527.00 Dimension

527.01   There is no dimension without time.

527.02   Dimension is experiential; it is of time; ergo, must be physical; ergo, must be energetic. Vector and tensor matrixes embrace all the elementary data governing the size dimensioning of the frequency and angle interactions in respect to an axis of reference and a cyclic norm.

527.03   Dimensions may be expressed only in magnitudes of time, energy, frequency concentrations, and angular modulations. What we call "length" is a "duration" of experience and is always measured in time.

527.04   The energetic juxtaposition of compression (radiation) and tension (gravity) provides dimension—the basis of "self" awareness or "other" awareness—of awareness of life itself.

527.05   Dimension may be universally and infinitely altered without altering the symmetrical relationship of the whole system.

527.06   All dimensions are simultaneously considerable.

527.07   All dimensions are definitively and intercoordinatably manifest in the isotropic vector matrix. (See Sec. 960.)
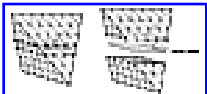
Fig. 527.08

527.08   **Convergence and Divergence:** We do not arrive at dimensionality by virtue of perpendicular or parallel assembly. Dimensionality in synergetics provides for assembly only by convergence and divergence. This accounts for the spontaneous and continued frustration of conventional mathematical accounting when confronted with the problem of assembling a nonpolarized, omnisymmetrical object by joining two identical halves of the multifrequenced, closest-sphere-packed tetrahedra, each of which has five similar facets—two of which are equiangled triangles, two of which are trapezoids, and the fifth is a nonequiedged parallelogram. Matching of any of these facets produces asymmetrical, polarized objects. One of the nonequiedged parallelograms must be precessionally rotated to cross the other at 90 degrees, where it will be seen that the converging-diverging patterns of the two halves are symmetrically realized. (See Secs. 260.50 and 417 and Fig. 527.08)
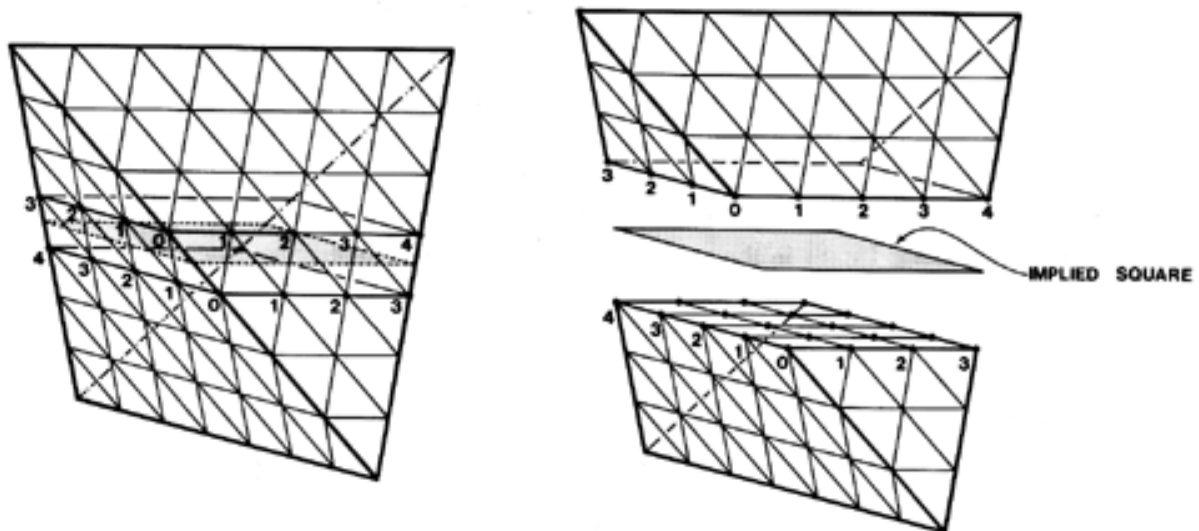
Fig. 527.08 Assembly by Convergence and Divergence: A regular tetrahedron may be divided into two identical halves by an implied square section. The two halves may be separated and reassembled by precessional rotation. This is an illustration of rotational symmetry. (See Fig. 417.01 and Loeb Contribution L.) For other examples of the evolution of "Chef's Cap" polyhedra, see Figs. 100.103 and 987.23B.

527.09   **Series vs Parallel Circuitry:** The difference between gravitation and radiation is analogous to the difference between parallel wiring and series wiring in electricity. Series wiring is like the wire-strung lights on an old-fashioned Christmas tree: If one light goes out, the whole string goes out. In parallel wiring, when one light goes out, the other lights remain operative. This is a demonstration of integration and disintegration. *Series* wiring is a disintegrative system, an open system. *Parallel* wiring is an integrative system, a closed system. It is not the "parallelism" that matters but the fact that the circuit is closed. The word *parallel* came into use only because of the diagram first used to demonstrate the principle as well as the fact that the closed-circuit wire is conveniently doubled back upon itself and bound into one "lead" for house-wiring purposes. The fact that the vectors are drawn in parallel is only a convenience for the construction industry. The same-length vectors-ergo, the same energy magnitude involvement-used correctly, can provide either function. Here we have the convergent integration and divergent disintegration language of synergetics identified in the language of electricity. (See Secs. 260.20, 541.05, 647, Fig 527.09, and Loeb Contribution, N.)

527.10   **Three Unique Dimensional Abundances**

527.11   Polar points, nonpolar points, areas, and lines have uniquely different cosmic abundances. In addition to every system's two polar points, there are three uniquely coexistent topological characteristics. For every one nonpolar point there are always two areas and three lines, and there are always an even number of each:

$\times 1$ $\times 2$ $\times 3$

 Nonpolar points -- Areas -- Lines

527.20   **Nonpolar Points**

527.21   Polar points are two dimensional: plus and minus, opposites.

527.22   Nonpolar points, or localities, are four-dimensional—there is the inside-out (i.e., concave and convex) dimension and three symmetrically interacting, great-circle- ways-around—producing spherical octation, with eight tetrahedra having three internal (central) angles and three external spherical surface triangles' angles each.
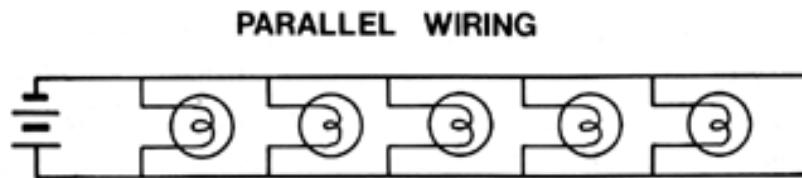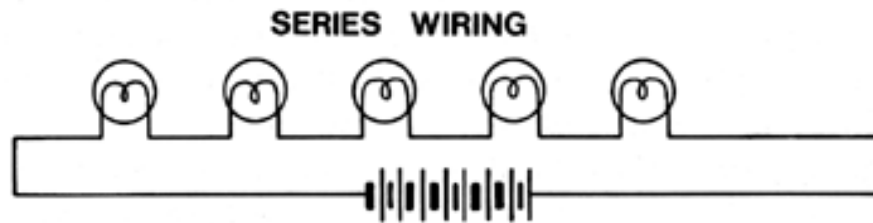
Fig. 527.09 Convergent Integration and Divergent Disintegration in the Language of Electricity: "Series" wiring is disintegrative, an open system. "Parallel" wiring is integrative, a closed system.

527.23   The spherical octahedron's three inside-out, symmetrically unique diameters and the three unique external chords produce two unique sets of three nonparallel lines each, but with one set coordinating at 60 degrees and the other set coordinating at 90 degrees.

527.24   The nonpolar points are not fixable or structurally stabilized until occurring at the crossings of a three-way-great-circled-triangular-spherical-surface grid, generated symmetrically in respect to the polar axis of the system.

527.25   **Nonpolar Points:** All systems have poles—ergo, spin axes—ergo, they are polarizably identifiable. Nonpolarized simply means that the spin axis is unrecognized under the conditions considered. There is no such thing as a nonpolarized point, because if you tuned in the subvisible system—appearing only as a directionally positioned microsomething-to visible comprehension, you would find that as a system it has poles and that it has a potential of seven alternately employable poles (see Sec. 1040). So we may call a "point" a focal center—i.e., a "noise" with a direction—but it is inherently an as-yet undistinguished system, with all of the latter's characteristics (see Sec. 264.01).

527.26   There is inherent polarity in all observation, which always introduces the additive twoness:

Nonpolarized = unrecognized

Focal event = infratunable system

527.30   **Areas**

527.31   The octahedron's planar system is four-dimensionally referenced, being parallel to the four symmetrically interacting planes of the tetrahedron, vector equilibrium, and isotropic vector matrix. *Planar* and *nonpolar-vertex four-dimensionality* accommodates and imposes the four positive, four negative, and neutral (nineness) of the operational interwave behavior of number.

527.40   **Lines**

527.41   *Linear,* as manifest in the tetrahedron, the simplest structural system of Universe, is six-dimensional, providing for the six degrees of universal freedom and the operational six-wave phenomenon of number.

527.50   **Fiveness: Five-Dimensionality**

527.51   We know that the sphere points on the outer shell of the vector equilibrium and the icosahedron (between which states the pulsative propagation of electromagnetic waves oscillates) isolate the icosahedron and the vector equilibrium, but the number of points remains the same: $10F^2 + 2$.

527.52 $10F^2$ —which *ten,* being divisible by the concave-convex twoness, brings in the prime number *five* to the hierarchy of low-order prime numbers characterizing synergetics. The polar twoness is the additive twoness. The twoness in the ten is the basic multiplicative twoness; it is the concave-convex unity-is-twoness inherent in the nuclear sphere and in the number of outer spheres in the vector-equilibrium-icosahedron's regenerative system, which always equates as $10F^2 + 2$.

527.53   The fundamental fiveness is introduced with the *initial* (frequency is l/2, i.e., in equilibrium, that is, poised between 1/2 positive and 1/2 negative) vector equilibrium interiorly defining the nuclear sphere where the vector equilibrium's volume = 2.5 (i.e., 2) and the two-frequency's eightfold volumetric increase is 20.

527.54   Five-dimensionality is realized by the pulsation of the positive-negative VE—Icosa—VE—as 2.5—five. (Where VE stands for vector equilibrium and Icosa stands for icosahedron. Compare the interaction of the 31 great circles of the icosahedron and the 25 great circles of the vector equilibrium. See Sec. 1042.)

527.60   **Dimensionality and Constant Relative Abundance**

527.61   The rhombic dodecahedron six is entirely outside, but twelvefoldedly tangential to, the initial sphere. The cube, part inside and part outside the sphere, is three. The octahedron, mostly outside but partly inside the nuclear sphere, is four. Vector equilibrium is 2.5 and is entirely inside the sphere, with its 12 external vertexes congruent with the surface of the nuclear sphere at the same 12 points of tangency inside the sphere as the 12 points of the same initial sphere at which the rhombic dodecahedron is externally tangential; and the initial vector equilibrium's central vertexes are congruent with the volumetric center of the initial, i.e., nuclear sphere.

527.62   It was our synergetics' discovery and strategy of taking the two poles out of Euler's formula that permitted disclosure of the omnirational, constant relative abundance of Vs, Fs, and Es, and the disclosure of the initial additive twoness and multiplicative twoness, whereby the unique prime-number relationships of the prime hierarchy of omnisymmetric polyhedra occurred, showing tetra= I; octa=2; cube=3; VE or Icosa=5.

527.70 Primitive Dimensionality

527.701   In synergetics *primitive* means systemic conceptuality independent of size. (Compare Sec. 1033.60.)

527.702   Geometers and "schooled" people speak of length, breadth, and height as constituting a hierarchy of three independent dimensional states—"one-dimensional," "two-dimensional," and "three-dimensional"—which can be conjoined like building blocks. But length, breadth, and height simply do not exist independently of one another nor independently of all the inherent characteristics of all systems and of all systems' inherent complex of interrelationships with Scenario Universe.
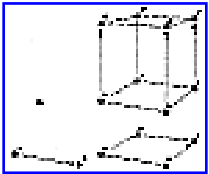
Fig. 527.703

527.703   The educational authorities in the art and science of "plane" and "solid" geometry disregard the *environmental otherness:* They assume an infinitely extendible imaginary plane upon which they mark apart two infradimensional imaginary points A and B between which they can draw an imaginary shortest straight line whose "length" AB constitutes their academic mathematicians' first-dimensional state. They then mark apart on the same infinite imaginary plane third and fourth points C and D, which are then linearly interconnected by another "straight" line CD in the same imaginary plane with, parallel to, and at an AB distance from, line AB, with a third line CA drawn in the same plane perpendicular to line AB at A, and a fourth line DB in the same imaginary plane drawn perpendicular to line AB at B, whereby either of the lines CA or DB constitutes the "breadth," which is the educators' second-dimensional state. They then erect four AB—long lines perpendicular to the first imaginary plane at points A', B', C' and D', respectively. They then draw the imaginary straight lines A'B', B'C', C'D', and D'A'. With all this so-called construction-which would collapse in the presence of gravitational reality—they have now attained their third-dimensional state of "height" above their two- dimensional square plane base. This assumedly produces three-dimensional reality, which by virtue of their constructional strategy suggests to them that reality is only cubically measurable or comprehensible.

527.704   There is also trouble with the word *fundamental.* It means foundational when there are no foundations . . . no two-dimensional planar base. The Earth and other objects are co-orbiting the Sun at 60,000 miles per hour and are gravitationally tethered to one another. The word *foundation* implies an impossible standing-still-somewhere in Universe . . . on a solid and square or planar base.
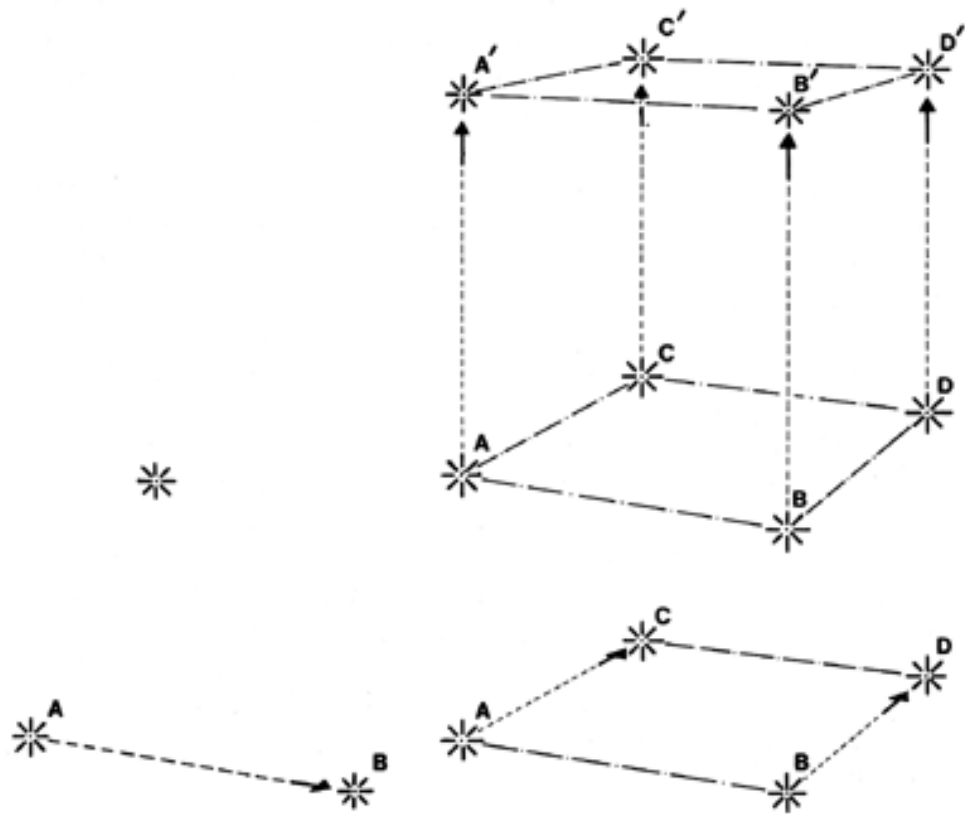
Fig 527.703 Imaginary Three Dimensionality: Parallel and perpendicular construction strategies of "plane" and "solid" geometry assume that reality can be measured only in cubes.

527.705   We may use the word *primitive* only to describe the initial selfstarting conditions of awareness and think-about-ability of the minimum essential components of any evolutionary system's divergent or convergent considerability. Thus the primitive conceptual angle as one myopically viewed corner of the 12 corners of the minimum system has greater meaning than the expression *fundamental particle* employed by the high-frequency research physicists. The statements of this paragraph are strictly within the concerns of epistemography.

527.706   Infinity is only a consequence of subdividing finity. Because synergetics has conceptuality independent of size, it permits—indeed, requires—systemic conceptuality before the subdividing commences. There is no a priori size. There is no experimentally demonstrable systemic one-dimensional line extending to infinity. Size commences only with subdivision, with frequency. Subdivision may be considered as potentially limitless, provided infinite time. But time is always a special case limited characteristic of special case time-size systems. Time is not generalizable. Generalized principles are all eternal. Eternal is not a whole lot of time. Eternal is independent of and devoid of time. Infinity is micro rather than macro-hence the difficulty of research physicists in their search for the one last "building block" or fundamental particle.

527.707   The minimum family of inherent systemic omnicosmic interrelationships is inherently primitive and eternal. Primitive dimensionality is expressible only in terms of the interproportionality of the components of whole minimum systems—ergo, in prefrequency primitive tetravolume proportionality and the latter's primitive topological characteristics. There can be no partial systems. Systems can be divided multiplyingly only into whole systems.

527.708   There is a cosmic hierarchy of primitively symmetric systemic states of intertransformability or interassociabilities of prime polyhedra. (See Sec. 982.62.)

527.71   **Substance Is Systemic**

527.711   People think of a point as the most primitive thing with which to initiate geometrical conceptioning. A point is a microevent of minutiae too meager, they say, to be dignified with dimensionality: Ergo, they assume a point to be only an "imaginary fix." But speaking in the experiential language of science, whatever is optically point-to-able is a substance, and every substance has insideness and outsideness—ergo, is systemic: Ergo, all point-to-ables can never be less than the minimum system: the tetrahedron. Points always amplify optically to be identifiable as systemic polyhedra.

527.712   All conceptual consideration is inherently four-dimensional. Thus the primitive is a priori four-dimensional, being always comprised of the four planes of reference of the tetrahedron. There can never be any less than four primitive dimensions. Any one of the stars or point-to-able "points" is a system-ultratunable, tunable, or infratunable but inherently four-dimensional.