

## INTERFACES THEORY APPLIED IN INFORMATIONAL BIOCOSMOLOGICAL ANTHROPOLOGY

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**Cornelia GUJA**<sup>1,2</sup>

<sup>1</sup> Academy of Romanian Scientists, 54 Splaiul Independentei 050094, Bucharest, Romania

<sup>2</sup> Scientific Advisor at “Fr. I. Rainer” Institute of Anthropology, Romanian Academy, Bucharest, Romania, email: [cguja@yahoo.com](mailto:cguja@yahoo.com), <http://www.corneliaguja.blogspot.com/>

**Abstract:** The paper intends to approach, from an anthropological point of view, near-death experiences (NDEs). The interdisciplinary character of anthropological sciences and their capacity to study human variability in its whole complexity makes it possible today to analyze the phenomenon of human experience (feeling) by NDE from a scientific, religious and philosophical point of view. The general character of the phenomenon identified by medicine on a large scale at present, as well as its individualized character demonstrates its cognitive importance. In this paper we attempt to analyze the phenomena of NDEs using the interface method which we developed in time. We started from the hypothesis that NDE is an interface between life and death, and, at the same time, between science and religion. Near-death experience is an Anthropological phenomenon, both individual and collective, that should be approached in its entire complexity and profoundness. It is highly relevant for practical and theoretical science and religion, as well as for understanding man’s and mankind’s origin, evolution and future.

**Key words:** Near-Death Experiences, interface, Informational Anthropology, archetypal communication.

### Introduction

The object of study in our paper is the *analysis of the significance and importance of near death experience* (NDE) from the anthropological (A.) sciences point of view, mainly that of the Individual’s A. [Guja, 2000], Informational A. [Guja 2008 b], and Biocosmologic A. [Guja, 2008 - 2014] NDE refers to an individual experience in which the human being crosses the stages of biological death, in a state of deep unconsciousness (coma), which is not final, as he comes back to life spontaneously or by medical intervention. After a NDE it was found that the state of health was improved, which is difficult to explain scientifically. This situation is due to the fact that the person has memories of certain experiences that are special

because of their content, many of them with symbolic religious fundament leading to benefic psychological transformations for one's life. [Carter, 2010; Eben,2012; Constantin-Dulcan, 2013] The events experienced during NDE are hard to describe because of the context that differs from ordinary life and resembles that in dreams. They have an informational impact upon other people precisely because of their novel content, of the effect on the survivor's personality and of the 'messages' he declares he got **perfectly lucid in that different reality**. It is important to notice that the terminology used by most people with NDE is the same, having common elements with words used by quantum and relativistic physics in describing certain characteristics of space and time in Micro and Macro universe. This fact happens regardless of age, sex, religious beliefs or professional training of the persons undergoing these near death experiences. The increasing number of such experiences lately is determined by the existence of modern resuscitating means and by medical technology maintaining the human organism alive (apparatus replacing fundamental vital functions) in the absence of one's own natural vital systems. [Constantin-Dulcan, 2013; Eben, 2012]

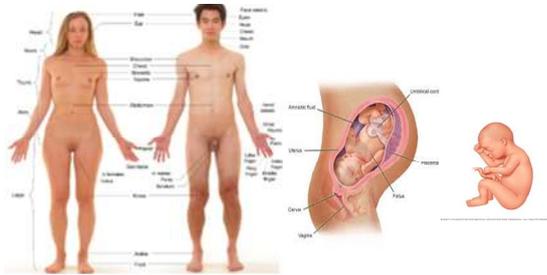
Birth, life and death are three fundamental biological – anthropological concepts which define our existence and vital route on the Earth as **self-aware human beings with conscience**. The evolutionist biological vision on life on the Earth, that of modern physics and cosmology, have created the coordinates in which we are trying to find our place in the Universe. We exist in a Universe-Cosmos because **we still do not have adequate knowledge and language** to define its limits and we call them 'infinite'. [Tipler, 1994; Bloom, 2000; Birx, 2006; Guja 2012 a] We place our biological evolution and human adaptation between two 'universes', one included in the other (concentric): Micro and Macro Universe, whose laws we have started to understand and use in our everyday life. From this point of view the human being behaves as **an anthropological interface** between the two infinities. We are therefore present **technologically-materially and with our mind-thinking** both at nanometric level in the Micro Universe and at the relativistic one in Macro Universe. [Guja,1993; Guja, 2013]. We have a brain about which we say that it thinks consciously, with a *mind* that is alternatively and parallelly **conscious-subconscious**, complementary, paradoxical, with material, atom-molecular, and also subatomic and quantum substratum. We often assert that we have a mind and an **emotive soul, entities** for which we have not found a special 'place'. We ascribe ourselves a **conscience** and we make great efforts to understand what and where it is. [Goleman, 2011; Humphrey, 2011] We lead our life cyclically in 24 hours, out of which **2/3 in activity**, from morning, when we wake up, until evening, when we go to sleep. During all this time we are in various degrees of consciousness. [Brazdau, 2013] We spend about **1/3 sleeping, in an unconscious state**, which has influenced our entire life style. We need a shelter to protect our vulnerability caused by the state of unconsciousness while sleeping.

All through anthropogenesis we have adapted the bio-psycho- socio-cultural life to the **annual astronomic solar, lunar and terrestrial cycles**, by organizing the entire bio-socio-cultural activity in an adequate **astronomic annual calendar system**. We, people, define ourselves scientifically as the result of a **long evolutive process, as the most advanced product, with a transitory existence, without individual finality, disappearing for good after death by legally certified biological degradation!** [Birx edit, 2006, \*\*\*, 2015]. These very brief anthropological curriculum vitae describes an anthropological human life route, with continuous life experiences and experiments on the Earth, which answer a series of questions and raise a lot more (Figure 1).

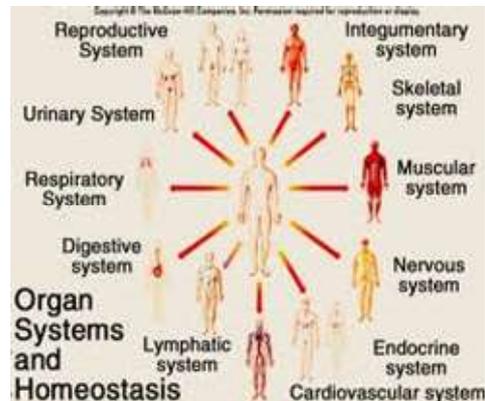


**1. DNA – interface of living cells - is the unique messenger of genetic information that ensures life continuity.**

1. Transcription of genetic information of the living;



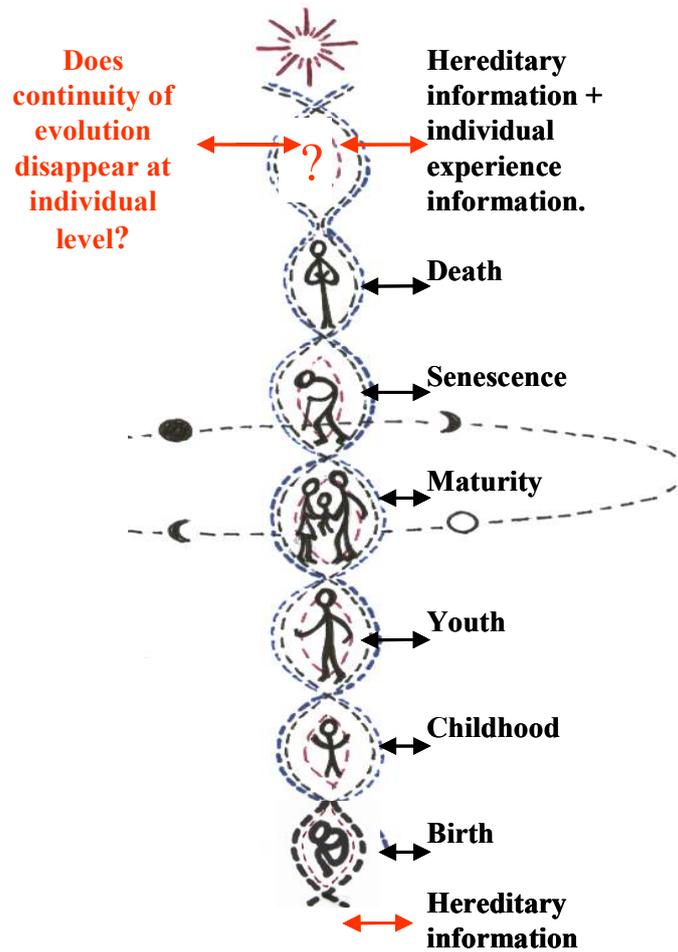
**2. The human couple, interface ensuring via offsprings, encoded transmission of anthropogenetic millenary experience and therefore continuity of human society .**



**3. The human organism, complex of systems and interface between systems, which performs individual , informational adaptation and development.**

2. The parents ensure transmission of anthropogenetic information to the offspring;

3. interdependent systems of organs ensure functionality and individual evolution - their deterioration finally determines death;



**4. Stages (interfaces) of terrestrial individual evolution in cosmic context with accumulation, elaboration and transmission of information.**

4. We have a birth with evolutive millenary origin, a unique conscious individual life during which we accumulate a lot of experience and produce information.

*Note: Is death the end of our personal evolution?*

*Does continuity of evolution disappear at individual and collective level ?*

**Figure 1.** Significant stages of the human being (ontogenesis).

We further tried to find a place for NDE, difficult to understand and qualify scientifically and religiously, within the context of culture in the present society. We related these experiences to the two poles of culture: Science and Religion, as

both are fields of human thought and activity, which essentially have common fundamental preoccupations in respect of our existence on the Earth and in the Universe. They have nevertheless, *forms of thinking and solving that are different and even opposed*, as science is based on *experiences and experiments* while religion is based on *authentic feeling and unconditional faith*. They have specific convictions, beliefs and arguments which are different, each asserting that their way is more certain, adequate, efficient or realistic. [Damerow, 1998; Eliade, 1967; Geertz, 2000] We will consider the two types of activities, Science and Religion, as two sides of the same human EXISTENCE, complementary, opposed, but not contradictory. At the social level they comply with a law that is similar to the law of contradictory complementarities formulated by modern physics in the field belonging to quantum mechanics. [Penrose, 1989; Cox, 2011] Both directions of perception of life experiences have common cognitive interfaces, which imply means of interhuman communication corresponding to the four astronomic contexts. These contexts are determined by the four fundamental cosmic causes in which life appeared on Earth: **Terrestrial-atmospheric (Ta); Lunar- ecological (Le); Solar-planetary (Sp); Cosmic (C)** (Figs. 2 and 3). Within this context of knowledge we formulated the hypothesis that: *NDE is a complex informational anthropological interface, an intermediate state, unstable, of primary communication, symbolic, archetypal between its own biological existence and an 'existence' which is due to the quantum and sub quantum substratum of its physical body*. In other words, the status of the human individual during NDE is a special status, intermediate between life and death, and may be caused by *a form of adaptation the human species* has to the astronomic interfaces of the cosmic context in which we evolved (Figure 2). [Guja, 2013 a, b, 2014] We refer to ubiquitous forms of adaptation, common to all forms of life, in which the human being can perceive the environment and can communicate by other means than the well known specific six senses (abolished in NDE). This way of communication, still unstudied, unknown, but often intuited, ensures man's survival in the terrestrial environment and to the astronomic contexts in critical moments, as they are archaic forms of adaptation for universal primary, archetypal stimuli gravitational, electromagnetic, etc field) [Geeze, Yung]. In the religious narrative form, these astronomic, cosmic stimuli may find an important cognitive-symbolic support: the paradise *with its music, light and ubiquitous luminiscent forms*. [Geertz, 1966; Jung, 1969] NDE, difficult to express in everyday language, contains description attempts using symbolic, religious elements referring to perception outside the senses, with a state of imponderability, of well-being, of inexpressible joy, with light and music. The formulations are close to those used by quantum physics regarding perception of space and time. [Carter (2010); Jung, 1964] Carter, Chris brings philosophical arguments based on evidence from NDEs, physics and consciousness research

that consciousness survives death. *What is the cause of these similarities in feeling with multiple cognitive roots? Where do these visions come from during NDEs, when the human being is unconscious but with present conscience which preserves memories and perceives stimuli outside the sense organs, in the interface during NDE?* [Dumitru, 2013; Eben, 2012]

### Materials and methodology

**Study Materials.** Our study is based on the results of our methodological and laboratory researches in the fields of biophysical A. (electrographic explorations, bioelectric types), A. of the Individual (longitudinal, ontogenetic studies, types of development), Informational A. (informational, archetypal communication and adaptation), biocosmologic A. (adaptation to astronomic interfaces) [Guja, 1975-2014] and on materials and data referring to NDE from the bibliography [Constantin-Dulcan, 2013; Eben, 2012; Tipler, 1994] As shown before, near death experience (NDE) *is an individual experience in which the human being crosses the stages of biological death, which is not final, as he comes back to life spontaneously or by medical intervention.* This **individual experience** amounts nowadays to thousands of cases and has been brought to public knowledge by many publications. During NDE some people undergo disturbing moments, *their personality changes* after they come round and we do not have enough information and adequate terminology to explain them. They seem to be experiences in a particular state of 'thinking' with distinct cerebral activity from the normal one, sometimes biologically non-functional, as **the person is declared in a state of clinical death.** *Clinical death* is a situation at the limit between life and death, in most cases the patients being in medically critical situations with their *biological vital functions (cardio-respiratory activity) abolished for a certain period of time.* Clinical death is actually the period of time when the organism can no longer react to various internal and external stimuli. Coming back to life for some individuals, either by resuscitation or spontaneously, is sometimes accompanied by novel feelings and perceptions, difficult to explain with scientific arguments. Their description also has a significant religious content and **the language used is similar** with all the individuals, regardless of sex, age, education or religion. We tried to analyze NDE as an interesting and important *anthropological experiment* in which the main systems of the human body: the heart, the lung and the brain are partially or entirely non-functional. **Resuscitation proper** consists in resuming the automatic activity of these centres, which rhythmically discharge nerve impulses in the muscles coordinating blood circulation (myocardium) and breathing respectively (intercostal muscles and diaphragm). The resuscitation interval (from the moment the vital functions stop until they are resumed) is actually the phenomenon known as *clinical death.* This

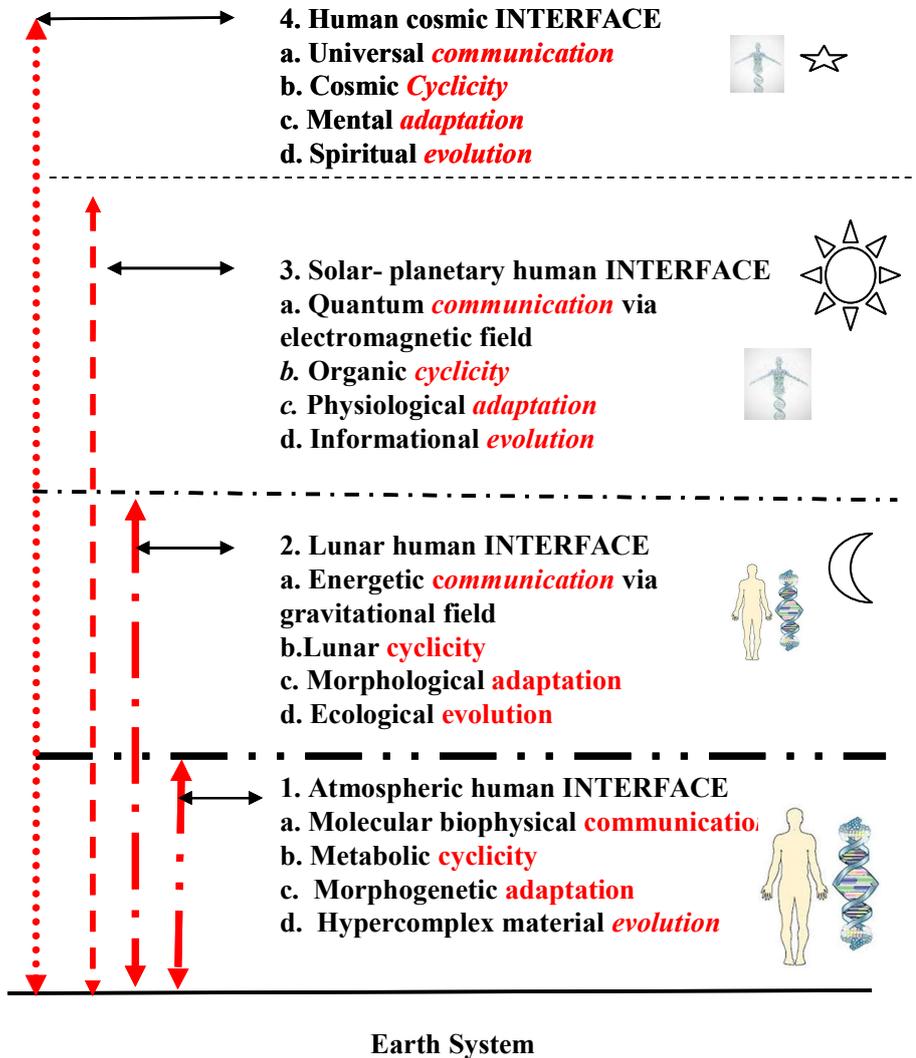
resuscitation interval or the period in which an organism may be in clinical death depends on the nerve cell viability. The phenomenon becomes irreversible the moment the cerebral nerve centers are *devoid of oxygen supply for a period longer than 5-10 minutes*. The interval in which cardio-respiratory resuscitation is still possible also depends on age, sex, various diseases or affections of the body. *There have been situations in which patients considered deceased could be resuscitated after hours, days or months, i.e. long after resuscitation was considered possible*. [Constantin-Dulcan, 2013] The fact that people in clinical death speak about certain phenomena like coming out of the body, seeing images or having other perceptions may be *explained only partially* through the activity of cortical centers, which may be present only partially during the entire resuscitation period.

**Methods.** NDE cases are appreciated through the medical diagnosis, based on the functional state of the human individual's organism systems. We will discuss this from the anthropological point of view, using personal methods and viewpoints developed in the last decades in my quality of a biophysicist, physiologist and anthropologist. We tried to make the data coherent in order to help us find the *NDE place among the common experiments of life* and appreciate, as correctly as possible, the information these medical cases bring within the general context of the individual and social human phenomenon. We appealed to *systemic thinking* from the systems theory applied in modern medicine, biology and anthropology. We know that, in medicine, the human organism is described scientifically and practically by means of an assembly of systems: 12 systems of organs functioning according to cybernetics principles: the **nervous system, muscular system, skeletal system, circulatory system or cardiovascular system, respiratory system, digestive system, integument system, urinary system, reproductive system, immune system**. Their functionality, the interconnections among them and their part in the homeostasis of the organism and the cause of dysfunctions that lead to the disease and to death are understood with the help of the systems theory and cybernetics [Penrose, 1989; Popp, 1992] *Cybernetic thinking* lies at the basis of the theory of connections and informational control in the human body. *There are nevertheless aspects that cannot be explained through these methods and their number is growing*. The human organism is much more complex than these theories can describe. We have in view the limits of the concept of system on which the materialistic conception on life is based. It has included in its own definition the processes of communication but not the possibility to sense their specific manifestation and application: a) *material*, through substances, b) *energetic*, through fields, *informational* through universal, archetypal, symbolic forms. [Guja, 2000, 2001, 2004 ] We will try to demonstrate that these communication modes, which lie at the basis of man's life, are essential processes for the interface

statuses which are *unstable, transitive, unrepeatable statuses* ensuring systems adaptation and evolution. The characteristic status for the system is stability. ***The characteristic status of interface is instability given by communication processes. Within the cybernetics systems and interfaces are intrinsically interdependent but distinct and opposed as adaptive tendencies, the former ensuring stability and conservation and the latter change and evolution.***

Adaptation to and evolution in the Micro and Macro Cosmos also require other modalities of approach besides the 'materialistic' concepts which define our existence studied at human scale. We are made of molecules and atoms, force fields, quanta, elementary particles, etc. of which only specialists know to be at microscopic level and beyond it. Our communication and interdependence with the environment is multiple and multilayer. Some of these aspects are already studied by quantum physics, complexity theory, nanotechnology [Bloom, 2000; Popp, 1992, Stanciulescu, 2003] For this study we considered the concept of *interface* adequate (distinct from and complementary to the concept of *system*) – as well as the method of *interfaces*. [Guja, 2008 d] The concept of interface is a paradigm of modern science, yet insufficiently outlined and distinct from that of system, with which it is often associated and mistaken. We consider this an important opportunity to represent, describe and study the specificity of NDE, of maximum instability at the limit of life by defining it as interface, a transitory ***status of communication between two distinct unstable statuses***. We will present NDE as an intermediate, successive and reversible interface among the systems of the living functional organism before and after this experience, using the method of the four astronomic interfaces, archetypal informational thinking and Aristotle's method of the four causalities described by us in other papers. [Guja, 2008 b, 2013 a, 2014].

We underline the fact that the fundamental sources of *diversity and variability* of bio-psycho-socio-cultural anthropological events (the study field of Anthropology) [ ] are contained in the ***adaptation, evolution and cyclicality*** laws that operate in the ***metabolic processes of life***. (Table 1). [Birx, 2006; \*\*\*2015] Being confronted with individual particular biological situations such as NDE, when the main systems of the body (circulatory, respiratory, cerebral) are not functional, or in great difficulty for a variable period of time, is an opportunity to be used constructively. The purpose is to better understand the capacities and limits of human existence and maybe the meaning and logic of NDE and individual death within the context of cyclic, continuous evolution on Earth. Owing to the novelty of its manifestation and the content of the information, NDE is at the interface between Science and Religion being ***genuine cognitive anthropological self-experiences***.



**Figure 2.** The diagram of human evolution and adaptation by interdependence of the 4 fundamental (simultaneous) astronomic INTERFACES (I.). Human life on the Earth has evolved cyclically and adapted to the existing exterior, permanently communicating with it consciously or unconsciously.

1. I. Atmospheric; 2. I. Lunar; 3. I. Solar-planetary; 4. I. Cosmic.

The human being has, recorded in its genetic patrimony, the entire evolutive experience of life on Earth, which ensures its living and survival. By means of: *communication* ( a. universal , quantum, energetic, biophysical), *cyclicity* (b. cosmic, organic, lunar, metabolic), *adaptation* (c. mental, physiological, morphological, morphogenetic), and *evolution* (d. spiritual, informational, ecological, material), the human individual in critical conditions, such as the experience of approaching death, may have various forms of perceiving reality , unspecific to the 6 senses. It may use other ubiquitous capacities referring to sensing and experiencing space, time, energies and quantum fields in the Universe. The great extent of sleep, 1/3 of our existence, when our senses have minimum receptivity, may be an adaptation ensuring survival in specific critical conditions. [Guja, 2013, 2014]

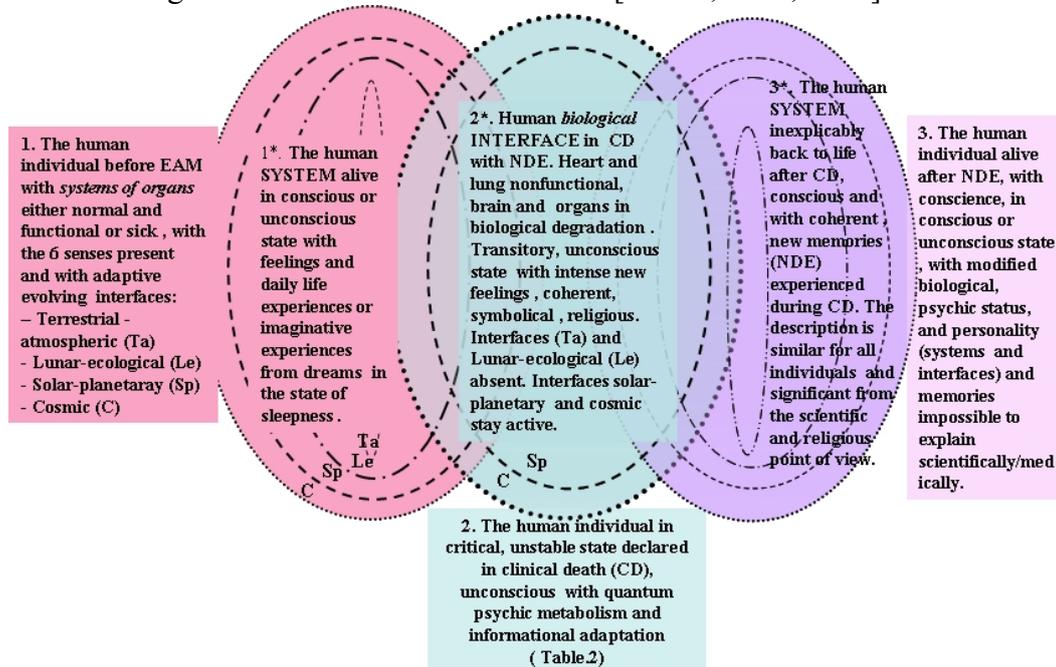
**Table no. 1** – The matrix of hyper complex evolution and adaptation of human life processes:  
 I. Cyclic II. Metabolic III. Adaptation IV. Evolutive variability, the 4 astronomic interfaces:  
 1. I. Terrestrial- atmospheric; 2. I. Lunar ; 3. I. Solar-planetary; 4. I. Cosmic and the  
 4 Aristotle's fundamental causes : material, formal, efficiency, final, which determine the  
 human evolutive transformations. [Guja, 2014]

<b>INTERFACES</b>  <b>Causes</b> ----- <b>Fundamental evolutive factors</b>	<b>1. TERRESTRIAL-ATMOSPHERIC</b>  <b>A</b>  <b>Material</b>	<b>2. LUNAR</b>  <b>Formal</b>	<b>3. SOLAR-PLANETARY</b>  <b>Efficiency</b>	<b>4. COSMIC</b>  <b>Final</b>
<b>I. Cyclic</b>	<b>I / 1</b> <b>Metabolic</b> <b>Cyclic</b>	<b>I / 2</b> <b>Lunar- phasic</b> <b>Cyclic</b>	<b>I / 3</b> <b>Annual- seasonal</b> <b>Cyclic</b>	<b>I / 4</b> <b>Evolutive</b> <b>Cyclic</b>
<b>II. Metabolism</b>	<b>II / 1</b> <b>Biophysicochemical</b> <b>Metabolism</b>	<b>II / 2</b> <b>Biochemical-energetic</b> <b>Metabolism</b>	<b>II / 3</b> <b>Psychic</b>  <b>Metabolism</b>	<b>II / 4</b> <b>Quantum</b>  <b>Metabolism</b>
<b>III. Adaptation</b>	<b>III / 1</b> <b>Biochemical</b> <b>Adaptation</b>	<b>III / 2</b> <b>Energetic</b> <b>Adaptation</b> <b>a</b>	<b>III / 3</b> <b>Informationala</b> <b>Adaptation</b>	<b>III / 4</b> <b>Cognitive</b> <b>Adaptation</b>
<b>IV. Evolutive variability</b>	<b>IV / 1</b> <b>Physical (body)</b> <b>Variability</b>	<b>IV / 2</b> <b>Functional</b> <b>Variability</b>	<b>IV / 3</b> <b>Efficient</b> <b>Variability</b>	<b>IV / 4</b> <b>Spiritual</b> <b>Variability</b>

## Results and discussions

**Results.** We will further present the succession of our reasoning to argument and try to demonstrate the significance and importance of NDE for the patrimony of anthropological and religious knowledge and the impact upon our daily life. We concentrated *the results of our methodological study* in two diagrams (Figures 3,4) in which we tried to suggest the NDE significance using the notion of interface, *from the ontological point of view* (Figure 3) in the two special states before and after NDE. We also tried to illustrate its *gnoseological significance* referring to the coexistence of the fields of Science and Religion, of culture and knowledge in general based on the symbolical content of the experimental data

obtained in NDE (Figure 4). It is worth mentioning that in this study we resorted to general meanings for science, religion and culture. We considered that the *scientific community* on which SCIENCE is based is represented by the group of all the scientists who interact. It includes many sub-communities who work in different scientific fields and in different institutions. Interdisciplinarity and interinstitutional activity are their specific way of activity based on applying the scientific methods of research. The *religious community* lying at the basis of RELIGION is defined in various ways; these communities do not collaborate, their components being sometimes conflictual. The anthropologist Clifford Geertz defined religion as a "system of symbols which acts to establish powerful, pervasive, and long-lasting moods and motivations in men by formulating conceptions of a general order of existence and clothing these conceptions with such an aura of factuality that the moods and motivations seem uniquely realistic." The sociologist Durkheim defined religion as a "unified system of beliefs and practices relative to sacred things". The psychologist William James defined religion as "the feelings, acts, and experiences of individual men in their solitude, so far as they apprehend themselves to stand in relation to whatever they may consider the divine".) In order to define *culture* we took over Geertz' definition: Geertz outlined culture as "a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate, and develop their knowledge about and attitudes toward life. [Geertz, 1966, 2000]



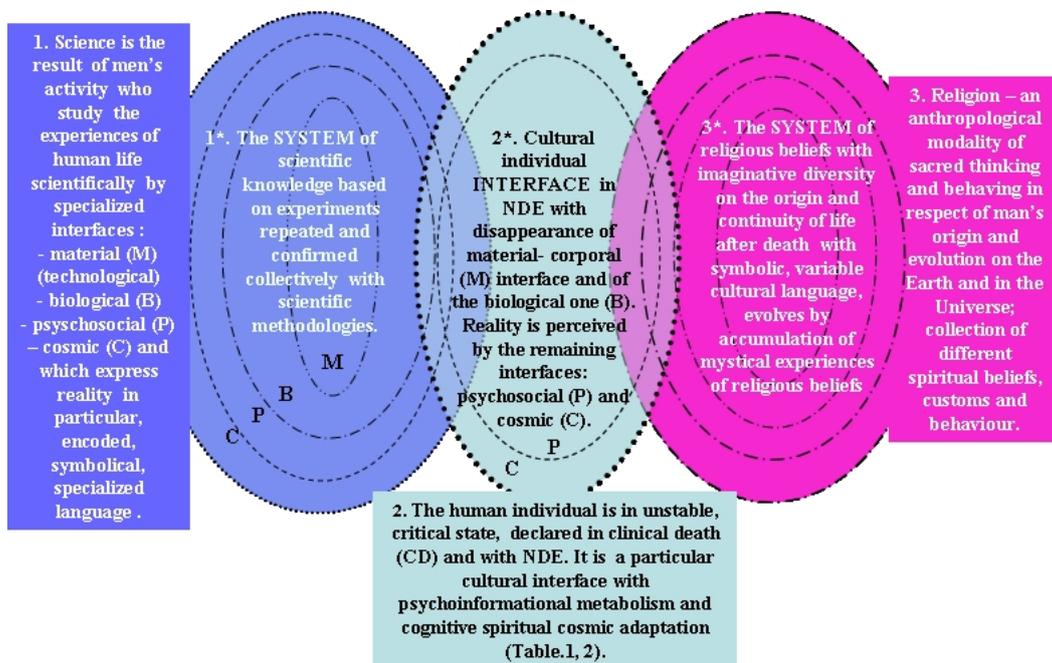
**Figure 3.** The human individual alive before, during and after the experience of clinical death (EAM).

1, 1\*. The human individual alive in conscious or unconscious state with an organism made up of interdependent system of organs that ensure functionality and integration in the external environment by means of 4 adaptive astronomic, cyclically evolving interfaces mediated by a complex metabolism (Table.1, 2);

2, 2\*. The human individual, interface between the initial state and the recovery to life. The organism is in unconscious status in declared clinical death with non-functional cardiovascular and respiratory systems, lacking perception of the 6 specific senses;

3, 3\*. The human individual after coming back to life with improved health conditions and with the memory of new, special feelings.

*Note: The common factors in the tree states could be the presence of the interface Individual awareness and Collective Unconscious.*



**Figure 4.** Science and Religion, complementary fields of human CULTURE, have as permanent interface the human individual with his normal or difficult, critical (NDE):

1, 1\*. Science is a human activity of elaboration and systematization of scientific knowledge on Nature and the Universe;

2, 2\*., The human individual is a knowledge generating factor through his new personal anthropological experiences and self-experiences of clinical death (NDE). Man is a receiving interface of information from the entire cosmic context in which he develops.

3. 3\*., Religion, as an assembly of various sacred beliefs and human behaviour, interprets life experiences symbolically according to these beliefs, in the absence of scientific experiment.

*Note: The common factors in the tree states could be the presence of the interface Individual awareness and Collective Unconscious.*

Applying the method of astronomic interfaces (Figure 3), it follows that in NDE interface in the human organism, two adaptive astronomic interfaces stay active – the solar-planetary and cosmic. They are real interfaces, reversible intermediate states of survival and intercommunication at primary, universal, archetypal level using means of communication belonging to universal knowledge (conscience) and to collective unconsciousness, i.e. symbolic, primary, archetypal forms. [C.G.Yung, 1969, Constantin-Dulcan, 2013] They are forms of living and surviving between terrestrial, normal, hypercomplex human life and a partial, material death. The descriptions of certain events perceived during NDE are made in a language that brings together the languages of science and religion. In this sense we have already pointed out that *NDE is at the same time a theoretical, cognitive interface from the cultural point of view, an interface between Science and Religion (Fig.4)*

**Discussions.** Any human experience consists finally in a testimony (communication process) communicated to the people in an encoded language, which can be scientific, religious, popular, etc. Telling about an experience of any kind is actually an interface between the old and the new, the person contributing in this way to increasing the knowledge of the human society. *The repeated experiences, also confirmed methodologically become part of the collective scientific patrimony, the others waiting for their confirmation.* Neither of them is a final truth or untruth. The person may have or not the adequate language to communicate the experienced events. ***For the novel facts the adequate communication language, either scientific or religious, may be absent in that historical moment and at the same time corresponding to the new phenomenon and lived experience.*** We consider that in NDE we are in this situation. Anthropology, medicine, biology, psychology, religion, etc cannot ignore or minimize the existence of NDE.

In what the already presented personal experimental scientific support is concerned, let us point out that the great number of electromagnetic phenomena is well known, accompanied by luminous phenomena in the human organism dominantly present in NDEs . We have studied them longitudinally in the human individual ontogenesis for a long time in the individual's laboratory of biophysics, physiology and anthropology, using the electrographic method and described bioelectrical types of adaptation. [Guja, 2004, 2008 c] We based our experiments on the present knowledge that in everything that surrounds us, the structure of the human organism included, there is an atom-molecular substratum and fundamental fields with elementary quantum substratum, well-known in detail. The fact that there is a ***language similarity*** between their scientific description, certain NDE descriptions and religious terms or concepts (haloes, chakras, etc) might be an indication of their cognitive value in relation with new 'deep realities' still unexplored, which await our answers. [Guja, 1993, 2000, 2001]

The lack of an adequate scientific language to describe them points to the insufficient or incorrect approach in interpreting them scientifically or religiously. The language used by quantum mechanics is symbolic, conventional as we do not have technological possibilities to directly access that reality; we only have direct experience and its realization. NDEs, outside biological functionality of the body systems may be a real interface to access astronomic space and time by quantum and sub quantum modalities of the organism, hence the feeling of floating outside the body, of weightless. The ubiquitous presence of light (electromagnetic field), different from the one sensed optically by means of our eyes is natural as long as solar energy, through the electromagnetic waves, is the ubiquitous source in our life on the Earth, to which we have adapted ourselves.(not only in the optic field but also gravitational). There should be modalities to sense the corresponding forces (electromagnetic and gravitational) at all our levels of organization, not only material, but also energetic, informational (archtypally encoded) and quantum. Let us remember that the process of photosynthesis with plants works with the photons of the electromagnetic field, of the light coming from the Sun, i.e. at quantum level. [Cox, Forshaw, 2011; Guja, 2012]

Applying the method of astronomic adaptive interfaces to the cosmic context and Aristotle's four causalities (Figure 2, Table 1) ). [Guja, ] one can see in detail the four levels of interfaces – fundamental causes (Aristotle intuited) which determined adaptation and evolution of whatever existed on the Earth during the geological eras. [Guja, 2013, 2014] *The interface method we developed in time brings arguments in this sense.* [ Guja, 2011, 2012, 2013, 2014]

Man, studied in the evolutive cyclic succession, diurnal and annual, oscillates alternating the statuses of conscious vigil with those of unconscious sleep, successively passing through the annual season requirements, continuous, every day and every year along the cosmic trajectory. *We wonder why sleep occupies such a long time – one third of the diurnal vital cycle- when man is unconscious and consciousness seems to be suspended? Why has evolution led man towards an ever more developed self-awareness and, at the same time, has selected and preserved the need to sleep, as important as the need for air and food?* What other part sleep plays besides restoring the body? What is its part in anthropogenesis, what function and advantage do these transition interfaces bring in the unconscious status, between man's conscious states for man's adaptive evolution?

### **Preliminary Conclusions**

One preliminary conclusion of our study is that *NDE is a critical interface*, very significant in our existence as human species (transitory phenomenon between two fundamentally different states)- the status of the living human

organism and man's mental state in special conditions of unconsciousness, coma, NDE. Such an experience of the living nature, like NDE, allows access to mental states, otherwise difficult to study, for instance access to 'subconscious conscience' and to our individual unconsciousness. Statements like seeing the film of one's own life or remembering significant events from people's life (in the absence of normal cerebral activity) which appeal to axiological judgement may open new ways to study nature and the possibilities of consciousness. NDE is like sleep with dreams ***in the absence of the activities of fundamental systems of life*** (cardiac, respiratory and cerebral activity) which we experience every night while sleeping. The resemblance of these states with the fundamental states of aggregation in classical physics may not be far-fetched or incompatible. Let us draw a parallel between the human individual and a molecule of water H<sub>2</sub>O, for instance, and let us imagine how the water molecule passes through the states of ice, liquid and vapors. In these states there are cyclic ***reversible critical points*** in the entire nature (water cycle) which represent 'different worlds': Polar ice, rain water and sky clouds. The difference between states is fundamental with ***essentially different laws***. The information bearer, man or the water molecule (the molecule belonging to the atomic and quantum dimensions of the micro universe) become different reversible interfaces, preserving their deep cosmic identity: H<sub>2</sub>O. The 'Otherworld' and resurrection described by religions do not seem to be mere cultural motivational palliatives of man meant to justify his existence. It is rather a resultant of the universality of life and the laws of cyclic adaptive evolution of everything surrounding us. [Guja, 2008 a; 2009, Day, 2013] It is due to the two Poles of the Universe infinitely distant but continued one into the other (Micro and Macro Universe). Another preliminary conclusion is that using the method of astronomic interfaces may lead to a differentiated and also simultaneous analysis of man's fundamental types of adaptation to the environment, either terrestrial or astronomic (cosmic). (Figure 2, Table. 1). In the case of NDE this method enabled us to notice certain specific types of adaptation to the astronomic space in moments when the communication possibilities of the organism through the organs of the sense systems are reduced to minimum or are even temporarily suspended. In the work *The Sacred and the Profane*, Mircea Eliade [Eliade, 1967] observes that while contemporary people believe their world is entirely profane, or secular, they still at times find themselves connected unconsciously to the memory of something sacred. It's this premise that both drives Eliade's exhaustive exploration of the sacred - as it has manifested in space, time, nature and the cosmos, and life itself - and buttresses his expansive view of the human experience. Today the Anthropology of Death is the special topics in medical anthropology and treats the death as The Beginning and the End of Things". [Birx, 2006] Dumitru Constantin-Dulcan underlines that : *we are both matter and spirit, reducing the existence of the world only to the physical*

*dimension means founding our life on an incomplete truth.* [Constantin-Dulcan, 2013] The experience of clinical death is an individual anthropological phenomenon that should be approached in its entire profoundness and complexity. It has a special *cognitive scientific* relevance, both practical and theoretical for understanding the origin, evolution and future of man and mankind. Such anthropological conduct as: self-observation, self-experience and self-awareness are methods that should be applied in every human individual's daily life in order to ensure an efficient personal and collective activity.

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