

Complexity Enlivened: Researching Human Life Dynamics *In Vivo*

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Introduction

The study of complexity of human life dynamics is unique, as the research findings of this kind of study are immediately tested *in vivo*, that is, in the life of the researcher. Self-organization, attractors, repellers, fractals, criticality, butterfly effect, divergence syndrome, etc. stop being just concepts and metaphors discussed in the paradigm of complexity and become phenomena and processes of one's real-life experience. One needs to understand these phenomena and process so as not just to theorize about them, to prove theorems and preach how suitable they are for applications in certain fields of human inquiry, but to actually deal with them in life as it unfolds.

The ultimate test for how well one understands complexity is the way one lives. If one lives wholesomely – in a healthy and fulfilling way, if one continues to advance on the road to wisdom despite of the stupidity and ignorance of those who possess the power in society and use it to push the humankind towards ecological disasters, social crises, wars and bloodsheds, if one's mind is concentrated and determined to transcend the obstacles on the way of realization of one's creative potential, if one's heart is full of compassion and eager to help those who suffer under oppression, exploitation, manipulation and brainwashing, if the waves of inspiration never cease to emerge in one's soul and trigger thoughts and actions towards harmony and unity with the dynamics of nature and the universe, then and only then one understands and implements *in vivo* the powerful ideas, principles and laws of complexity.

Existential Dynamics

The universe is like a gigantic living organism that 'breathes' eternally – unfolds and infolds, 'explodes' and 'implodes', expands and shrinks in a rhythm, which the beats of our hearts reflect, for we are inseparably imbedded in the universe. Every one of us is like a small universe pulsating – changing, evolving, transforming - in sync with the rhythm of the whole universe.

The universal rhythm is sustained by existential dynamics – energies and forces filling in with their interplay the existential continuum. As far as the existence has neither beginning nor end, the existential dynamics are bearers of *aeonian* (eternal, timeless) dimension.

We, the human beings, have emerged out of the complex interplay of the existential dynamics. As Heisenberg pointed out, the same forces and energies, which sustain the universe and nature, sustain our lives; they are responsible for the functioning of our bodies and minds, as well as for the development of our consciousness (Heisenberg, 1971).

The existential dynamics manifest through each individual and therefore, their aeonian dimension tends to express through each individual's dynamics.

Each human being represents a complex consisting of three interconnected and interdependent 'wholes': body, mind and soul. We know that the body and mind stop functioning when one dies; therefore it is not through them that the aeonian dimensions tend to express. Since time immemorial, spiritual thinkers and practitioners consider the human soul related to a dimension that lasts forever.

Complexity of Ecological Web

It is through the constant interplay of the existential dynamics that every single entity (phenomenon, process) becomes connected with the others in an all-embracing ecological web of interrelationships

and interactions. Every entity, every interrelationship, every type of interaction in this web depends on every other and on the web as a whole. This kind of omnipresent dynamic interdependence reveals the essence of complexity where “complexity” is understood not so much as complicatedness of the ecological web, but rather as an expression of its integrity (wholeness) and ubiquity (the word “complexity” is derived from the Latin words *complexus* meaning “whole” and *completere* meaning “to embrace”).

In the context of the existential dynamics, “complexity” refers to their interactive and *symplectic* (interwoven, interpenetrated, entangle) nature, their pervasiveness, spontaneity and simultaneity, their potential for producing emergent phenomena, attractors, repellers and fractals, their urge towards self-organization, self-organized criticality, evolution and transformation, their omnipresence and unity.

The existential dynamics interact - change, evolve and transform from one material embodiment to another; they self-organize into levels - scales of manifestations: the macro scale is the scale of the universal dynamics; the micro scale is the scale of the quantum dynamics. The human dynamics are at the mezzo scale – the scale of the dynamics of our planet that includes also the dynamics of the minerals, plants and animals.

Self-organization, Attractors and Fractals

According to Keyserling (Keyserling, 1999), when mapped graphically on the so-called phase diagrams, the dynamics of the minerals tend towards point-like attractors (static equilibrium). The dynamics of the living plants tend to periodic attractors oscillating between two states – seed (state of potentiality) and growth (state of unfolding the potential). The dynamics of the living animals tend to torus (donut) attractors. Torus attractors suggest complex and variable adaptive behaviours depending on the environment and the behaviour of the other animals. With no inborn capacity for a self-guided growth in intelligence, animals’ dynamics remain tied to the surface of torus attractors by the strength of the animalistic instincts for survival and reproduction.

The dynamics of the human dynamics are pulled towards complex (“strange”) attractors observed in phase diagrams mapping chaotic behaviours, that is, behaviours which are both unpredictable in long term and sensitive to even smallest perturbations. Having inborn capacity for free will, creativity and growth in wisdom, we are able to free ourselves from the pull of certain attractors and facilitate emergence of others compatible with the degree of development of our consciousness.

Each level (scale) of existential dynamics has emerged as a result of their drive towards self-organization; each scale reflects the infinitum of interrelationships and interactions in the all-embracing ecological web. Because of this, the scales are fractal, that is, the dynamics at each scale exhibit self-similar patterns,

If we zoom, for example, into the scale of the universal dynamics, we observe similar galactic dynamics, be they related to one galaxy or to a cluster of galaxies or to a cluster of clusters of galaxies, and so on, ad infinitum.

When the physicists zoom into the scale of the quantum dynamics, they reveal an infinite web of self-similar, inseparably interconnected energy patterns – ‘clouds’ of tendencies and possibilities exhibiting ‘non-locality phenomena’ (instant transmission of emergent changes) and ‘observer effect’ (the act of observing changes the observed realization of the quantum dynamics).

When zooming into the human scale, one sees self-similar patterns in the bodies’ dynamics, in the dynamics of the human emotions and thoughts, as well as similarities in the behavioural patterns of individuals, families, communities, societies, civilizations.

The unity, all-pervasiveness and self-similarity (fractality) of the existential dynamics throughout all the scales of their manifestations suggest that they might have a common centre (source, origin, attractor) which projects on each scale and keeps them united and interconnected, no matter what kinds of realizations - changes, evolution and transformation - they undergo.

Vortices

In the all-embracing ecological web, where everything constantly moves - emerges, sustains, dissolves, re-emerges and transforms, - there must be forces which keep the web not going astray or dissolving but remaining whole and centred. Although these forces are included in the existential dynamics, they are unique in the sense that they are directed inwards, as if the ecological web has a centre (source, origin) that pulls them towards itself. They resemble the sucking centripetal forces emerging along the axes of vortex-like dynamic structures - whirlpools, eddies, whirlwinds, tornados, hurricanes, etc.

More than 350 years ago, Descartes described the whole universe as an infinite-in-size vortex; in the same way as a whirlpool or tornado sustains itself by centripetal forces emerging out of the interactions of entrained turbulent streams of a fluid (water or air), the vortex of the universe sustains itself by inwardly centred forces born out of the interplay of powerful dynamics whirling at the macro scale of existence.

Although Descartes' vortical model of the universe was rejected by the Newtonian mechanics, today's theoretical physics is strongly attracted by the exploration of vortex-like cosmological models (like the vortical structures of black, white or worm holes). Our spiral galaxy is a gigantic disc shaped vortex, the inwardly centred forces of which seem to keep together all the bodies rotating and wandering within it.

The whole existential continuum seems to resemble an infinite fractal vortex, that is, a vortex consisting of countless number of vortices, the centre of each mirroring and relating to the centre of a larger one in a similar way as the centre of the vortex of our solar system mirrors and relates to the centre of the vortex of our galaxy and the centre of the latter mirrors and relates to the centre of the vortex formed by a cluster of galaxies, and so on.

Centeredness

The centre responsible for sustaining the wholeness of the existential continuum is responsible also for the integrity of the ecological web and the dynamics that support it. The study of non-linear vortical dynamics indicates that at the central axis of any highly energized vortex a kind of 'hollowness' emerges - a cavity (emptiness) with no material filling in it. Such hollowness may well emerge along the central axis of the existential vortex; while free of material substratum, it is also free from the effect of time, as it persists without changes, without birth and death, growth and decay. And yet, it is impregnated with an immense energy potential, similarly to the potential of the hollowness along the tunnel of a worm hole - a hollowness impregnated with a gigantic implosive (sucking) power.

Being simultaneously voidness (void of material substance) and plenitude (full of potential energy) and something else that transcends duality of being full or empty, something that has neither beginning nor end, something that does not change and is beyond the grasp of the human logic, the hollowness at the centre of the existential vortex exemplifies the aeonian – eternal, timeless dimensions of existence (Dimitrov and Hodge, 2002).

All embodied-in-matter motions (changes, dynamics, interactions), all animated and non-animated entities belonging to the ecological web seems to be pulled by the centripetal forces of the existential vortex towards the immaterial voidness in order to 'implode' into a state of potentiality, to transform into a seed form ready to unfold, expand and evolve.

The vortical structures produce outwardly directed, centrifugal forces also; there are centrifugal forces emerging out the spinning dynamics of the existential vortex and responsible for the urge of the entities to 'explode' and realize their potentials in the material world of existence.

Principles of Implosion and Explosion

Schauberger differentiated between two key principles used by nature: Principle of Implosion and Principle of Explosion (Schauberger, 1998).

The first principle, Principle of Implosion, is responsible for the vortex-like, centripetal, 'implosive' type of movement; according to Schauberger, it is this type that sustains life in nature and the universe. It is associated with such important life-supportive qualities as coolness, suction, centeredness, wholeness and potential to unfold and grow. The implosive movement is neg-entropic, that is, it does not dissipate energy.

The second principle, Principle of Explosion, is responsible for the 'explosive' (centrifugal, radiative explosive) type of movement; this type of movement generates heat, pressure, fragmentation, illness, decay and death. The explosive movement is entropic; it dissipates energy.

In its infinite variety of manifestations, nature and the universe know how to harmonize (balance) the both types of movement – the implosive (inwardly directed, negentropic, life-supportive) and the explosive (outwardly directed, entropic, death-oriented) movement, and thus to restore, regenerate, rejuvenate, evolve, transform and exist forever.

Harmony

When harmonizing (balancing) their dynamics, nature and the universe use the Golden Ratio, which Leonardo da Vinci called *divina proportione* (divine proportion). At every state of existence, we are witnessing countless examples of natural and universal forms and processes harmoniously co-designed according to the Golden Ratio – from the growth of the leaves in a tree to the proportions in the human bodies, from the form of the shells of molluscs to the spiral of the galaxy.

Below we show how simple assumptions about the forces emerging in the existential vortex lead to a harmonious balance based on the Golden Ratio.

The largest part of the energy of the existential vortex needs to be inwardly directed so as to sustain the never ceasing dynamics of existence (its aeonian dimension), to support the evolution of the ecological web and the growth of life in all its possible forms. If we denote the magnitude of the whole energy of the existential vortex with 1, its inwardly directed, *negentropic* (life-oriented), implosive part with I, and the outwardly directed, entropic (death-oriented), explosive part with 1-I, then the balance between the two types of energy will require that $1 : I = I : 1-I$. The solution of this equation gives for the ratio $1 : I$ the value of the Golden Ratio ϕ - irrational number $[1 + \sqrt{5}]/2$ equal approximately to 1.62. Thus, for the implosive and explosive dynamics to be harmoniously balanced, the ratio between them needs to coincide with the Golden Ratio.

The Golden Ratio has the property to produce fractals when applied recursively; the fractal scales of the existential dynamics are designed based on this property of the Golden Ratio. The plants and animals on our planet follow the universal rhythm of implosion and explosion, unfolding and enfolding, life and death - a rhythm based on the Golden Ratio. The human beings are also able to develop self-awareness of this rhythm and to learn how to consciously apply the Principle of Implosion for strengthening their self-healing capacity and sustaining the state of their health at highest possible levels.

Applications

To apply the Principle of Implosion means to be able to move inwards - to concentrate upon one's own experiential dynamics, to explore one's own nature, to delve into one's own thoughts and feelings, desires and motives, aspirations and longings, beliefs and dreams, to reveal their driving sources and causes, attractors and repellers, and to master them. This helps the individuals to extract lessons from any event of life and thus to learn and grow in consciousness.

The application of the Principle of Implosion is nothing but a study of one's inner nature - a genuine and honest dialogue between one's body (instincts, physical drives, genetic predispositions, actions), mind (senses, perception, reasoning, knowledge) and soul (spiritual experience, synchronicities, inspiration, wisdom).

The application of the Principle of Implosion is indispensable for understanding the life-generating and life-supporting forces of nature and the universe as manifested through one's own experiential dynamics, and for mastering the realization of these forces through the functioning of the entire complex of one's body, mind and soul.

The application of the Principle of Implosion is a way to explore and connect with the centre of the all-embracing ecological web as projected onto one's own individual dynamics.

In every day life, the application of the Principle of Implosion requires perseverance in physical, mental and spiritual practices with wholesome - salubrious and spirit-elevating - effects on the individual as a whole - a unique symbiosis of body, mind and soul. Examples of such kind of practices are relaxation (helping the individuals to feel and experience salubrious effects of the life-generating and life-sustaining forces of nature and the universe as they flow freely through their bodies saturating every cell with energy and vigour), concentration (helping the individuals to reveal the inner centre of their own dynamics while focusing their attention on an inspiring thought, feeling, symbol or another chosen object of concentration), mediation (helping the individual to connect with the centre of the universal ecological web and experience both the joy and bliss of being in unity with the existential dynamics and in harmony with their eternal rhythm).

Practices like those mentioned above represent specific techniques for implosion. Relaxation and concentration are volitional; they require participation of one's will and mind in order to realize and master them. Mediation is not volitional; it is a kind of 'let go' technique whose realization can happen only when the mind and will of the individual are in peace - free from mental efforts and emotional attachments.

“Know thyself!”

No one thing can emerge out of the interaction of the existential dynamics, if the latter have not already had the capacity to give birth to it. We emerged as human beings because the existential dynamics had the capacity to create us. As far as each of us is a bearer of their aeonian dimensions, each of us has the potential for infinite transformations along a continuous process of changes, development and evolution.

The present state of an individual reflects all the transformations which have occurred in the past and contains (as potentialities) all the transformation which will occur in the future. From a quantum perspective, all these transformations exist in parallel as waves of tendencies and possibilities. By imploding (immersing deeply) in the present state of being one can reveal the wisdom needed for understanding the enigmas, paradoxes and mystery of human life and existence. Without such an understanding, the mere accumulation of knowledge about the world we live in hardly contributes to our growth in consciousness. Moreover, it creates obstacle for this growth, as the knowledge of the phenomena and processes of the external world is inevitably partial and therefore distorted.

It is the inwardly directed self-exploration, which brings into the human inquiry the component that is crucial for the holistic understanding of any object of study; through the knowledge of oneself, the explorer, the object of exploration and the methods of exploration become at-one. Then and only then the object of exploration can be grasped in its wholeness, that is, inseparably connected with the whole ecological web.

The ancient thinkers used to say that all the knowledge we need in order to understand and master our lives is within us. “Know thyself!” is the legacy of Socrates to all who have chosen the way of wisdom. Why did he call the knowledge of ourselves wisdom and not the knowledge of the world we live in?

About a century ago, the French social geographer Elisée Reclus wrote in his book “L'Homme et la Terre” (The Human Being and the Earth) that “the human being is nature becoming self-conscious” (Reclus, 1905). We have emerged as realizations of the urge of nature to know itself. Before our emergence as human beings, our dynamics must have been imbedded in the dynamics of nature as potentialities and then existed under different manifestations at each stage of natural evolution. In other words, each stage of the evolution of nature has been mirrored in the evolution of the material embodiments of our dynamics. This means that *all the knowledge about each stage of natural evolution*

and hence about each stage of our own evolution as species is within each of us, hidden in the depth of each individual's consciousness and in the 'collective unconsciousness' of the humankind. (The term "collective consciousness" has been firstly introduced by Carl Jung (Jung, 1912; Jung, 1981) to explain the existence of psychological archetypes – patterns which form the basic blueprint for major dynamic counterparts of the human personality and which are inborn within the psychological life of all peoples everywhere at all times).

Our dynamics are inseparably imbedded in the dynamics of nature, universe and the whole of existence. By exploring own experience, emotions and feelings, thoughts and actions, we simultaneously explore not only the dynamics of ourselves, of our lives, but also the dynamics of nature and the universe, the all-pervading dynamics of existence. And this is the only exploration that leads us towards wisdom.

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