dimensional structural system, only a “plane.” The left column shows the minimum three triangles at a vertex forming the tetrahedron through to the six triangles at a vertex forming an “infinite plane.” The center column shows the planar polyhedra. The right column shows the same polyhedra in spherical form.‡

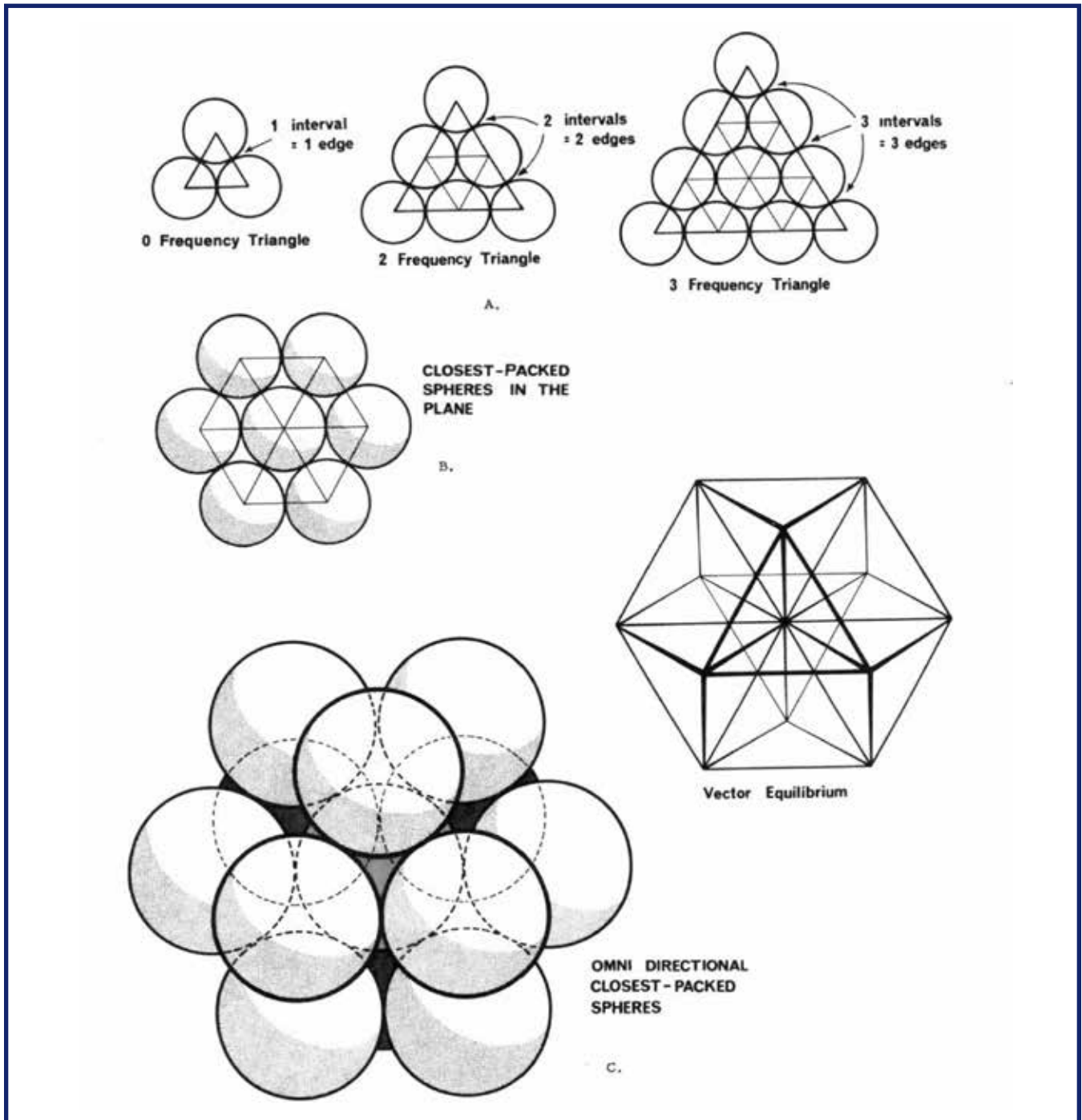


Figure 4: Vector Equilibrium - Omnidirectional Closest Packing Around a Nucleus. Triangles can be subdivided into greater and greater numbers of similar units. The number of modular subdivisions along any edge can be referred to as the *frequency* of a given triangle. In triangular grids, each vertex may be expanded to become a circle or sphere showing the inherent relationship between closest-packed spheres and triangulation. The frequency of triangular arrays of spheres in the plane is determined by counting the number of intervals (A) rather than the number of spheres on a given edge. In the case of concentric packings or spheres around a nucleus the frequency of a given system can be either the edge subdivision or the number of concentric shells or layers. Concentric packings in the plane give rise to hexagonal arrays (B), and omnidirectional closest packing of equal spheres around a nucleus (C) gives rise to the vector equilibrium (D).**

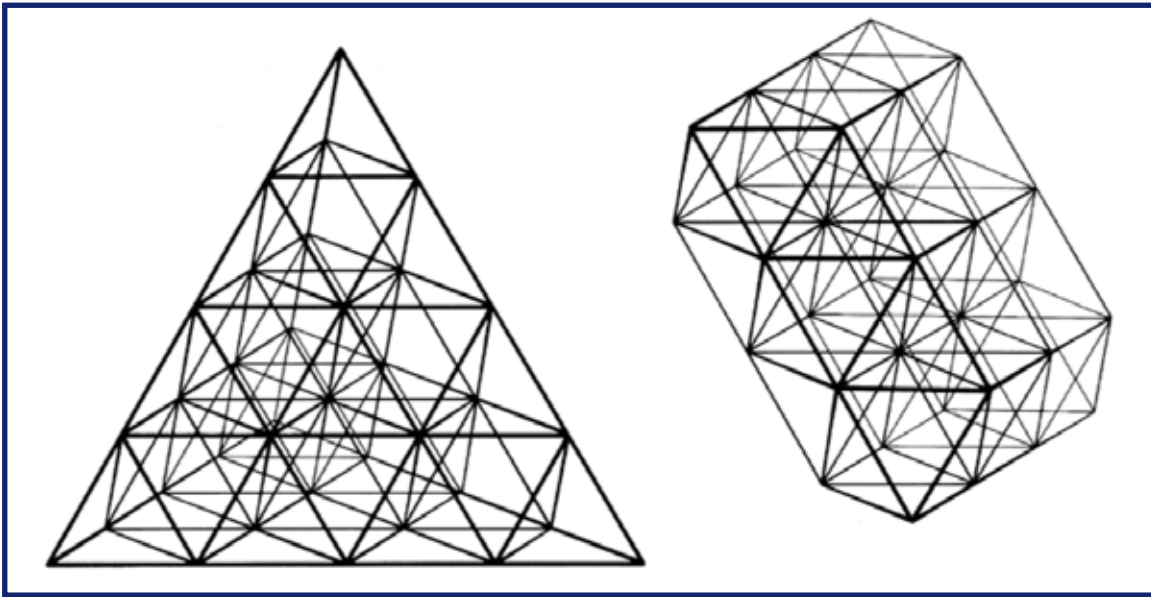


Figure 5. When the centers of equiradius spheres in closest packing are joined with lines, an isotropic vector matrix is formed. This constitutes an array of equilateral triangles which is seen as the comprehensive coordination frame of reference of nature's most economical, most comfortable structural interrelationships employing 60-degree association and disassociation. This provides an omnirational accounting system which, if arbitrarily accounted on a 90-degree basis, becomes inherently irrational. The isotropic vector matrix demonstrates the capability of accommodating all symmetrically and asymmetrically terminated, high-frequency energy vectors of any structural shaping.††

the components that are considered relevant, we find that a geometry of configuration emerges from our awareness of the minimum considered components. A minimum constellation emerges from our preoccupation with getting rid of the irrelevancies. The geometry appears out of pure conceptuality. We dismiss the irrelevancies in the search for understanding, and we finally come down to the minimum set that may form a system to divide Universe into macrocosm and microcosm, which is a set of four items of consideration. The minimum consideration is a four-star affair that is tetrahedral. Between the four stars that form the vertexes of the tetrahedron, which is the simplest system in Universe, there are six edges that constitute all the possible relationships between those four stars.

The tetrahedron occurs conceptually independent of events and independent of

relative size. By tetrahedron, we mean the minimum thinkable set that would subdivide Universe and have the interconnectedness where it comes back upon itself. ... The basic structural unit of physical Universe quantation, tetrahedron has the fundamental prime number oneness. [See Figure 1.]

... The tetrahedron is the first and simplest subdivision of Universe because it could not have an insiderness and an outsiderness unless it had four vertexes and six edges. ... The vertexial set of four local-event foci coincides with the requirement of quantum mathematics for four unique quanta numbers for each uniquely considerable quantum.

... The tetrahedron is a form of energy package. [See Figures 2 and 3.] The tetrahedron is transformable... All of the definable structuring of Universe is tetrahedrally coordinate in rational number increments of the tetrahedron.

Organic chemistry and inorganic chemistry are both tetrahedrally coordinate. This relates to the thinking process where the fundamental configuration came out a tetrahedron.... We discover that nature is using tetrahedron in her fundamental formulation of the organic and inorganic chemistry. All structures are tetrahedrally based, and we find our thoughts resolving themselves spontaneously into the tetrahedron as it comes to the generalization of the special cases that are the physics or the chemistry.

... Substituting the word *tetrahedron* for the number two completes my long attempt to convert all the previously unidentifiable integers of topology into geometrical conceptuality. Thus we see both the rational energy quantum of physics and the topological tetrahedron of the isotropic vector matrix rationally accounting all physical and metaphysical systems.

... When we get to something as simple as finding that the tetrahedron is the minimum thinkable set that subdivides Universe and has the relatedness, and that the chemist found all the structuring of nature to be tetrahedral, in some cases vertex to vertex, in others interlinked edge to edge, we find, as our thoughts go this way, that it is a very satisfying experience.⁶

The foregoing passage contains several important points to be used in developing a rationale for employing the conceptual tetrahedron as an organizational systems structure useful both as a problem-solving tool and model for organizing human efforts. Those points are as follows:

1. The tetrahedron is the simplest system in the universe.
2. The tetrahedron is the minimum set which divides the universe into macrocosm and microcosm.

3. The tetrahedron's geometry appears out of pure conceptuality.
4. Minimum consideration is a four-star (four-event) affair that is tetrahedral.
5. The tetrahedron occurs conceptually independent of events and independent of relative size.
6. The tetrahedron is the basic structural unit of physical universe quantation.
7. The tetrahedron has the fundamental prime-number oneness.
8. The tetrahedron is a form of energy package. (See Figure 2.)
9. The tetrahedron satisfies the requirement of quantum mathematics for four quanta numbers for each uniquely considerable quantum.
10. The tetrahedron is transformable.
11. Nature uses the tetrahedron for its fundamental transformation of organic and inorganic chemistry.
12. At the level of general systems consideration of special cases, thoughts spontaneously resolve themselves into the tetrahedron.
13. The tetrahedron considered as the number 2 represents unity, because unity is, at minimum, two.
14. As the number 2 (i.e., the rational energy quantum of physics and the topological tetrahedron of the vector equilibrium), the tetrahedron rationally accounts for all physical and metaphysical systems (i.e., metaphysical is without mass/matter, unweighable). (See Figure 4.)

15. The tetrahedron is the minimum thinkable set.

As mentioned earlier, the thrust of this article is about conceptually replacing/transforming the generally accepted ancient rationale for the static, only partially accurate, obsolete, geometric model (i.e., the pyramid) of economic, political, and social organization, with a model derived directly from the prime (energetic) geometry that nature omni-employs in its accounting for both physical and metaphysical Universe.

This article develops the rationale for the adoption and adaptation of the energetic tetrahedron as the prime geometric omnirational model for all economic, political, and social accounting, thereby replacing the conceptually static and obsolete half-octahedral pyramid. By so doing, this article will inaugurate the creation of an essentially new world in which universal peace and sufficiency become fecund realities.

It is important to examine the tetrahedron in the universal “context” or “milieu” or “matrix” through and in which it exists and behaves—i.e., the isotropic vector matrix, which could also be called the “cosmic web” (see Figure 5), and its VE could be called the “architectural modules” (see Figure 4).

In Fuller’s earlier discussion about man’s evolving discovery of technical GST (general systems theory), he points out that man’s employment of GST has been meager and noncomprehensive as well as limited to special open-edged systems, or “tic-tac-toe” rectilinear (the 90-degree geometry of the rectangle or square) grid systems and planar matrices—essentially, 2- or 3-dimensional matrices comprised of squares and/or rectangles. The fourth dimension of time as a property of energy—and, therefore, a characteristic of all energy events, both physical and metaphysical—cannot be accounted for using the geometry of these early GST applications as they are applied to 3-dimensional grid systems and

planar matrices. Fuller discovered nature’s own grid-and-matrix system: the VE and the isotropic vector matrix, which, it turns out, is not 90-degree coordinate but 60-degree coordinate (as is the tetrahedron).

Fuller discusses some aspects of his discovery of the isotropic vector matrix:

When the centers of equiradius spheres in closest packing are joined by most economical lines, i.e., by geodesic vectoral lines, an isotropic vector matrix is disclosed—“isotropic” meaning “everywhere the same,” “isotropic vector” meaning “everywhere the same energy conditions.” This matrix constitutes an array of equilateral triangles that corresponds with the comprehensive coordination of nature’s most economical, most comfortable, structural interrelationships employing 60-degree association and disassociation. Remove the spheres and leave the vectors, and you have the octahedron-tetrahedron complex, the octet truss, the isotropic vector matrix.

The isotropic vector matrix is four-dimensional and 60-degree coordinated. [It is comprised of closest-packed VE’s which form the matrix. See Figure 7.] It provides an omnirational accounting system that, if arbitrarily accounted on a three-dimensional, 90-degree basis, becomes inherently irrational. The isotropic vector matrix demonstrates the ability of the symmetrically and asymmetrically terminated, high-frequency energy vectors to accommodate the structuring of any shape.

Our extension of the Avogadro hypothesis generalizes that all energy conditions are the same. Inasmuch as vectors describe energy conditions, this would mean a volumetric aggregation of vectors in a structural complex in which all of the interacting vectors would have to be of the

same length and all of their intersecting angles would have to be the same. This state of omnisameness of vectors stipulates the “isotropic,” meaning everywhere the same. This prescribes an everywhere state of equilibrium.⁷

... The isotropic vector matrix multiplies concentrically. But because vectors are discrete, the isotropic vector matrix’s lines do not go to infinity. Their length must always represent sum-totally the total energy of eternally regenerative physical Universe. No matter how high the internal frequency of finite Universe, the overall vector equilibrium is of unit magnitude. This magnitude corresponds to that of the speed of radiation uninterfered with in vacuo. ...

I am confident that I have discovered and developed the conceptual insights governing the complete family of variables involved in realization by humanity of usable access to the ultimate computer ... ultimate meaning here: the most comprehensive, incisive and swiftest possible information-storing, retrieving, and variably processing facility with the least possible physical involvement and the least possible investment of human initiative and cosmic energization. ... We have here the disclosure of a new phase of geometry employing the invisible circuitry of nature.⁸

It is called the vector equilibrium because the radials and the circumferentials are all of the same dimension and the tendencies to both explode and implode are symmetrical.

... The vector equilibrium is the common denominator of the tetrahedron, octahedron, and cube. It is the decimal unit within the octave system. Double its radius for octave expansion.

The vector equilibrium is a system. It is not a structure. Nor is it a *prime volume*, because

it has a nucleus. It is the *prime nucleated system*. The eight tetrahedra and six half-octahedra into which the vector equilibrium may be vectorially subdivided are the volumes that are relevantly involved.⁹

Equilibrium between positive and negative is zero. The vector equilibrium is the true zero reference of the energetic mathematics. Zero pulsation in the vector equilibrium is the nearest approach we will ever know to eternity and god: the zerophase of conceptual integrity inherent in the positive and negative asymmetries that propagate the differentials of consciousness.

The vector equilibrium is of the greatest importance to all of us because all the nuclear tendencies to implosion and explosion are reversible and are always in exact balance. ... The integrity of Universe is implicit in the external finiteness of the circumferential set and its surface-layer, close-packing, radius-contracting proclivity which always encloses the otherwise divisive internal radial set of omnidirectional vectors.¹⁰

In order to reduce the concept of vector equilibrium to a single-name identity, we employ the word *equanimity* as identifying the eternal metaphysical conceptuality model that eternally tolerates and accommodates all the physically regenerative, intertransforming transactions of eternal, inexorable, and irreversible evolution’s complex complementations, which are unitarily unthinkable, though finite.

The equanimity model permits metaphysically conceptual thinkability and permits man to employ the package-word *Universe*. ... Humanity’s physical brains’ inherent subjective-to-objective time lag reflexing induces the relatively aberrated observation and asymmetrical articulation tolerated by ever more inclusively and

incisively demanding mind's consciousness of the absolute exactitude of the eternally referential centrality at zero of the *equanimity model*. Thus mind induces human consciousness of evolutionary participation to seek cosmic zero. Cosmic zero is conceptually but sizelessly complex, though full-size-range accommodating.

In the equanimity model, the physical and the metaphysical share the same design. The whole of physical Universe experience is a consequence of our not seeing instantly, which introduces time. As a result of the gamut of relative time-lags, the physical is always the imperfect experience, but tantalizingly always ratio-equated with the innate eternal sense of perfection.¹¹

The foregoing passages contain a number of especially salient features directly supporting the rationale for the tetrahedron as a new paradigm for economic, political and social modeling and organization:

1. The VE constitutes an array of equilateral triangles. Each of the three vertexes of an equilateral triangle is 60-degrees (each of the 4 vertexes of the tetrahedron, each of the 4 triangular faces of the tetrahedron is an equilateral triangle).
2. The VE corresponds with the comprehensive coordination of nature's most economical, structural interrelationships employing 60-degree association and disassociation. Therefore, the tetrahedron, the prime structure and the least complex, should be optimally "comfortable" and enjoy optimal ease of movement (least resistance) and change within the VE.
3. The VE is four-dimensional—as is the conceptual tetrahedron. The tetrahedron is dimensionally compatible with the VE.
4. The commonly employed for systems analysis, 3-dimensional, 90-degree,

open-edged therefore infinite XYZ matrix cannot. Therefore, being unrecognizable and undetectable by analysis through the XYZ, nature's geometry remains largely conceptually "invisible" to our considerations.

5. The isotropic vector matrix is finite and omnidirectional. Its omnidirectional length is always defined by the sum-total of all physical and metaphysical energy of Universe. The XYZ matrix, being open-edged and therefore infinite, will fail to provide enduring satisfying results and conclusions.

6. The concept of the Cosmic Web implies that it be equilibrious and everywhere the same. The VE and the isotropic vector matrix meet both criteria.

7. Fuller discloses (makes "visible") a new phase of geometry that employs the invisible circuitry of nature. Solid-state physics discovered that certain metallic substances have electromagnetic, pattern-holding, shunting, route-switching, and frequency-valving regularities. Design employment of this knowledge and those substances resulted, for example, in the circuitry of the transistor. Similar insights have produced the silicon computer chip circuitry. As the topological tetrahedron of the VE rationality accounts all physical and metaphysical systems, and because the tetrahedron and the VE are prime aspects of the invisible circuitry of nature, then, does it not follow that metaphysical conceptioning, compatible with nature's circuitry and design, will result in better outcomes when applied to problem analysis and organizational design?

8. Equanimity as applied to humans means a mental or emotional stability or composure, a calmness, an equilibrium—prime qualities of peace. Just as we may approach ever closer, yet never reach, eternal integrity and perfection, we may at least open the doors to

much greater attunement and resonance with the equanimity of Universe and God. The cosmic circuitry and pathways are disclosed and available.

As mentioned earlier, the pyramid is conceptually “grounded” in the obsolete view of the world as being solid and static. As a consequence of that “grounding,” the pyramid has a top and a bottom, which is a convenient characteristic for portraying graphically our current (yet ancient) political, economic, and social systems. As a result of our discussion about conceptual (metaphysical) cosmic structuring, assignment of a top or bottom is an arbitrary human positioning and reflects a pre-Einsteinian view.

In the obsolete (pyramidal) system, wealth, power, and status are most abundantly present in the hands of the very few, who are at the top. Those closest to the bottom, the very many, have least access to wealth, power, and status.

Those at the top have always understood that knowledge is power, and, conversely, that ignorance bestows a condition of weakness. A proven and effective method of both gathering knowledge for the top and maintaining relative ignorance (powerlessness) at the lower levels, or strata, is to create specialists (in every field of knowledge) and the compartmentalization of knowledge—and then to organize the distribution of that knowledge, from the specialist upward toward the top, where it is collated and analyzed and put into the context of overview, or a comprehensive “picture” of the state of the whole (system).

As the lower levels of the pyramid are approached, because of specialization and the compartmentalization of knowledge, increasingly and proportionately, the “right hand doesn’t know what the left hand is doing.” As knowledge, following the rules and imperatives of the system, flows upward toward the top, it increasingly becomes more synthesized, analyzed, and contextualized—until finally at the

top it emerges as a relatively complete overview of the entire system. The overview from the top that integrated knowledge provides is a powerful and essential tool for control of the system to the advantage of the few who, guided by self-interest and competition, seek to apply that knowledge to their interests in maintaining the “status quo”—and, thereby, protecting and/or enhancing their privilege, wealth, status, and/or power.

This system holds that scarcity is nature’s design (i.e., not-enough-to-go-around); and, given such presumably limited and finite resources for survival (which are most abundantly and easily obtainable at and near the top) and given that “moving up the ladder of success” (moving higher toward the top, thus garnering more and more of the conditions propitious to evermore accrual of the needs to assured survival and highest level of comfort) often means “succeeding” by way of repeatedly emerging as the “winner” in the game of competition, the co-competitors lose, resulting in continual negative system perturbations, personal and social dis-ease, and the unrelenting focus on the struggle for survival—all of which makes the occurrence of spontaneous cooperation and episodes of peace incidental and momentary aberrations in the closed-orbital-cycle of a history and system, as derived from, and built upon, an erroneous belief in “natural” scarcity, and the necessity for competing with our fellow humans for the right to survive.

Retaining this obsolete system with its cyclical non-evolutionary re-enactments of history will ensure that the principles of full equality, equity, peace and fraternity, and universal rights to freedom, abundant life-support, and life as fully enriched through knowledge, will remain as only temporary and partially realized aspirations of humankind—despite often Herculean efforts to the contrary.

Before discussing the fine points and particulars regarding employment of the conceptual tetrahedron as a new model and format through

which systemic shortcomings may be addressed, it should be useful to our considerations to recap/summarize briefly the most salient features and tenets of the foregoing discussion:

1. The globally dominant, economic, political and social organizational/operational system is built upon erroneous assumptions and geometry, is inherently biased in favor of the few, perpetuates inequality, expects competition for survival, provides a rationale for (if not support for) the widely held belief in the inevitability of conflict and war, and holds that possibilities for an enduring and fecund global peace will remain an unreachable and utopian dream. Humanity's continued reliance on this system increasingly threatens our very survival and is, therefore, obsolete.

2. The application of general systems theory (GST) to any constellation of problems allows for strategic comprehensivity of consideration, and it provides the inherent and potential capability and capacity to discover event relationships and trendings that may portend powerful and potentially catastrophic consequences—thereby providing planning opportunities to avoid or ameliorate negative outcomes. Its characteristics of bringing any local scheme of generalized system events (within a whole) provides relationships between the four items.

3. The tetrahedron is the basic structural unit of Universe—one quantum. It is a form of energy package. The rational energy quantum of physics and the topological tetrahedron of the isotropic vector matrix omnirationally account for all physical and metaphysical systems.

4. The vector equilibrium and the isotropic vector matrix constitute the invisible circuitry of nature. The tetrahedron as a topological feature of that circuitry system is a circuit “module” of the system.

5. The vector equilibrium is the eternal metaphysical conceptuality model, called the equanimity model, and the equanimity model permits metaphysically conceptual think-ability. In the equanimity model, the physical and metaphysical share the same design.

6. Equilibrium between positive and negative is zero. The vector equilibrium is the true zero reference. Zero pulsation in the vector equilibrium is the nearest approach to eternity and god—and the zero phase of conceptual integrity in the pulsations of positive and negative asymmetries propagates the differentials of consciousness.

7. The eternally referential centrality at zero of the equanimity model ever more inclusively and incisively demands and induces human consciousness of evolutionary participation to seek cosmic zero-perfection.

8. Conceptually, equanimity in terms of a human condition means a mental or emotional stability or composure, a calmness, an equilibrium—prime qualities of peace.

Therefore, intuitively and rationally, the conceptual tetrahedron presents itself as both an alternative “natural” organizational system/structure and an information-processing “circuit.” It has no top and no bottom; and each of the functioning processing nodes/knots (the four vertices) is co-equal, co-informing, and non-hierarchical.

In Fuller's book, *Utopia or Oblivion* (1969), he proposes the creation of a World Game:

To start with, here is an educational bombshell: Take from all of today's industrial nations all their industrial machinery and all their energy-distributing networks, and leave them all their ideologies, all their political leaders, and

all their political organizations and I can tell you that within six months two billion people will die of starvation, having gone through great pain and deprivation along the way.

However, if we leave the industrial machinery and their energy-distribution networks and leave them also all the people who have routine jobs operating the industrial machinery and distributing its products, and we take away from all the industrial countries all their ideologies and all the politicians and political machine workers, people would keep right on eating. Possibly getting on a little better than before.

The fact is that now—for the first time in the history of man, for the last ten years—all the political theories and all the concepts of political functions, in any other than secondary roles as housekeeping organizations, are completely obsolete. All of them were developed on the you-or-me basis. This whole realization that mankind can and may be comprehensively successful is startling.

In pursuance of this theme...we are going to undertake...a very extraordinary computerized program to be known as “How to Make the World Work.” ... We are going to introduce the many variables known to be operative in economics. We will store all the basic data in the machine’s memory bank; where and how much of each class of the physical resources; where are the people, what are the trendings—all kinds of trendings of world man? Next we are going to set up a computer feeding game, called “How Do We Make the World Work”... We will bring people from all over the world to play it. ... If a team resorts to political pressures to accelerate their advantages and is not able to wait for the going gestation rates to validate their theory they are apt to be in trouble. When you get into politics you

are very liable to get into war. War is the ultimate tool of politics. If war develops, the side inducing it loses the game.

Essence of the world’s working will be to make every man able to become a world citizen and able to enjoy the whole earth, going wherever he wants at any time, able to take care of all the needs of all his forward days without any interference with any other man and never at the cost of another man’s equal freedom and advantage. I think the communication problem—of “How to Make the World Work”—will become extremely popular the world around.

... “The game” will be hooked up with the now swiftly increasing major universities information network. This network’s information bank will soon be augmented by the world-around satellite-scanned live inventorying of vital data. Spy satellites are now inadvertently telephotoing the whereabouts and number of beef cattle around the surface of the earth. The exact condition of all the world’s crops is now simultaneously and totally scanned and inventoried. The interrelationship of the comprehensively scanned weather and the growing food supply of the entire earth are becoming manifest.

In playing “the game” the computer will remember all the plays made by previous players and will be able to remind each successive player of the ill fate of any poor move he might contemplate making. But the ever-changing inventory might make possible today that which would not work yesterday. Therefore, the successful stratagems of the live game will vary from day to day. The game will not become stereotyped.

If a player resorts to political means for the realization of his strategy, he may be forced ultimately to use the war-wagering

equipment with which all national political systems maintain their sovereign power. If a player fires a gun—that is, if he resorts to warfare, large or small—he loses and must fall out of the game.

The general-systems-theory controls of the game will be predicated upon employing within a closed system the world's continually updated total resource information in closely specified network complexes designed to facilitate attainment, at the earliest possible date, by every human being of complete enjoyment of the total planet earth, through the individual's optional traveling, tarrying, or dwelling here and there. This world-around freedom of living, work, study, and enjoyment must be accomplished without any individual interfering with another and without any individual being physically or economically advantaged at the cost of another.

Whichever player or team first attains total success for humanity wins the first round of the gaming. There are alternative ways of attaining success. The one who attains it in the shortest time wins the second round. Those who better the record at a later date win rounds 3, 4, and so on.

All the foregoing objectives must be accomplished not only for those who now live but for all coming generations of humanity. How to make humanity a continuing success at the earliest possible moment will be the objective. The game will also be dynamic. The players will be forced to improve the program—failure to improve also results in retrogression of conditions. Conditions cannot be pegged to accomplishment. They must also grow either worse or better. This puts time at a premium in playing the game.

Major world individuals and teams will be asked to play the game. The game cannot

help but become major world news. ... the game will be visibly developed and may be live-televised the world over by a multi-Telstar relay system.

The world's increasing confidence in electronic instrumentation in general—due to the demonstrated reliability of its gyrocompasses, and its “blind” instrument landings of airplanes at night in thick fog, and confidence in opinion-proof computers in particular—will make “world game” playing of fundamental and spontaneous interest to all of humanity.

Ultimately its most successful winning techniques will become well known around the world, and as the game's solutions gain world favor, they will be spontaneously resorted to as political emergencies accelerate.

Nothing in the game can solve the problem of two men falling in love with the same girl, or falling in love with the same shade under one specific tree. Some are going to have to take the shade of another equally inviting tree. Some may end up bachelors. Some may punch each other's noses. For every problem solved a plurality of new problems arise to take their place. But the problems need not be those of physical and economic survival. They can be perplexing and absorbing in entirely metaphysical directions such as those which confront the philosophers, the artists, poets, and scientists.

The game must, however, find ways in which to provide many beautiful shade trees for each—that is to say a physical and economic abundance adequate for all. There will, of course, have to be matchings of times and desires, requiring many initial wait-listings. As time goes on, however, and world-around information becomes available, the peaks and valleys of men's total time can be ever-improvedly smoothed

out. Comprehensive coordination of bookings, resource, and accommodation information will soon bring about a 24-hour, world-around viewpoint of society which will operate and think transcendently to local “seasons” and weathers of rooted botanical life. Humanity will become emancipated from its mental fixation on the seven-day-week frame of reference.

... It is my intention to initiate on several occasions in a number of places anticipatory discussion of the necessary and desirable parameters to establish for playing the world game.¹²

In the more than 25 years that have elapsed since Fuller’s proposal to establish the game, we have seen vast information and computer resources come online, including the World Wide Web, which is now most often referred to as the internet. This explosion of capability and Fuller’s requirement that we wait for the going gestation rates to test theories—in addition to the fact that

I have been considering the game startup for all of those years—leads me to make the considered and intuitive proposal that now is the right time to fully develop and begin the game.

While Fuller never explicitly nominated or discussed the conceptual tetrahedron as an organizational framework and information-processing circuit, his work is replete with clues and inferences about it—which led me to begin developing, thinking about, and considering the tetrahedron as a model for organization, strategic thinking and planning, and information processing, as they might be applied to the concept of the game. (See Figures 6a and 6b.)

The internet provides possibilities for a truly global game linking players anywhere in the world to each other and to the vast information and data resources accessible through the internet. The conceptual tetrahedron may provide the system, structure, and processing capability requisite to bring the game into functional and operational being.

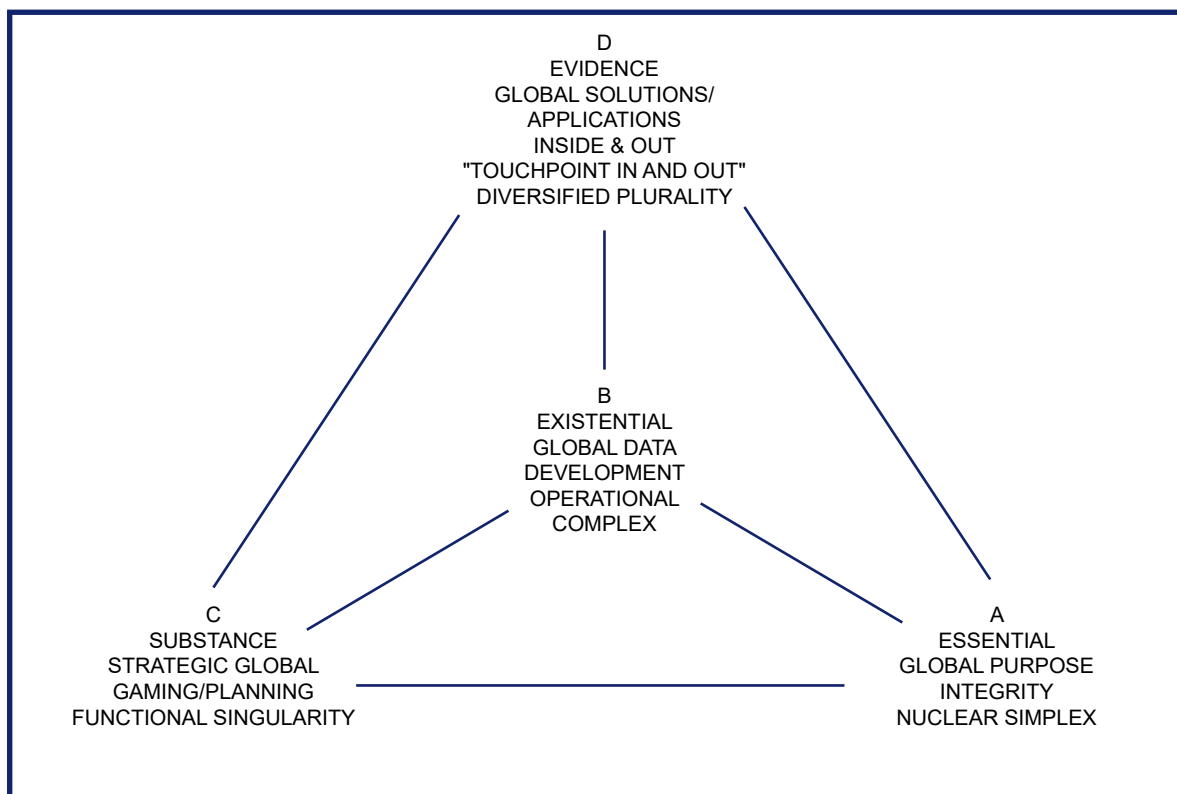


Figure 6a. “TETWORLD” Peace through Development Game, Diagram 1

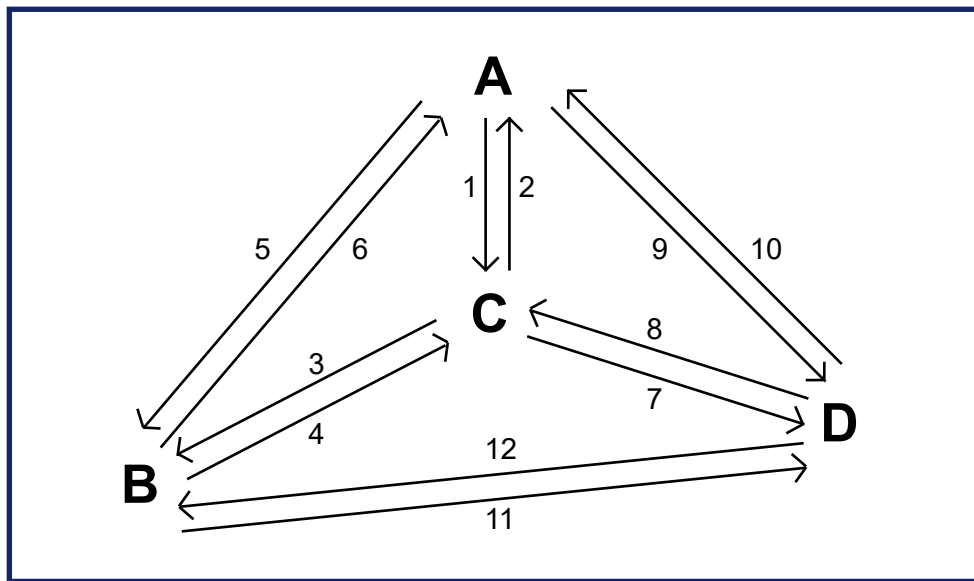


Figure 6b. “TETWORLD” Peace through Development Game, Diagram 2

Node A – Essential: Vectors 1, 5, and 9 flow (radiate) out to and inform nodes B, C, and D.

Vector 1 (from A to C): Prospectus for growth and development in terms of capacitance (nuclear integrity).

Vector 5 (from A to B): Continuous resonance of operational capacitance.

Vector 9 (from A to D): Concept of dualism of “touch point” between the whole and the world—the “bottom line.”

Node B – Existential: Vectors 4, 6, and 11 flow (radiate) out to and inform nodes A, C, and D.

Vector 4 (from B to C): Fast plug-in contingency software/options for catastrophic events.

Vector 6 (from B to A): Continuous conservation of the nuclear ideal.

Vector 11 (from B to D): Regulation of “push-button” automation of responses to reiterative demands from in-house and “out there.”

Node C – Substance: Vectors 2, 3, and 7 flow (radiate) out to and inform nodes A, B, and D.

Vector 2 (from C to A): Strategies for optimization in terms of intent and purpose/capitance.

Vector 3 (from C to B): Continuous update on world conditions—the “field.”

Vector 7 (from C to D): Instructions regarding “packaging” in terms of specific strategies; scripts for ameliorating or reconstructing undesirable situations, anywhere and everywhere.

Node D – Evidence: Vectors 8, 10, and 12 flow (radiate) out to and inform nodes A, B, and C.

Vector 8 (from D to C): Versatility index in terms of multiple combinations and permutations of inventory items; i.e., “ability to respond” to a variety of demands—in house.

Vector 10 (from D to A): In-house summary of world needs and potential for global re-groupings.

Vector 12 (from D to B): Capacitance to deal with or provide “inventory items” suggested by possibilities uncovered through heuristic research—the deviant occurrence leading to wider horizons.

Author's note: Part III of this article will explore game start-up more fully, as well as discuss the holographic qualities at macro and micro levels of the conceptual tetrahedron and how those qualities maintain non-hierarchical and co-equal attributes throughout the various system “levels” of organizational structure.

NOTES.....

1. Mark Siegmund, “Achieving Peace: A New Paradigm, Part II (Tetrahedron and the Game),” *International Journal of Humanities and Peace* 12, no. 1 (1996): 7-11.
2. R. Buckminster Fuller, *Synergetics: Explorations in the Geometry of Thinking* (New York, NY: MacMillan Publishing Co., Inc., 1975), https://archive.org/details/synergeticsexplo0000full_t1i6.
3. R. Buckminster Fuller, *Utopia or Oblivion: The Prospects for Humanity* ed. Jaime Snyder (Zurich, Switzerland: Lars Müller Publishers, 2008), <https://archive.org/details/utopiaoroblivion00rbuc>.
4. Fuller, *Synergetics*, xxi.
5. Fuller, *Synergetics*, 298–299.
6. Fuller, *Synergetics*, 332–335.
7. Fuller, *Synergetics*, 135.
8. Fuller, *Synergetics*, 149–150.
9. Fuller, *Synergetics*, 152.
10. Fuller, *Synergetics*, 155.
11. Fuller, *Synergetics*, 159–160.
12. Fuller, *Utopia or Oblivion*, 203–207.
- * Fuller, *Synergetics*, 334.
- † Fuller, *Synergetics*, 243.
- ‡ Fuller, *Synergetics*, 322.
- ** Fuller, *Synergetics*, 118.
- †† Fuller, *Synergetics*, 139. Ω