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THEOREMS, FUNDAMENTAL LAWS AND RESUMEES

The Evolution of Energons

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Theorems, Fundamental Laws and Resumees

Theorems 1 to 5

1
As opposed to all other manifestations of energy, i.e. the capacity to do work and the losses incurred during transformations and when meeting resistance, life is a process whose volume and potency has steadily increased since its inception ca. 4 billion years ago. The totality of the material sustaining this development, along with all the energetic transformations involved, are termed the life flow.

2
A process characterized by increasing potency and volume can only take place via spatio-temporal structures whose central feature is to gain and harness more useful energy from the environment than their overall activity utilizes. Every structure with this capability is termed an energon. Today and in the future, and in all corners of the universe – as long as currently valid natural laws remain in effect – such a process can only take place via energons.

3
Energons include plants, animals, professional entities and business organizations along with luxury structures. The energon concept is relative. A structure can prove to be an energon in one environment but not in another. Each energon is characterized by its fit into the environment, which gives it the ability to sustain and enhance the life flow.

4
Every life form including human beings and the artificial structures they create are functional elements of an energetic development. Humans and other life forms are not the goal behind or reason for this process, but rather its prerequisite.

I First Fundamental Law

The life process, an energetic development of increasing volume and potency, can only proceed via structures – the energons – having a positive energy balance. These are neither the goal behind nor the reason for this process, but rather the prerequisite; they are not the purpose but rather the means and the underlying cause. The structure of plant and animal bodies finds its extension in the professional entities and business organizations, along with the luxury items, formed by humans.

Theorems 5 to 12

5
If two energons – regardless of their appearance – are in competition, and if they resemble each other in every manner yet one is burdened with inoperative elements, then the other will be at an advantage.

6
Every energon is a functional entity, whereby the individual functional units are the agents that help fulfill necessary functions. Thus, in every energon – regardless of the number of elements it is composed of – functions are of primary importance and the functional units themselves are secondary.

7
It is irrelevant whether the functional units are firmly attached to the respective energon or not. The crucial criterion is that they deliver all the functions required of them.

8
The material from which a functional unit is composed is irrelevant as long as it delivers the required function.

9
The ways and means by which the parts of an energon are developed are unimportant. Only the result counts: it must prove to be durable and make the energon competitive.

10
All other capabilities being equal, in the struggle for an active energy balance, those energons that fulfill their functions by expending the least energy will gain the upper hand.

11
All other capabilities being equal, precision in fulfilling function promotes the competitiveness of energons – as long as the required measure is not exceeded.

12
All other capabilities being equal, the competitively successful energon will be the one whose performance over time most closely approximates optimum efficiency. Speed may be the decisive component in the available arsenal of features, in particular when action and reaction speeds in the environment are involved, but in other cases may be inconsequential.

II Second Fundamental Law

Energons represent functional entities characterized by a common arsenal of features that is imperceptible to the senses yet quantifiable. They consist of functional units whose shape, behavior and material composition are irrelevant. Equally irrelevant are whether their components are firmly attached to one another or how they were formed. Crucial, however, are the costs they entail, the precision with which they perform their functions, and the speed with which this takes place. The parameters cost, precision and speed

variably influence efficiency and competitiveness in the phases of buildup, acquisition, inactivity, and suspension of function.

Theorems 13 to 18

13
The energy source determines the configuration of the functional units responsible for utilizing that source. In plants this is sunlight, in animals and humans organic structure, in professional entities and business organizations the market as the collective term for all current demand.

14
In order to maintain its structure and guarantee growth and in order to generate new energons, every energon must gain material from the environment. The shape and activity of the respective functional units will be determined, defined and controlled by the material source being exploited.

15
Every energon serves the life flow, whereby conditions become imposed that do not necessarily serve that individual energon. One such condition is that the life flow can only grow when the energons grow and either reproduce their own kind, produce another type or create luxury structures. The requisite functional units are controlling elements as well as elements that implement the control commands. Their spatio-temporal structure, i.e. their shape and behavior, is determined, defined and controlled by the task at hand.

16
Energons are subject to a wide range of disruptive and hostile environmental influences that either selectively or unselectively threaten their existence and their activities. In order to survive, they must have functional units that ward off, diminish or neutralize these influences. The shape and functioning of these elements are determined, defined and controlled by the configuration of the disturbances and threats that must be repelled.

17
Energons have the opportunity to transform beneficial and positive environmental forces into agents that help them reduce their own efforts or that enable them to perform specialized tasks that would otherwise be impossible. Additional functional units are almost always necessary in order to harness such auxiliary capabilities; their development is determined, defined and controlled by the forces that are to be harnessed.

18
Those energons created by humans take on an environmental dimension because they are utilized to gain pleasure, happiness and other comforts. The respective functional units and activities represent luxury structures that can considerably overstep the capacity of the individual energon. Their structure is determined, defined and controlled by the innate and acquired characteristics of human beings along with the accompanying environmental conditions.

III Third Fundamental Law

All energons exhibit six forms of engagement with the environment. First, they must appropriate more useful energy than they use in their totality. A positive energy balance is the basis for their existence. Second, they must gain substances that are suitable to maintain and reproduce the energon structure. Third, they must have control mechanisms of a type that promotes the growth of the energon's overall volume and therefore of the life flow. Fourth, they must be able to neutralize disruptive or hostile environmental influences to the extent that they can no longer impede the energon's activity. Fifth, it is advantageous for them to harness beneficial and positive environmental forces. Sixth, certain energons produce luxury structures. The configuration and behavior of the functional units necessary to carry out all these capabilities is determined by the respective task at hand and by the environmental factors against which they must act.

Theorems 19 to 24

19
Every energon requires functional units that bind all the subordinate elements to the overall energon either permanently or for the duration of their use. The structure of these cohesive units is determined, defined and controlled by the respective features of the elements that are to be bound, by the energon's activity, and by the environmental forces that are to be resisted.

20
In order to perform efficiently, energons require functional units that coordinate movements and processes. The necessary structure and activity of these units is determined, defined and controlled by the task at hand as well as by the features of the processes that must be coordinated.

21
A crucial factor for the energons' efficiency and competitiveness is that the various functional units hinder each other as little as possible, that they mutually simplify their tasks to the extent possible, and that each functional unit be adapted to the requirements of the overall energon with regard to costs, precision and speed. Different valuations, preferences and priorities must be considered if position or movement is involved. Moreover, this required equilibrium is influenced by the respective environmental conditions and by newly added functional units. All measures and additional structures that necessitate adjustment of this equilibrium are determined, defined and controlled by the overall energon and by the environmental conditions.

22
Maintaining the functionality of the functional units is obligatory for every energon. This forces on them a wide range of features to provide upkeep, to add and to remove, and to maintain order and security. The structure of these functional maintenance tools is determined, defined and controlled by the features of the elements that must be maintained as well as by the forces acting upon them.

23
Energons can only increase the potency and volume of the life flow when as many of them as possible are equipped with functional units designed to improve structure and behavior and therefore promote efficiency and competitiveness. Their form is determined, defined and controlled by the task at hand and by the energon type in which they are active.

24
Inoperative elements represent a burden for energons, but can still retain a positive effect on the life flow by providing new starting-points for further development. The form and function of the units necessary to remove or utilize them are determined, defined and controlled by the task at hand as well as by the make-up of the inoperative structure.

IV Fourth Fundamental Law

All energons exhibit six forms of internal engagement. First, the functional unit must be bound to the overall energon. Second, certain functional processes must be coordinated with others. Third, each functional unit must be coordinated with the remaining ones and with the energon as a whole. Fourth, the functional force of each functional unit must be maintained. Fifth, structures that promote improvement are necessary. Sixth, inoperative elements should not be a hindrance. The configuration and behavior of the functional units necessary to carry out all these capabilities is determined by the task at hand and by the features of the affected functional unit.

Theorems 25 to 32

25
The term energate refers to all entities that neither belong to nor serve the energon. An energate can be directly converted into a functional unit if an energon incorporates it and makes it into one. Additional possibilities of generating function are given when a functional unit gains new capabilities through altered circumstances or when several functional units combine into a new unit capable of performing a novel task.

26
New control mechanisms allow functional units to assume additional and different functions. Structural modifications also permit multifunctionality. Disadvantages of multifunctionality typically include reduced performance in the individual functions. The excessive incorporation of additional functions – functional enhancement – leads to functional overload, which can negatively influence the energon.

27
New capabilities can arise when a functional unit takes on a new function that differs from the original one and this new function becomes the primary one. The economic advantage of such a process is reduced development costs; the disadvantage, however, is that historical burdens often hinder the path to the technically optimal solution.

28
Functional overload within the energons hampers the formation or allocation of auxiliary units, yielding hierarchical structures. A second relief strategy is to transfer individual functions to new functional units; this creates increasing differentiation and specialization. A third possibility is to temporarily or permanently abandon insupportable functions.

29
Whenever the same functional tasks are required at numerous points of an energon, then functional partnerships or a general concentration of function in one organ are advantageous. Within the various types of function, the possibilities and limitations of centralization are dictated by the size of the respective functional space, the distances that must be bridged therein, and the available time.

30
In competition among energons, functional improvements and functional renewals are decisive tools to boost efficiency, i.e. to achieve tasks with greater precision and effective speed at minimal cost.

31
Internally, the reduction of poorly functioning or inoperative units within energons meets with resistance that burdens the energons and their individual development capacity. In reducing a function or totally eliminating hierarchic auxiliary structures, remaining functional rudiments can be transferred to other functional units; the latter incorporate these as enhanced function.

32
Differentiation and specialization involve evolutionary processes, whereby functional units assume additional functions beyond the original ones. This can lead to a division of or a change in function, again yielding functional units with only a single function. The process then begins anew. The more functional units an energon comprises, the more auxiliary capabilities are necessary, which themselves effect a bundling into new organs. In this manner, spiraling evolutionary processes lead to the fulfillment of ever new functions.

V Fifth Fundamental Law

Functions can only be effected by suitable material structures, making them into functional units. Some functional units can perform more than one function, other functions require more than one functional unit. The evolution of energons and the enhancement of their efficiency are characterized by expansion, over-burdening, shifts, dispersion, distribution, concentration, cooperation and reduction, whereby spiral processes can be distinguished.

Theorems 33 to 40

33
The selection of those energons most capable of increasing the volume and potency of the life flow takes place automatically via competition and can be further promoted by evolution-enhancing mechanisms. As life forms, humans use intelligence to replace natural with purposefully artificial selection criteria; this considerably accelerates the progressive efficiency of the energons. Every selection can act on positive or negative features. Eliminating selection leads to stagnated development.

34
Limiting factors play a key role in the evolution of energons. Structural elements can temporarily or permanently narrow the avenues for further development. Improvements must act on the functionally weakest sites in order to sufficiently boost efficiency and effectively improve competitiveness.

35
Energons are characterized by polarities in alignment that generally determine the overall direction of development. Their effective functional framework is substantially influenced by the energon's size and activity radius, by the continuity or discontinuity of the requisite functions, by the number of functional units, and by the measure of specialization or versatility necessary for the activity.

36
The evolution of energons relies on the cooperation inherent in newly formed hierarchical frameworks. Symbiosis and group formation create ever larger energons. By using force, exchanging capabilities or entering partnerships, energons can employ the services of other energons. In professional entities and business organizations, alongside luxury structures, it is even possible for the functional units of one energon to enter into a cooperation with other energons or their functional units.

37
Energon development is characterized by conflicting values that arise from the diverging interests between individuals, species and evolution as well as from the hierarchical framework. Moreover, in professional entities and business organizations, the innate and acquired behavior patterns of humans constitute distinctive values. Above all, these include metaphysical needs, aesthetic sensibility, morals and customs, as well as the pursuit of happiness.

38
The interdependencies that arise between energons strive toward equilibrium conditions. In individual habitats, this yields networks that become increasingly complex, intransparent and sensitive as the number of energons per unit surface area increases.

39
Energons can increase their power base by artificially changing the environmental conditions to their advantage rather than by adapting to these conditions. The restructuring that results

when such manipulations are directed toward plants, animals and energons created by humans establishes new interdependencies and redistributes power within the habitat.

40
The evolution of energons is promoted by epi-phenomena that usher in new developments and thus gain priority status. Shrinking populations, isolation, niche formation, character coupling and the temporary association with artificial functional units lead to secondary effects and feedback that influence and promote evolution.

VI Sixth Fundamental Law

Symbiosis, group formation, hierarchy and interlinked cooperative networks yield energons of higher complexity and efficiency. Guiding factors in this process include the resulting conflicts of value, limiting factors, polarities in orientation, passive dependencies and active changes in environmental conditions. Positive or negative, automatic or directed selection determines the evolutionary course, which is accelerated by favorable conditions, evolution-enhancing mechanisms and the epi-phenomena of development.

Résumé A

Current thought holds that biological evolution and cultural development of humans are fundamentally different processes. Cybernetics teaches us that information, in addition to material and energy, is the third fundamental factor in our world. Evolution is considered to take the direction of increasing complexity: it strives toward structures with an ever higher information content via subatomic particles, atoms, molecules, cells and living beings. Researchers must therefore tackle the issue of how chance could have given rise to such a high degree of purposefulness.

In contrast, the energon theory views the life process as a special type of energetic phenomenon: a process that increases in potency and volume rather than seeking equilibrium conditions. Such a progression can only take place via structures that have clearly definable characters and features and that are therefore functionally determined. The acquisition and storage of information is not the goal of this process, but rather one of its necessary preconditions. Whether chance, intelligence or other forces give rise to a structure has no influence on its efficiency, which is dictated by necessity. Accordingly, all life forms can clearly be delimited from the inorganic realm and encompass human development. The life process is carried out not solely by the cellular body, but also by structures that include all the functional units necessary for that process. These structures are termed energons.

Résumé B

The development of cells began with energons that arose by the chance contact of energy-laden molecules in the primeval sea. They were the vehicle for a process that steadily increased in potency and volume. The nucleotide chains they contained formed the genetic code, which enabled reproduction and stored information. The shortage of freely available,

energy-laden building blocks in the primeval sea promoted those energons that were able to successfully synthesize proteins. Energons capable of harnessing light energy through photosynthesis gave rise to the autotrophic plants. These enriched the water with excreted oxygen, creating the precondition for the development of predatory energons, namely animals. Together, predator and prey mutually determine each others developmental direction through the causality of control. Another pioneering step was the development of separate sexes, which allowed genetically stored information to be recombined, promoting the development of new, more efficient types. The advent of the cell boosted the evolution of energons into a particularly competitive unit that displaced all its predecessors along the evolutionary pathway.

Résumé C

Unicells gave rise to multicellular organisms, whose bodies were almost exclusively constructed from a single cell during reproduction. Parts of the genetic code in the cells of multicellular organisms are blocked by regulatory proteins, leading to differentiation for various functions. Over the course of higher development, the latter shifted from cell-internal to multicellular functional units, ultimately including the function of organ formation. Multicellular plants and animals successfully conquered dry land, a process that required exploiting gases in the atmosphere, protecting against dessication and dealing with gravity, which is more effective in air than in water. At the level of human beings, energon development reached new heights: based on our mental capabilities, we were able to directly use inorganic material to form functional units that were separate from our cellular bodies. Through this mechanism, humans form more powerful energons whose construction plans are no longer anchored in the genetic code, but rather transmitted and therefore inheritable to other humans via language and writing.

Résumé D

The uniqueness of humans lies in our greater intelligence, which is based on the advanced development of our cerebral cortex. This enables human beings to causally link impressions and experiences that are widely separated in time and space. It enables us to draw conclusions from these circumstances, to plan, to theoretically analyze interrelationships, and to prepare solutions and decisions by simulating practical situations. Moreover, it enables us to objectively examine ourselves, leading to awareness of the self. The increased capacity for abstraction and conceptualization, as well as the ability to couple concepts with phonetic symbols, gave rise to language. The fear of forces of nature and the issues of birth, life and death led to metaphysical notions that have largely been refuted by the natural sciences. The energon theory views humankind not as the current epitome of evolution, but merely as the most talented and therefore most effective agent of a physical process. Our intelligence allows us to enlarge upon our cellular body with artificial functional units. This yields entities that promote an energetic development of increasing potency and volume.

Résumé E

The artificial organs created by humans have freed evolution from the constraints of the cell and have opened entirely new possibilities in boosting the potency and volume of the evolutive process. Artificial functional units that are not attached to the cellular body have led to a third phase of development – after the evolution of unicellular and multicellular organisms – termed hypercellular organisms; these have given rise to energons with an entirely different appearance. The artificial organs have the advantage of being removable, exchangeable and useable by several energons. They need not be produced by the respective energon, can be composed of any number of different materials, and their development need not be financed by that energon. They are also less burdened by the history of their development. They need not be operated with the body's own energy. Giant communal organs become possible. They need not be maintained, controlled or repaired by the energon and enable reproduction outside the intra-specific context. Progress made by one type of energon can prove beneficial to the development of others, promoting individual transformation. They considerably expand our sensory capabilities, wipe out any size restrictions on energons and enable an unfettered transfer of energy and material. They accumulate capital, incorporate other energons into one's own capable entity, and create any number of luxury structures. Should they lose their functionality, they can be discarded or eliminated.

Résumé F

After the evolution of uni- and multicellular organisms, humans have appropriated energon formation by consciously creating artificial organs. The behavior of the constructing and controlling human nucleus is determined by drives having innate and learned components; these reinforce and collide with one another and are in constant struggle with our intellect. They are rooted in innate, hereditary factors and can be arranged into main categories of drives involving nourishment, security, curiosity, sex, brood care, community, aggression, display, beauty, imitation, order, and ownership. They determine the plans, the resolve and the decisions of humans and therefore the direction of their energon formation. The capacity – rooted in self-awareness – to differentiate between pleasure and pain becomes the driving force. Controls with a mechanism similar to that in our drives can also arise through customs and traditions. Human intelligence, influenced and directed by these forces, enables the life flow to snowball in potency and volume. This suggests that this energetic process is headed toward global self-destruction.

Résumé G

Adding artificial organs to the human cellular body creates energons of increased efficiency, namely professional entities and business organizations, which form additional luxury structures. The predatory form of energy gain is initially retained yet considerably amplified through artificial changes to the environment, for example farming and livestock production. The fundamental unit in group formation is the genetically dictated partnership of the family. The increasingly differentiated division of labor gives rise to a form of business that involves exchange, with money becoming the universal mediator. The functional units of the resulting business organizations are professional entities. Technical progress that harnesses natural forces with machines and processes further increases and accelerates this development. The

universal mediator here is electricity. The interests of humans become secondary in energons of ever expanding potency and volume: they can be exchanged and replaced. The artificial functional units – the artificial organs – determine the common task with which all states are entrusted, namely guaranteeing protection against outside forces and maintaining internal order. Crucial conflicts of interest between humans, their energons and the various forms of state characterize the third phase of evolution, in which power, empowerment and ownership are at the center of controversy.