

The Revolutionary Informational Model of Human and Living Structures, Explained in Terms of Classical Physics, what is Life and what is Consciousness

Florin Gaiseanu^{1*}, Ana Maria Gaiseanu² and Adrian Gaiseanu³

¹PhD Physics, Science and Technology of Information, Bucharest, Romania and Barcelona, Spain

²Communication Degree, Advertising and Public Relations, Autonomous University of Barcelona, Master in Holistic Therapies, Spain

³Master in Management, Academy of Economic Studies Bucharest and Autonomous University of Barcelona, Spain

***Corresponding author:** : Florin Gaiseanu, PhD Physics, Science and Technology of Information, Bucharest, Romania and Barcelona, Spain

ARTICLE INFO

Received: 📅 October 15, 2026

Published: 📅 October 26, 2026

Citation: Florin Gaiseanu, Ana Maria Gaiseanu and Adrian Gaiseanu. The Revolutionary Informational Model of Human and Living Structures, Explained in Terms of Classical Physics, what is Life and what is Consciousness. Biomed J Sci & Tech Res 67(2)-2026. BJSTR. MS.ID.010458.

ABSTRACT

This paper presents the main characteristics of the Informational Model of Human and Living Structures (IM-HLS), based solely on classical physics, and shows its advanced level compared to the earlier negentropy concept proposed by Schrödinger. This informational model and its operational components are revolutionary and unique among existing models because it is not only based on a classical physics framework (distinct from quantum mechanics-based models), explaining how life and consciousness operate and highlighting their informational essence, but it also allows the understanding of info-structuration and operability of all living structures. It is shown that, starting from a newly defined physical concept — matter-related information — information is not merely a message, but an active physical participant in living processes, driving structuration and functionality through binary YES/NO informational activity.

Keywords: Informational Model of Human and Living Structures (IMHLS); Classical Physics; Matter-Related Information; Seven Informational Centers; what is Life; Consciousness; Gaiseanu vs. Schrödinger Model; Revolutionary Model; YES/NO Behavior; Applications

Abbreviations: IMHLS: Informational Model of Human and Living Structures; IS: Intrinsic Source; CDC: Center of Decision and Command; IES: Info-Emotional System; IRSS: Info-Reactive Sentient System in the Remaining Living Organisms; GTS: Genetic Transmission System; IGG: Info-Genetic Generator; IC: Info-Connection; ES: External Sources; Orch OR: Orchestrated Objective Reduction; PIS: Programmed Informational System; NDEs: Near-Death Experiences; RMEs: Religious and Mystic Experiences; EA: Attitude Efficiency; ISHLS: Informational System of Living Structures

Introduction

In 1944, Erwin Schrödinger proposed that life resists decay via negentropy and that the chromosome acts as an aperiodic crystal with code-script capability [1]. His approach was broad and conceptual, lacking a granular architecture. Other contemporary models include Integrated Information Theory [2], which attempts to explain subjective perception (qualia) in terms of entropy as a quality of consciousness [2], and the Orchestrated Objective Reduction (Orch OR) theory, which proposes quantum computations in microtubules as the substrate of consciousness [3]. Distinct from these models, the Informational Model of Human and Living Structures (IMHLS), proposed

by Gaiseanu in 2016 [4], introduces the concept of matter-related information as an active physical participant [5], with binary YES/NO decision-making, explaining structuration and functionality. In this paper, the distinctive characteristics of IMHLS are discussed in comparison with Schrödinger's model. IMHLS made it possible to explain the structuration of the body, its functionality, and consciousness as a result of the activity of specific informational systems. It is also shown that this model can explain the structuration and functionality of all organisms across the entire scale of evolution and development, from bacteria — the simplest living structures — to humans, allowing it to be qualified as a revolutionary model.

Matter-Related Information

The core of IMHLS is the definition of matter-related information, which makes it possible to observe that micro/macro interactions in a living organism are performed by information transmission between every part and the whole. According to IMHLS, information is the result of a reaction/interaction between complementary micro-components, defining configuration/reconfiguration. It is hidden during structuration and released during deconstruction. Structuration is informationally driven, not random. This is the physical bit of life. At the microstructural level, the simplest way to understand such a situation is to consider two distinct particles or micro/macromolecules in a body, A and B, which interact. Such an interaction is not only a

chemical/physical/biological process; it includes information I as an active participant: during the composing process, the interaction between A and B takes place by absorption of information, according to the schematic reaction: $(A+B) + I \Rightarrow (AB)I$, where I is in this case hidden information inside such a microstructure. During a deconstructed (reversible) process, the hidden information is released, which can become a “message” outside the initial microstructure, useful for subsequent communication, according to the schematic reaction: $(AB)I \Rightarrow (A+B)+I$. The structuration of the body is therefore a direct result of such communication, starting from the activity of the chromosomes of the primary cell (the intrinsic information source iS – Figure 1) in the fertilized egg.

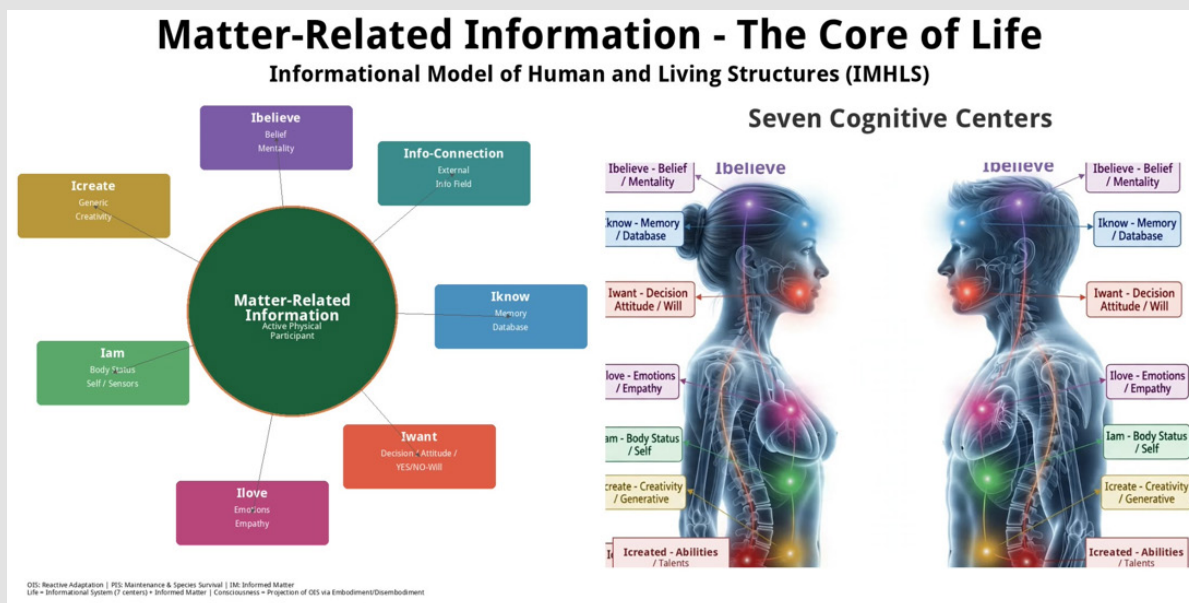


Figure 1: Matter-related information as an active physical participant – core of the informational system (IMHLS). The seven informational centers (Iknow, Iwant, Ilove, Iam, Icreate, Ibelieve) are organized around matter-related information as an active participant. OIS: Reactive Adaptation | PIS: Maintenance & Species Survival | IM: Informed Matter. Life = Informational System (seven centers) + Informed Matter | Consciousness = Projection of IMHLS via embodiment/disembodiment. The Cognitive Centers for human, managed by the brain, are represented in the right part of Figure 2, indicating their connection with the body.

The main interaction in biological structures is performed by complementary microstructures with corresponding chemical characteristics, such as those inside and outside the nucleus (iS). Info-communication triggered by external signals, as external information sources (eS) in the cell — the basic structural unit of multicellular organisms — is ensured by surface receptors acting as selective perception sensors, and by internal microcircuits for information transmission, through a cascade of info-reactions that triggers a reaction of the nucleus [6] as a reactive response. Remarkably, such a mechanism explains communication in organisms with or without a nervous system. Animals possess a nervous system, where information is transmitted inside a cell as an electrical signal, but the input and output of information in such

a cell is performed by chemical agents (neurotransmitters, each type corresponding to specific information), firing/activating (YES) or not (NO) as a bit-type unit of the nerve cell. This characteristic, revealed by IMHLS, sustains the revolutionary feature of this model. While the activity of the nucleus in a cell can itself be a source of information, defined as intrinsic source (iS), signals from the external environment of the cell are external information sources (eS), involving a reactive response of the cell, as shown in Figure 1 [7]. The energy E and the necessary microstructural components are provided from outside the body by a flux of nutrients (air, water, nutrients) — mass source mS (Figure 2).

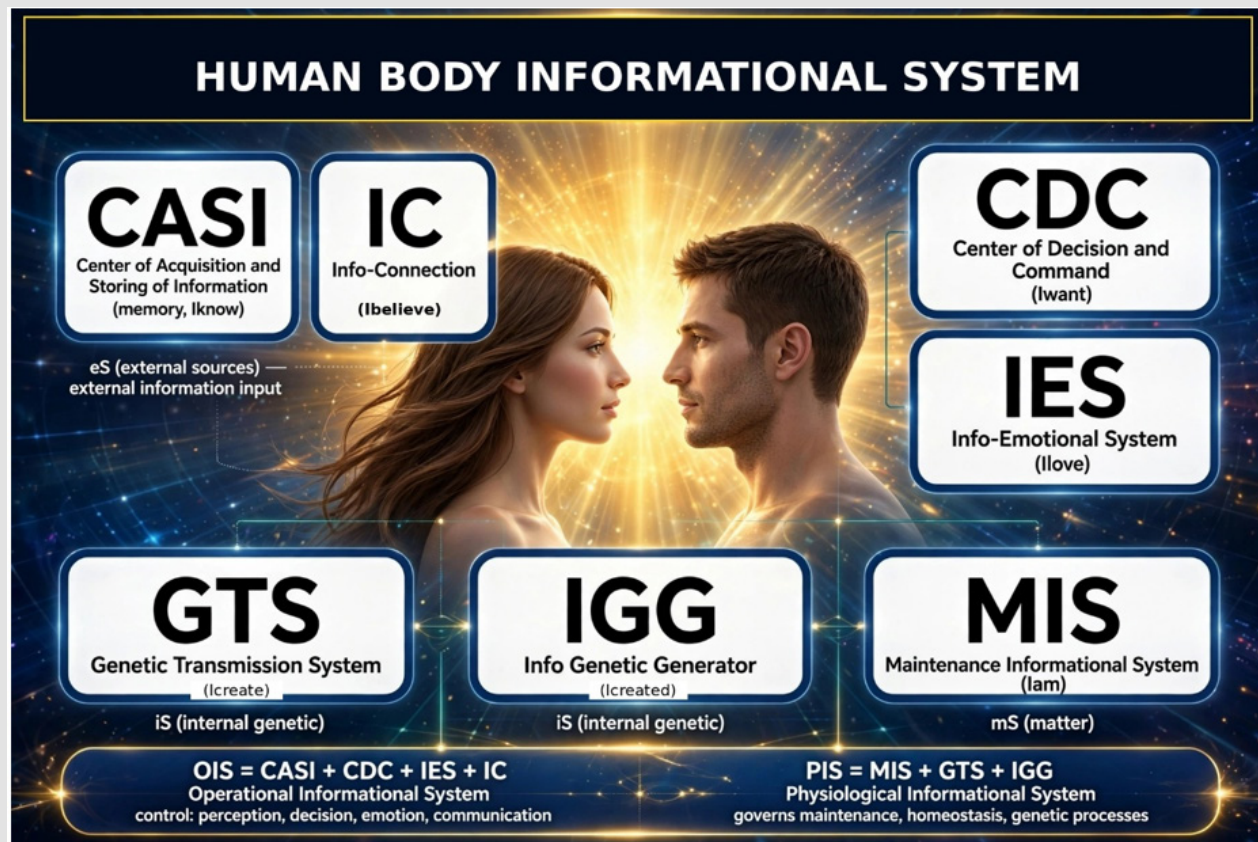


Figure 2: Schematic representation of the informational system of the human body and the information sources (intrinsic source iS, extrinsic/ external sources eS) and mass source (mS). The informational system of the remaining organisms is structurally similar, with IES being substituted by IRSS, defined as the Information Reactive Sentient System [7].

It is also remarkable that this model explains adaptation and evolution in a coherent and unitary manner: receiving repetitive signals from external information sources (eS), the nucleus reacts by fabricating corresponding proteins essential for preferential structuration or functioning, adding or enhancing preferential functions or body development in an organism by means of epigenetic processes. If such features are maintained through practice, they can be transmitted to the next generation [7]. The core effect of the matter-related information concept in IMHLS is schematically represented in Figure 1.

The Informational Centers/Systems of Human and Living Structures

IMHLS (Figure 2) reveals a highly informational structure, consisting of a seven-component operational architecture composed of: Center of Acquisition and Storing of Information (CASI), including memory areas in the brain and all sensory circuits (Figure 2); Center of Decision and Command (CDC), managing decision and executive components (muscles); Info-Emotional System (IES) and the equivalent Info-Reactive Sentient System in the remaining living organisms

(IRSS); Maintenance Informational System (MIS), dedicated to ensuring the maintenance of the body through automatic operational processes that convert the mass flux into nutritional components and transmit them to every cell; Genetic Transmission System (GTS), acting for reproduction; Info-Genetic Generator (IGG), reconstructing/ configuring a new body of a living organism; Info-Connection (IC) is a selective center for comparing received information with existing experience, letting the input information pass (YES) or not (NO). The detection/interpretation of the activity of each of these centers in the mind ($\Rightarrow$) corresponds to the cognitive centers as follows (Figures 1 & 2): CASI $\Rightarrow$ Iknow, CDC $\Rightarrow$ Iwant, IES $\Rightarrow$ Ilove (IRSS $\Rightarrow$ Irs), MIS $\Rightarrow$ Iam (self-detection, self-status of the body, health/vigor/energy), GTS $\Rightarrow$ Icreate, IGG $\Rightarrow$ Icreated (predispositions), IC $\Rightarrow$ Ibelieve (mentality, fortified beliefs and decision criteria). All these centers/system components and cognitive centers are supported by various brain areas [7].

The Operative Informational System (OIS=CASI+IC+CDC+IES/IRSS) manages signals from external/internal sources (pain, hunger, thirst and other impulses) to elaborate a decision/reactive response,

while the Programmed Informational System (PIS=MIS+GTS+IGG) operates maintenance via MIS and genetic activities — reproduction via GTS and growth and development of the body according to age via IGG. Consciousness is explained as a projection of ISHLS activity in the mind via embodiment/disembodiment mechanisms. The informational system is therefore: ISHLS=OIS+PIS. The Self (Itself), defined as the detection of the self with respect to the rest, elementary in primitive living organisms and more developed on the evolutionary scale, with human consciousness at the top, can be expressed as: Itself=(I-know+Ibelieve+Iwant+Ilove/Irs)+(Iam+Icreate+Icreated).

Gaiseanu vs. Schrödinger Advancing Results

Gaiseanu's model overcomes Schrödinger's 1944 (Figure 3) aperiodic crystal / code-script / negentropy macro-concept by delivering

a granular operational map and a seven-informational-system architecture with native integration, binary logic and universal nature. In comparison with contemporary approaches such as Integrated Information Theory [2], limited to qualia (sensorial detection of reality as a part of consciousness), and Orchestrated Objective Reduction (Orch OR) [3], based only on quantum phenomenology to explain consciousness, IMHLS provides a testable, physics-grounded architecture based on classical physics mechanisms, explaining life on the entire evolutionary scale and the detection of the self as a distinct, separate reactive sentence of reality, with human consciousness at the top. Where Schrödinger offered code-script [1], IMHLS delivers seven distinct informational systems and corresponding cognitive centers, as mentioned above. A comparison between Schrödinger's and Gaiseanu's models is presented in Figure 3. The items presented on the left side of the table in Figure 3 are explained below.

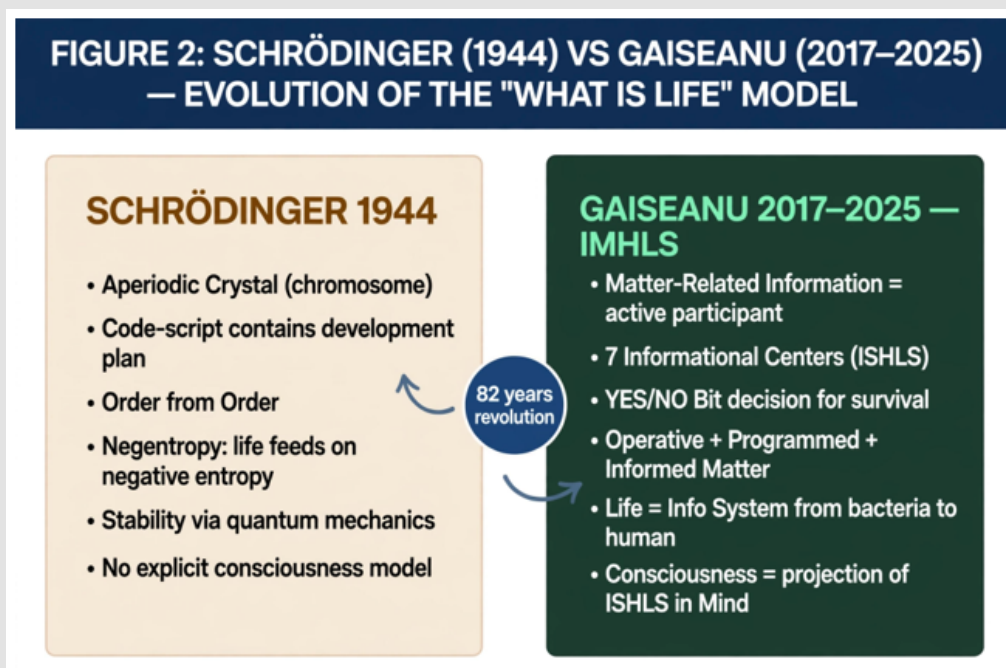


Figure 3: Schrödinger (1944) [1] vs. Gaiseanu (2026) [7] – From macro-concept to seven informational operational architecture with epigenetics processes and consciousness.

In Schrödinger's view, an aperiodic crystal acting in living organisms as a key to their functioning would be a hypothetical hereditarily stable (solid, resistant to heat-induced disorder) molecule — known today as DNA/chromosomes — with a complex, "code-script" (hence "aperiodic") non-repeating atomic structure that can store biological hereditary code and ensure the development of a new organism. Crystals with periodic structures are diamond (carbon-based) and silicon crystals, the latter being the substrate of micro/nanoelectronic structures, which allowed the high development of corresponding communication devices. Carbon is a basic component of living organisms, but

not regularly disposed in crystals, so Schrödinger's intuition was correct, although he did not have access to the biological terms known today. Life feeds on negentropy, a term introduced to show that life functions inversely to non-living systems, which tend to increase their entropy (degree of disorder). "Order from order" is a continuation of the same core idea, meaning that a new order is generated from a previous order, not from disorder (chaos), which is correct for living organisms. Quantum mechanics is involved in maintaining the stability of certain molecules, because instability can be produced only if an atom can surpass a barrier energy, specific to its energetic state.

Thus, life is stable not because it has a huge number of atoms protecting it like a magnet, but because it is locked in a quantum state (only in certain discrete energy states), which is nowadays well established. Limits of Schrödinger's model: broad conceptual overview of negative entropy, lacking a granular map. It could not explain epigenetics, having been written before the discovery of the DNA double helix and before modern neuroscience. The main core items characterizing Gaiseanu's model are presented on the right side of the table in Figure 3 and are discussed below. The core concept of this model is matter-related information, showing that a change in the configuration of a micro/macro material structure involves absorption/emission of information, as shown above. On this basis, and on the analysis of the intimate process mechanisms in humans, generalized to all other living structures, it was shown that these function by means of seven informational systems, in successive YES/NO bit-type steps. These systems are organized as:

- 1) Programmed Informational System (PIS), automatically maintaining body structure and evolution and generating a new living structure by reproduction;
- 2) Operative Informational System (OIS), managing the reactive response to external/internal signals for suitable adaptation and survival.

Such systems are operative across the entire scale of development/evolution, explaining life and its features. Consciousness in humans is a direct consequence of such info-operability, each informational component of the informational system being reflected/detected in the mind correspondingly and distinctly. In inferior living organisms, the complexity degree of such detection and interpretation of information decreases, reduced at the elementary level at least to the detection of the self as a distinct and unique individual versus environment and other living/non-living structures [7]. Moreover, living structures need a connection to matter for feeding, and a connection with the environment to adapt. All living structures are capable of reproduction.

Gaiseanu's Advanced Contributions Resulting from this Analysis are Evidently Revolutionary

New Physics Concepts and Informational Elements Introduced:

- 1) Matter-related information as an active physical participant, a structuring factor hidden during structuration and released during deconstruction: $(A+B)+I \Rightarrow AB(I)$ and $AB(I) \Rightarrow (A+B)+I$. The body of living structures therefore appears to be composed of matter and information as sentient-reactive structures, composed of Informed Matter (IM).
- 2) Info-creational field as accumulated data in the brain (memory) and operated by CDC / Info-Connection (IC) as a fundamental field managing YES/NO selection before judgment by the prefrontal cortex, explaining intuition, premonition, near-death experi-

ences (NDEs) and Religious and Mystic Experiences (RMEs).

3) Seven informational systems and corresponding cognitive centers: Iknow (CASI – memory), Iwant (CDC – decision/will), Ilove (IES/IRSS – emotions/reactive-sentience), Iam (MIS – body status), Icreate (GTS – genetics/creativity), Icreated (IGG – inherited/acquired predispositions), Ibelieve (Info-Connection IC – YES/NO info-selection hub).

4) Binary YES/NO type of operability as the physical bit of life – complementary lock-key chemical selectivity at receptors and electrical ALL-OR-NOTHING polarization/depolarization along axons, competition of excitatory/inhibitory neurotransmitters in the synaptic gap.

5) Embodiment/disembodiment as an informational transmission mechanism – explains how virtual information becomes matter-related and vice versa.

6) Integration into the genetic system by epigenetic repetitive/intensive processes: OIS (CASI+CDC+IES – reactive adaptation) $\Rightarrow$ modifying (reversibly or not) the functionality of PIS (MIS+GTS+IGG – maintenance/species survival); such a process explains evolution as Information-Assisted Evolution, with information playing a fundamental role through communication with the environment and the body for adaptation and survival.

7) ISHLS (Informational System of Living Structures) = CASI+CDC+IC+IES/IRSS + MIS+GTS+IGG $\Rightarrow$ (gives rise to) Itself, individually detected, characterizing individuals and differentiating species, from bacteria to human, plus IRSS for sentience.

8) Information Science of Consciousness as a practical science, including information as a fundamental element and specific, adequate informational concepts, as described above. Consciousness and detection of the Self appear within this new framework to be fundamental for life, allowing interaction with the environment, especially to fulfill the needs for food (MIS) (life energy and restructuring components) and defense (sentience-reactivity IRSS). The continuity of a species is ensured by GTS and IGG, which contain not only the memory of body structuration, but also the ancestral memory of the species, guiding basic reactive impulses and behavior in a specific environment.

All these concepts and mechanisms are formulated through classical physics, showing that no quantum hypotheses are necessary.

- (i) Structuration/deconstruction via classical chemical reactions with information absorption/release.
- (ii) Negentropy is explained via classical thermodynamics: heat elimination to the environment, protein folding structuration, compartmentalization, epigenetic absorption — as entropy decrease, without violating the second law, as in Maxwell's demon example.

(iii) YES/NO decision via classical electrophysiology (Na⁺/K⁺ depolarization) and classical biochemistry (receptor complementarity of cells), without requiring Orch OR quantum microtubules [3].

(iv) Memory and thought as operation on the info-creational field (accumulated experience in CASI) with thought as an informational operator, explainable by classical info-processing.

(v) Epigenetic information-assisted evolution: external repetitive info -> Ibelieve/Iknow => Icreate embodiment => transgenerational traits, explained by classical molecular biology, not quantum.

Applications

IMHLS is a suitable basis for solving various unsolved problems in philosophy, psychology, and even in information science, introducing new useful concepts. Some of these applications are mentioned below [7,8]:

Philosophy, Concerning

- (i) The composition of Reality, showing that the Universal Tri-angle of Reality is represented by matter-energy and information;
- (ii) Mind-body relation as mutual info-communication [8].

Cognitive Science

Certainty/uncertainty in Cognitive-Sentient Exploration of Reality. Life/Information Science – information-matter bipolarity, informational activity in the eukaryotic cell.

Psychology

- (i) Nature versus Nurture dilemma, explained as talent inherited (Icreate/Icreated) vs. learned (Ibelieve/Iknow) via epigenetic mechanisms;
- (ii) Attitude as informational output quantified in bits.

Neuroscience/Neurology, Physiology/Psychiatry

- (i) Anterior/posterior cingulate cortex operability as YES/NO hub;
- (ii) Brain response to beauty/ugly, aggressiveness;
- (iii) Addiction/mood disorders;
- (iv) Neurorehabilitation by music, effects of mass-media mediated reality [9].

Social Sciences – Dependence/Independence in Decision-Making of Children/Young People During Their Evolution in Family and Society, shows how Ibelieve and Iwant centers shape autonomy, with practical models for education and parenting [10]. It applies ISHLS to explain how children/young people oscillate between dependence and independence. Attitude Control and Decision Optimization for

Personal/Professional Projects defines attitude as a vector (Attitude Efficiency EA) with maximum efficiency toward an objective. It demonstrates how the OIS/PIS decision chain (YES/NO) determines trajectory, allowing optimization >50% efficiency in quadrants. Direct application of the Iwant vector model for project management, personal development and professional success [11].

Information Science & Biomedicine

Fundamental info-transmission circuits, hierarchical brain organization/evolution, mind-body equilibrium and health.

Microbiology/Biotechnology/Bioengineering/Life and Information Science

Big data predictive analysis for COVID-19, plant behavior model, extension of consciousness concept to all living structures, biomedical sensors, AI decision making, biocomputers, DNA imaging [7].

Integrative Therapies

Reiki as Communication Process [12], music-based neuro-rehabilitation.

Geriatrics and Gerontology: aging and life overview, adaptation, near-death experiences [7].

Conclusion

The Informational Model of Human and Living Structures (IMHLS) and its operational components explains in terms of classical physics what life and consciousness are, overcoming the broad conceptual limits of Schrödinger's 1944 negentropy and aperiodic crystal / code-script model.

Why Revolutionary – three Pillars

(I) New Informational Concepts and Info-Elements Introduced: Matter-related information as an active physical participant (hidden during structuration AB(I) and released during destructuration), info-creational field / info-connection (IC) as fundamental field managing YES/NO selection and explaining intuition, NDEs, RMEs, premonition; seven informational centers (Iknow-memory, Iwant-decision/will, Ilove-emotions, Iam-body status, Icreate-genetics/creativity, Icreated-inherited behavior/abilities, Ibelieve-belief/mentality); OIS (CASI+IC+CDC+IES – reactive adaptation) and PIS (MIS+GTS+IGG – maintenance/species survival) and IM (informed matter); binary YES/NO bit of life; embodiment/disembodiment mechanisms; ISHLS = CASI+CDC+IES/IRSS+MIS+GTS+IGG+IC universal, from bacteria to human; giving rise to consciousness in humans, decreasing its complexity with the decrease of brain info-capacity of operation, limited to detection of the Self in other inferior living structures.

(II) Mechanisms Explained Through Classical Physics (No Quantum Hypothesis Required): Structuration (A+B)+I => AB(I) and destructuration AB(I) => A+B+I via classical chemis-

try; negentropy via classical thermodynamics – heat elimination, protein folding structuration, compartmentalization, epigenetic absorption; YES/NO selectivity via classical lock-key receptor complementarity and electrical ALL-OR-NOTHING Na⁺/K⁺ polarization/depolarization and excitatory/inhibitory neurotransmitter competition – not quantum microtubules as in Orch OR; memory/thought as informational operator on info-creational field; epigenetic information-assisted evolution via classical molecular biology.

(III) Resolution of Understanding Problems in Related Domains – Validated by Applications: (A1) Universal Triangle of Reality (matter-energy-information); (A2) mind-body relation as mutual info-communication; (A3) Nature versus Nurture dilemma – talent inherited (nature, Icreate/Icreated) vs. learned (nurture, Ibelieve/Iknow) solved via epigenetics; (A4) certainty/uncertainty in CSER; (A5) information-matter bipolarity; (A6) fundamental info-transmission circuits; (A7-A8) attitude definition-quantification in bits with applications in social relations, politics, marketing; (A9) anterior/posterior cingulate cortex YES/NO hub; (A10) implication of trans-generational epigenetic mechanisms; (A11) hierarchical brain organization/evolution; (A12) music-based neuro-rehabilitation; (A13) beauty/ugly behavior and aggressiveness; (A14) addiction/mood disorders; (A15) mind-body equilibrium and health; (A16) microbiology/biotechnology/bioengineering; (A17) big data COVID-19 prediction; (A18) plant behavior; (A19) extension of consciousness to all living structures; (A20) mass-media mediated reality effects.

Acknowledgement

To my family, and to all those who have supported me in my professional activity and friends.

To my beloved parents, Professors Emanoil and Florica Gaiseanu, to my brother, Professor Constantin Gaiseanu, to my wife, Creator Maria Gaiseanu, in eternal memory.

ISSN: 2574-1241

DOI: 10.26717/BJSTR.2026.67.010458

Florin Gaiseanu . Biomed J Sci & Tech Res



This work is licensed under Creative Commons Attribution 4.0 License

Submission Link: <https://biomedres.us/submit-manuscript.php>

References

1. Schrödinger E (1944) What Is Life? The Physical Aspect of the Living Cell. Cambridge University Press 5 (11): 670-672.
2. Tononi G (2008) Consciousness as Integrated Information: a provisional manifesto. Biological Bulletin 215(3): 216-242.
3. Hameroff S, Penrose R (2014) Consciousness in the universe: a review of the 'Orch OR' theory. Physics of Life Reviews 11(1): 39-78.
4. Gaiseanu F (2016) Consciousness as Informational System of the Human Body. Consciousness and Life Physics, Cosmology and Astrophysics Journal 1(1): 14-25.
5. Gaiseanu F (2020) What Is Life: An Informational Model of the Living Structures. Biochemistry and Molecular Biology 5(2): 18-28.
6. Gaiseanu F (2023) Information and Informational Modeling in Living Structures. Researchgate. In book: Encyclopedia of the Information Science and Technology, Edition, p. 1-23.
7. Gaiseanu F (2025) What Is Life and What Is Consciousness: A Front-Line Informational Model and Applications, Cambridge Scholars Publishing.
8. Gaiseanu F (2023) Information: From Cognitive-Sentient Exploration of Reality to Predictive Big Data Assisted Informational Era. Romanian Journal of Information Science and Technology. ROMJIST 26(1): 78-99.
9. Gaiseanu F (2022) The Cognitive-Sentient Exploration of Mediated Reality: From Proto-Cognition/Epigenetic Informational Processes to Big Data Assisted Prediction. Chapter in Global Media's Preternatural Influence on Global Technological Singularity, Culture, and Government, p. 1-21.
10. Gaiseanu F, Adrian Gaiseanu, Ana Maria Gaiseanu (2026) Dependence/Independence in Decision-Making and Behaviour of Children/Young People During Their Evolution in Family and Society. Biomedical Journal of Scientific & Technical Research 65(2): 57432-57436.
11. Gaiseanu, Ana Maria Gaiseanu, Adrian Gaiseanu (2025) Attitude Control and Decision Optimization for Successful Management of the Personal and Professional Projects. Biomedical Journal of Scientific & Technical Research 63(5).
12. Gaiseanu F, Gaiseanu AM (2023) Reiki as a Communication Process: Between Philosophic Concepts and Experimental Application. Philosophy Study 13(10): 416-429.



Assets of Publishing with us

- Global archiving of articles
- Immediate, unrestricted online access
- Rigorous Peer Review Process
- Authors Retain Copyrights
- Unique DOI for all articles

<https://biomedres.us/>