934.00 **Unzipping Angle**

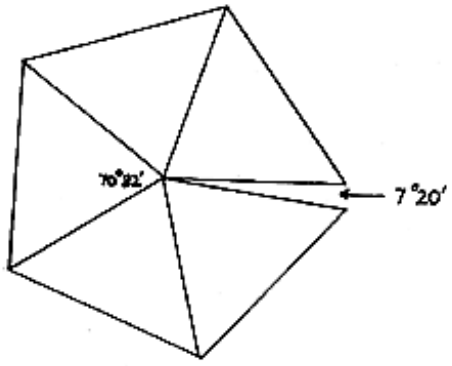
934.01 If we take three columns of tetrahelixes and nest them into one another, we see that they also apparently internest neatly as with a three-part rope twist; but upon pressing them together to close the last narrow gap between them we discover that they are stubbornly resisting the final closure because the core pattern they make is one in which five tetrahedra are triple-bonded around a common edge axis—which angular gap is impossible to close.


Fig. 934.02

934.02 Five tetrahedra triple-bonded to one another around a common edge axis leave an angular sinus[2] of 7° 20' as the *birth unzipping* angle of DNA-RNA behaviors. This gap could be shared 10 ways, i.e., by two faces each of the five circle-closing tetrahedra, and only 44 minutes of circular arc per each tetra face, each of whose two faces might be only alternatingly edge-bonded, or hinged, to the next, which almost- closed, face-toward-face, hinge condition would mechanically accommodate the spanned coherence of this humanly-invisible, 44-minutes-of-circular-arc, distance of interadherence. Making such a tetrahelix column could be exactly accomplished by only hinging one edge of each tetrahedron to the next, always making the next hinge with one of the two-out-of-three edges not employed in the previous hinge. Whatever the method of interlinkage, this birth dichotomy is apparently both *accommodated by* and *caused by* this invisible, molecular biologist's 1° 28' per tetra and 7° 20' per helical-cycle hinge opening.

(Footnote 2: Sinus means *hollow* or *without* in Latin.)

934.03 Unzipping occurs as the birth dichotomy and the new life breaks off from the old pattern with a perfect imprint and repeats the other's growth pattern. These helixes have the ability to nest by virtue of the hinge-spring linkage by which one is being imprinted on the other. Positive columns nest with and imprint only upon positive helix columns and negative helix columns nest with and imprint their code pattern only with and upon negative helix columns. Therefore, when a column comes off, i.e., unzips, it is a replica of the original column.



70° 32'
X5
352° 40'

360° 00'
−352° 40'
7° 20' Unzipping angle

Fig. 934.02.

934.04 We know that the edge angle of a tetrahedron is 70° 32', and five times that is 352° 40', which is 7° 20' less than 360°. In other words, five tetrahedra around a common edge axis do not close up and make 360 degrees, because the dihedral angles are 7° 20' short. But when they are brought together in a helix—due to the fact that a hinged helix is a coil spring—the columns will twist enough to permit the progressive gaps to be closed. No matter how long the tetrahelix columns are, their sets of coil springs will contract enough to bring them together. The backed-up spring tries constantly to *unzip* one nesting tetrahedron from the others of which it is a true replica. These are only synergetical conjectures as to the theoretical explanations of otherwise as yet unexplained behaviors of the DNA.

935.00 **Octahedron as Conservation and Annihilation Model**

[935.00-938.16 Annihilation Scenario]

935.10 **Energy Flow and Discontinuity**

935.11 Though classic science at the opening of the 18th century had achieved many remarkably accurate observations and calculations regarding the behaviors of light, individual scientists and their formal societies—with one notable exception-remained unaware that light (and radiation in general) has a speed. Ole Roemer (1644—1710), both Royal Astronomer and Royal Mathematician of Denmark, was that exception. Roemer's observations of the reflected light of the revolving moons of the planet Jupiter made him surmise that light has a speed. His calculations from the observed data very closely approximated the figure for that speed as meticulously measured in vacuo two centuries later, in the Michelson-Morley experiment of 1887. Though Roemer was well accredited by the scientists and scientific societies of Europe, this hypothesis of his seemed to escape their cosmological considerations. Being overlooked, the concept did not enter into any of the cosmological formulations (either academic or general) of humanity until the 20th century.

935.12 Until the 20th century scientists in general assumed the light of all the stars to be instantaneously and simultaneously extant. Universe was an instantaneous and simultaneous system. The mid-19th-century development of thermodynamics, and in particular its second law, introduced the concept that all systems always lose energy and do so in ever-increasingly disorderly and expansive ways. The academicians spontaneously interpreted the instantaneity and simultaneity of Universe as requiring that the Universe too must be categorized as a system; the academicians assumed that as a system Universe itself must be losing energy in increasingly expansive and disorderly ways. Any expenditure of energy by humans on Earth—to whom the stars in the heavens were just so much romantic scenery; no more, no less—would hasten the end of the Universe. This concept was the foundation of classical conservatism—economic, political, and philosophical. Those who "spent" energy were abhorred.

935.13 This viewpoint was fortified by the hundred-years-earlier concept of classical science's giant, Isaac Newton, who in his first law of motion stated that all bodies persist in a state of rest, or in a line of motion, except as affected by other bodies. This law posits a cosmic norm of *at rest:* change is abnormal. This viewpoint as yet persists in all the graphic-chart coordinates used by society today for plotting performance magnitudes against a time background wherein the baseline of "no change" is the norm. Change is taken spontaneously as being inherently abnormal and is as yet interpreted by many as being cause for fundamental social concern.

935.14 With the accurate measurement, in 1887, of the speed of light in vacuo, science had comprehensively new, experimentally redemonstrable challenges to its cosmogony and cosmology. Inspired by the combined discoveries of the Brownian movement, black body radiation, and the photon of light, Einstein, Planck, and others recognized that energy-as-radiation has a top speed—ergo, is finitely terminaled—but among them, Einstein seems to have convinced himself that his own cosmological deliberations should assume Boltzmann's concept to be valid—ergo, always to be included in his own exploratory thoughts. There being no experimental evidence of energy ever being created or lost, universal energy is apparently conserved. Wherefore Boltzmann had hypothesized that energy progressively and broadcastingly exported from various localities in Universe must be progressively imported and reassembled at other localities in Universe.

935.15 Boltzmann's concept was analogous to that upon which was developed the theory and practice of the 20th-century meteorological weather forecasting, which recognizes that our terrestrial atmosphere's plurality of high-pressure areas are being progressively exhausted at different rates by a plurality of neighboring low-pressure areas, which accumulate atmospheric molecules and energy until they in turn become new high- pressure areas, which are next to be progressively exhausted by other newly initiated low- pressure areas. The interpatterning of the various importing-exporting centers always changes kaleidoscopically because of varying speeds of moisture formation or precipitation, speeds and directions of travel, and local thermal conditions.

935.16 Though they did not say it that way, the 20th-century leaders of scientific thinking inferred that physical Universe is apparently eternally regenerative.

935.17 Einstein assumed hypothetically that energies given off omnidirectionally with the ever-increasing disorder of entropy by all the stars were being antientropically imported, sorted, and accumulated in various other elsewheres. He showed that when radiant energy interferes with itself, it can, and probably does, tie itself precessionally into local and orderly knots. Einstein must have noted that on Earth children do not disintegrate entropically but multiply their hydrocarbon molecules in an orderly fashion; little saplings grow in an orderly way to become big trees. Einstein assumed Earthian biology to be reverse entropy. (This account does not presume to recapitulate the actual thought processes of Einstein at any given point in the development of his philosophy; rather it attempts to illustrate some of the inevitable conclusions that derive from his premises.)

935.18 What made it difficult for scientists, cosmologists, and cosmogonists to comprehend about Boltzmann's concept—or Einstein's implicit espousal of it—was the inherent *discontinuity* of energy events implicit in the photon as a closed-system package of energy. What happened to the energy when it disappeared? For disappear it did. How could it reappear elsewhere in a discontinuous system?

935.20 **Precessional Transformation in Quantum Model**

935.21 One quantum of energy always consists of six energy vectors, each being a combined push-pull, positive-negative force. (See Secs. 600.02 through 612.01 and Fig. 620.06.) Twelve unique forces: six plus and six minus. Six vectors break into two sets of three each. Classical engineers assumed that each action had its equal and opposite reaction at 180 degrees; but since the discovery of the speed of light and the understanding of nonsimultaneity, we find that every action has not only a reaction but also a *resultant.* Neither the reaction nor the resultant are angularly "opposite" in 180- degree azimuth from the direction of action. The "equal and opposite" of classical engineering meant that both action and reaction occurred in opposite directions in the same straight line in the same geometrical plane. But since the recognition of nonsimultaneity and the speed of light, it has been seen that action, reaction, and resultant vectors react omnidirectionally and precessionally at angles other than 180 degrees. (See Fig. 511.20.)

935.22 As we enter the last quarter of the 20th century, it is recognized in quantum mechanics and astrophysics that there could never have existed the traditionally assumed, a priori universal chaos, a chaos from which it was also assumed that Universe had escaped only by the workings of chance and the long-odds-against mathematical probability of a sequence of myriad-illions of coincidences, which altogether produced a universal complex of orderly evolutionary events. This nonsense was forsaken by the astrophysicists only a score of years ago, and only because science has learned in the last few decades that both the proton and the neutron always and only coexist in a most orderly interrelationship. They do not have the same mass, and yet the one can be transformed into the other by employing both of their respective two energy side effects; i.e., those of both the proton and the neutron. Both the proton and the neutron have their respective and unique two-angle-forming patterns of three interlinked lines, each representing their action, reaction, and resultant vectors.

935.221 **Coming-Apart Phase: Coming-Apart Limit:** The astrophysicists say that no matter how far things come apart, fundamentally they never come farther apart than proton and neutron, which always and only coexist.

Fig. 935.23

935.23 The names of the players, the positions they play, and the identifying letters they wear on the three-vector teams of proton and neutron, respectively, are identified as follows. The proton's three-vector team consists of

1. the *action* vector, played by its captain, the *proton,* wearing the letters BD;
2. the *reaction* vector, played by the *electron,* wearing the letters AD; and
3. the *resultant* vector, played by the *antineutrino,* wearing the letters BC.

The neutron's three-vector team consists of

1. the *action* vector, played by its captain, the *neutron,* wearing the letters A C;
2. the *reaction* vector, played by the *positron,* wearing the letters CD; and
3. the *resultant* vector, played by the *neutrino,* wearing the letters AB.

Either one of these two teams of three-vector events is identified in quantum mechanics as being a half-quantum (or one-half spin or one-half Planck's constant). When two half- quanta associate, they produce one unit of quantum. (See Sec. 240.65.) These two sets of three vectors each combine to produce the six vector edges of the tetrahedron, which is the minimum structural system of Universe: one quantum of energy thus becomes structurally and systematically conceptual. (See Fig. 935.23.) One quantum of energy equals one tetrahedron. Humanist writers and broadcasters take notice that science has regained conceptuality. Science's intertransformabilities and intercomplementarities are modelably demonstrable. The century-long chasm that has separated science and the humanities has vanished.

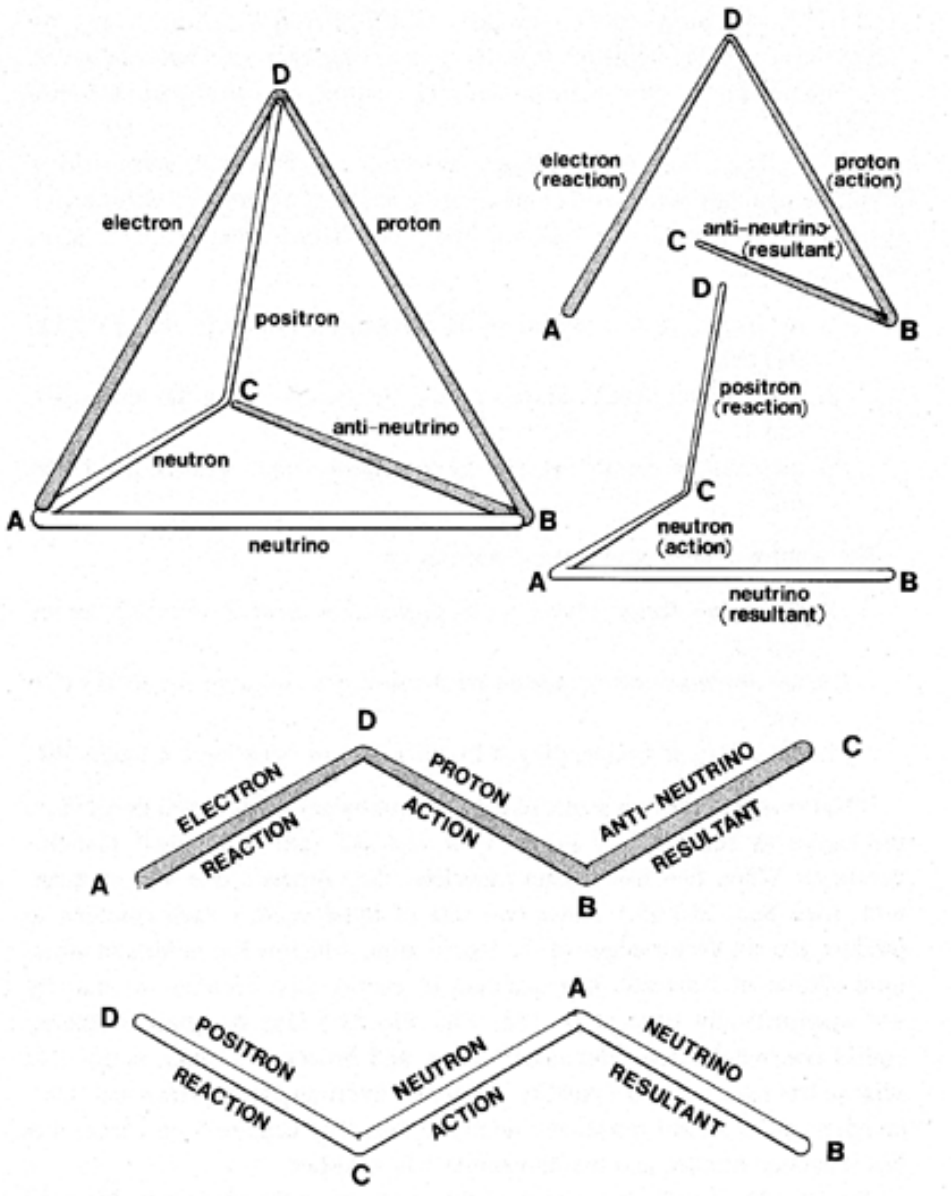


Fig. 935.23 Proton and Neutron Three-vector Teams: The proton and neutron always and only coexist as action vectors of half-quanta associable as quantum.

935.24 The tetrahedral model of the quantum as the minimum structural system of Universe is a prime component in producing the conceptual bridge to span the vast chasm identified by C. P. Snow as having for so long existed between the one percent of the world people who are scientists and the 99 percent of humanity comprehendingly communicated with by the writers in literature and the humanities. This chasm has been inadvertently sustained by the use of an exclusively mathematical language of abstract equations on the part of scientists, thus utterly frustrating the comprehension of the scientists' work by the 99 percent of humanity that does not communicate mathematically. This book, *Synergetics,* contains the conceptualizing adequate to the chasm-bridging task, and it does so in vectorially structured geometry and in exclusively low-order prime numbers in rational whole-number accounting.

935.25 As an instance of chasm-spanning between science and the humanities by conceptually transformative energy-quanta accounting, synergetics conceptually elucidates the Boltzmann import-export, entropy-syntropy transaction and the elegant manner in which nature accommodates the "hidden ball" play of now-you-see-it-now-you-don't energy transference.

Next Scetion: 936.00
