

# Correlations between Human Adaptation, the Earth-Cosmos Context and Aristotle's Four Causalities

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The Earth, which is a planet of the Solar system, was formed and evolved as part of the WHOLE, in close connection with the evolution of the Universe. The awareness, knowledge, and understanding of our coexistence with the Universe may clarify a series of obscure problems of our existence, and, at the same time, may bring solutions for other acute problems which our modern society has to face, such as energy, nature preservation, the origin, evolution and adaptation of the living and especially of man to the environment, etc.. This paper is trying to theoretically break up the concept of "environment" into four fundamental contexts: terrestrial, lunar, solar-planetary, and cosmic context. We intend to approach the four contexts that distinctly and simultaneously influence life on the Earth using the interface theory which we developed in Informational Anthropology, Integronics and Biocosmological Anthropology. We consider that the living adapted and developed in a differentiated way according to the impact of these contexts. They may be the source for the four causalities Aristotle intuited, as well as the cause of many still unknown phenomena that diversified man's evolution and variability (Ackrill 1997; Falcon 2008).

*Keywords:* system/interface, context, coexistence, differentiated adaptation to fundamental contexts

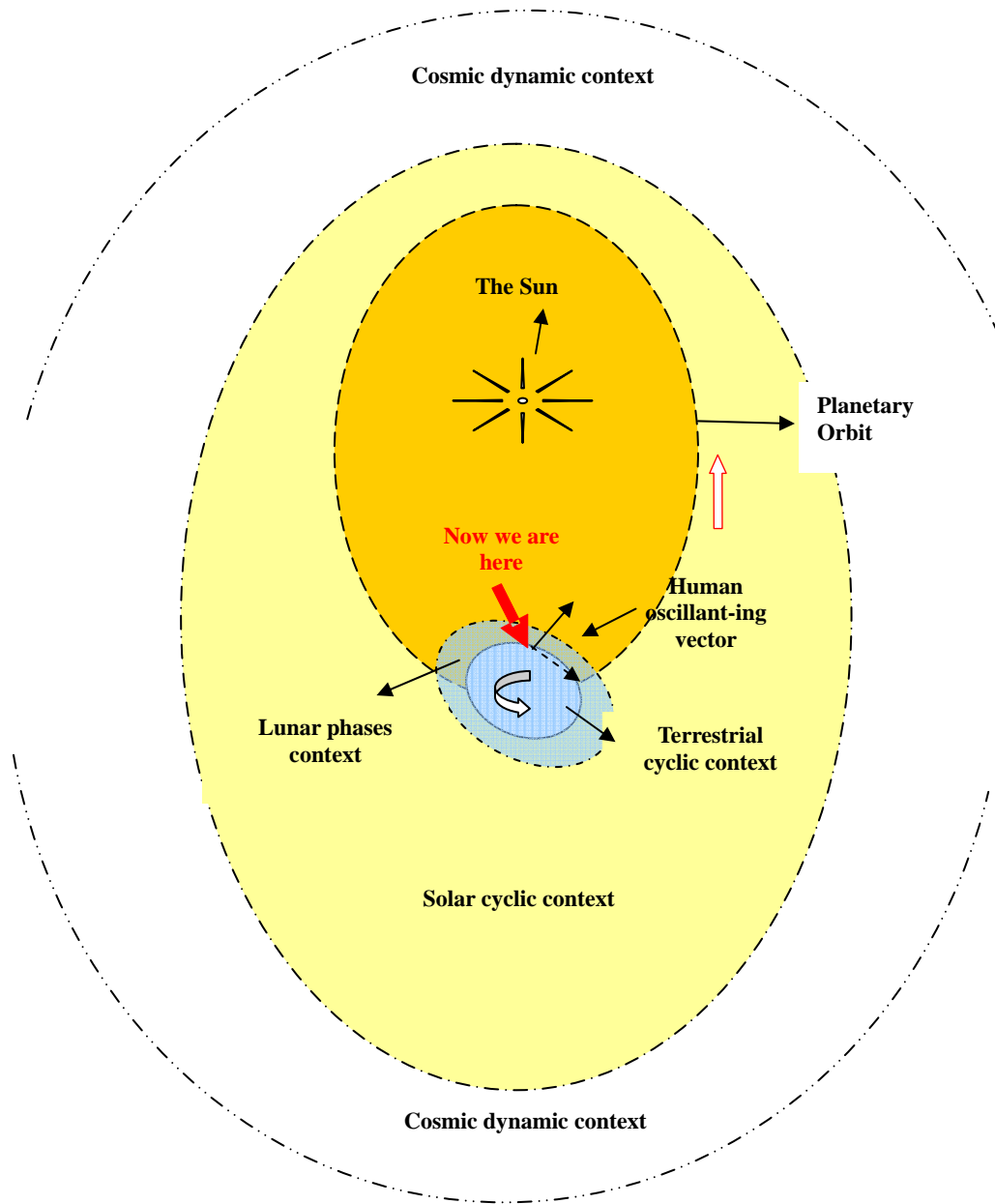
## 1. Introduction

Our paper has in view to describe in detail the part played by the influence of the cosmic context upon our life on Earth and the adaptive value this part has for man's evolution. The fact that we became aware of our being an integrated part of the Universe has always been present with human society. It has taken various shapes, from mythology to modern sciences and has been a difficult process, full of enigmas (Boncinelli 2006; Carneiro 2005; Capra 2002, 1982). The present study continues to develop the problems approached in our works on Informational Anthropology, Biocosmological Anthropology, Medical Anthropology, and the Individual's Anthropology, mainly in "*Elements of Biocosmological Anthropology. Informational Communication by Archetypal Forms*" (see Figs. 1 and 2) (Guja 2008; 2010, 78-79; 2011, 407-426; 2012a; 2012c; 2012b; 2013). The motivation of these researches consisted in our attempt to interpret, from an *interdisciplinary anthropological* perspective, the results of our studies on the great *variability of characteristics* and the adaptive capacity of the human being, especially the particular aspects studied—the

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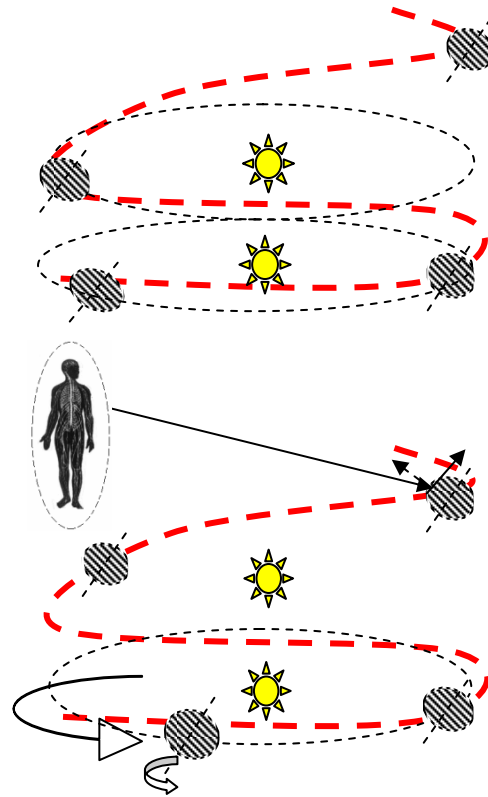
bioelectromagnetic characteristics of the human body (see Fig. 3) (Guja and Iliescu 2001; Guja et al. 1994, 67-74; 2002; 2004, 95-109; 2008b).



**Fig. 1. Schematic Representation of the “Terrestrial Environment” Taking into Account the Cosmic Context with Which It Coexists (Guja 2012a; 2012c).**

Fig. 2 schematic representation of the complex trajectory of nonliving and living objects, of man (human oscillating vector), existing on the Earth owing to its rotation around its own axis and, at the same time, to the annual rotation on the solar elliptical orbit (the axis of the Earth being tilted compared to the elliptical plane) which determines the existence of seasons. During one’s life, the individual diurnal trajectory is made up of the two types of rotations. The Earth yearly makes planes that are approximately paralel, successively equal as number “with the age” in years of the moving object (Guja 2012a; 2012c). This dynamics is common to all the

terrestrial objects, phenomena, micro and macroscopic structures. The evolution of terrestrial phenomena should simultaneously observe the laws specific of the various contexts with which they coexist and the common universal laws. The human being could be conceived like a cell (atom) in a huge organism (Guja and Baciu 2008a, 164; Sorokin 1947). The resultant is a complex cyclic-helical trajectory. In addition to the rotational speed of the earth spinning on its axis, the earth is also speeding at about 66,660 miles per hour (107278.87 km/h) in its revolution around the sun once ever 365.2425 days.



**Fig. 2. Schematic Representation of the Complex Trajectory of Nonliving and Living Objects, of Man, Existing on the Earth.**

Our objective was to find modalities to study and consider these aspects from *an anthropological, integralist* point of view, more systematically and thoroughly. We tried to refine the *analysis of the causes* lying at the basis of man's development and adaptation to the "terrestrial environment" within the context of the Universe. For this purpose, we started from the *hypothesis* that the cosmic context of the Earth may be conceived as being theoretically divided (explained) into four components, divisions, sub-contexts with distinct identities, but in close organic interdependence—coexistence. It is important to mention that these contexts included one into the other and therefore one should study their *common as well as specific laws* acting inside, similar to the component parts of an organism (see Figs. 1, 2 and 6). The differentiated as well as integral analysis of these contexts and the interpretation of the *influences (causes)* upon the terrestrial systems and phenomena suggested the idea that they could be associated with Aristotle's four causalities (see Tables 1 and 2). We consider that the aspects under discussion make it possible to solve many critical problems in our modern society, such as the problem of power, conservation of nature, the origin, evolution, and adaptation of the living in general and of man in particular to the environment (Boncinelli 2006; Bertalanffy 1976; Capra

2002; 1982; Guja 2013, 1-12). It could also find answers to questions such as: How was deoxyribonucleic acid (DNA) formed? Why is it like that? (double helix like a spiral); where does *the human individual's uniqueness* come from in comparison with the *unity of the species*? Why are the functions of the vital systems of organisms cyclic and how can we correct the disturbance of this cyclicity? (Turnbull 1985; Carneiro 2005; Khroutski 2011, 144-146; Guja 2012c, 130-145); it could also help us to better understand and interpret the forms of the evolutive process such as diversification, convergence/divergence, multiple adaptation, discontinuity, innovation, progress, etc. (Boncinelli 2006). It may help us understand why consciousness appeared as a means of communication with the cosmos. We will further try to develop all these ideas.

## 2. Proposed Materials and Methods for Study and Consideration

For a more detailed, anthropological, scientific, systematic approach of the specific, and non specific contextual influences upon the variability of characteristics that describe the living beings, man, and the group he belongs to, we considered “the environment” in which we live as a coexistence, an overlapping of four relatively independent contexts which operate simultaneously on the existence on the Earth: the geophysical context, the lunar context, the solar context, and the cosmic context (see Figs. 1 and 2). The geophysical context includes the System Earth together with the multitude of adjacent interfaces, specific areas of interaction such as the hydrosphere and the atmosphere. At the same time, it specifically interacts with the lunar sphere, with the planetary, solar sphere, and with the Cosmosphere (The Encyclopedia of Earth <<http://www.eoearth.org/>>). In order to avoid any ambiguities in interpreting the present paper, we consider it useful *to define* the main terms of the discourse. We did our best to use the most general meaning of the terms accepted by the scientific language and gave certain details and specifications developed in our previous works (Guja 1980, 205-220; 1985, 187-199; 1993, 190; 2000, 256; 2008a, 450; Guja and colab. 1997a; Guja et al. 1997b; 1998; Guja and Baciu 2008a, 164).

*System*—Any object or phenomenon in nature characterized by stability over a certain period of time owing to the existence of an assembly of constant relations of its component parts (Bertalanffy 1976; Guja and Baciu 2008a, 164).

*Interface*—Any process, phenomenon, or spontaneous relation status which is due to the interaction of two or more systems (Guja 1993, 190; Guja and Iliescu 2001; Guja and Baciu 2008a, 164). The interface may cover an area, a surface, or a point which forms the common border of the adjacent regions, objects, substances, or stages by means of which the systems interact both at hardware and software levels. According to the degree of complexity, they can be placed in order hierarchically: interface 0, I, II ... n. They are in permanent dynamics and instability, because in reality, there are no totally closed systems. They communicate by means of substance, energy, or information (by shapes—archetypal, fractal, etc.). For example: the electronic layers and levels of the atomic nucleus, the cell membrane, the human tegument, atmosphere, cromosphere, etc. (Guja and colab 1997a; Guja et al. 1997b).

*System/interface*—The couple of concepts which describes a system with its interfaces that are due to the states of interdependence with other systems (Guja 1993, 190; 2008a, 450). *Any kind of objects have, at the same time, the quality of system and interface having in view that there are no completely closed systems* (Guja 1993, 190; Guja et al. 1994, 67-74; Guja and Baciu 2008, 164).

*Information*—Fundamental property of matter to communicate in an encoded manner by means of shapes in the same way mass defines the quality of matter to be attracted by gravitation and energy the quality to

remotely influence by its field (Guja 2008b). Information is the form of communication specific of the interface.

*Coexistence*—Steady state of interaction (a limited time interval) of a system with another system or other systems. The significance of the concept is roughly similar to that of compatibility. For example: coexistence of atoms in molecules, functioning of organs in the body, the evolution of the Earth and the Moon with the solar system, etc. (Guja 1993, 190).

*Non-coexistence*—The state of the interface referring to the existence of incompatible relations for two or several systems, which leads to disturbances, conflict, and disappearance of interfaces (Guja 1993, 190).

*Context*—All surrounding systems and interfaces in which a process exists and is developing (Guja 2012b, 19; 2012c, 130-145; Guja 2013, 1-12).

*Cyclicity of context*—Specific cycle induced by a certain context. For example: the day/night cycle owing to the rotation of the Earth around its axis, within solar context, the phases of the Moon, seasonal cycles induced by the (tilted) rotation on the ecliptic, cosmic evolutive cyclicity (Guja 2012b, 19; 2012c, 130-145; 2013, 1-12; Sorokin 1947; The Encyclopedia of Earth <<http://www.eoearth.org/>>).

*Adaptation*—Transformation process in the structure and functioning of an organism (system) that is due to the variation of the interaction with another system (or other systems) for coexisting with them. For example: wings to fly, fins to swim, bipedal posture and verticalization for a better control of the environment, cerebralization for diversifying the forms of control, regulation and communication (Bertalanffy 1976; Bejan 2000; Boncinelli 2006; Guja 2013, 1-12).

*Process*—In philosophy, science and systems theory the concept of process has a unifying part which operates in different systems and contexts, being a characteristic of the dynamic systems.

*Aristotle's causes*—Four causes that refer to four types of fundamental answers to the question “Why?” is one thing as it is. They characterize the principles of Aristotle's thinking regarding the cause of change and movement of things: *the material cause, the formal cause, the efficient cause, and the final cause* (Ackrill 1997; Falcon 2008).

*Archetypal code*—Primary, fundamental communication code: the periodic table of elements, the electromagnetic spectrum, the genetic code, cultural symbols (Jung 1969; Guja and colab 1997a; Guja et al. 1997b; Bejan 2000; Guja 2013). They lie at the basis of archetypal informational evolutive adaptation by cognitive leaps.

*Informational archetypal communication*—A phenomenon characteristic of an interface which ensures and maintains communication between two or more coexisting systems which is due to the *similar archetypal shapes present in them* (Guja and Iliescu 2001; Guja 2008a 450; 2011, 407-426). Inter-systemic communication by interface is made by means of archetypal shapes (codes). It is possible special cycles imposed by the dynamics of fundamental contexts lie at the basis of archetypal codes, for example: the Periodical System of Elements, DNA spiral, etc..

*Integration*—The process resulting from coexistence of certain systems that are due to interface interaction. The duration in time of the mutual interactions of the complex process of multiple coexistence confirms the existence, persistence, and evolution of the process (Guja 1985, 187-199; 1993, 190; 2012b, 19).

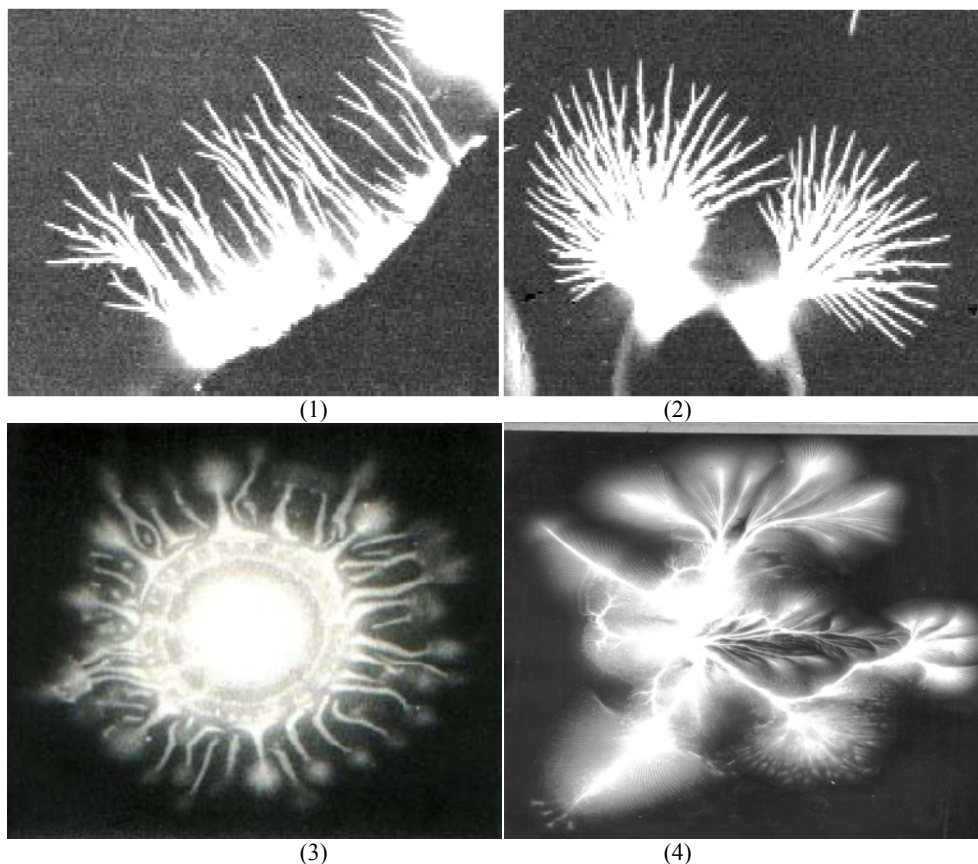
*Cosmic cyclic eco-bio-socio-cultural interface*—The sum total of processes and events taking place during an astronomic year (in space and time) in the whole human society on the Earth which are resumed and evolutively taken over the next year and depend on the cyclic variation of the contexts Earth-Cosmos (diurnal, monthly, seasonal) (The Encyclopedia of Earth <<http://www.eoearth.org/>>).

*Integronics*—It is a generic name proposed for the study field of *the phenomena of coexistence and no*

*coexistence of systems by means of interfaces*. The theory of integronics mainly deals with revealing the laws governing the coexistence phenomena of the systems via communication *at interface level*. The phenomenon of *integration by interface* is complementary and contradictory to that of homeostasis (Guja 1980, 205-220; 1985, 187-199; 1993, 190).

### 3. Results and Discussions

We have used these concepts to describe in detail the concept of *environment* with the help of the four subdivisions of the cosmic global context (see Figs. 3, 4 and 5), and a possible cosmic model of this was suggested (see Figs. 6 and 7). We also put in a table possible correlation of the characteristics of these contexts, selective adaptation to them and Aristotle's causalities—Tables 1 and 2. In this structure, we could perceive the presence of a more substantial *cosmic organization* of our terrestrial environment, which, *like the internal medium of the living organism, is an integrated part of the whole cosmic organism*.

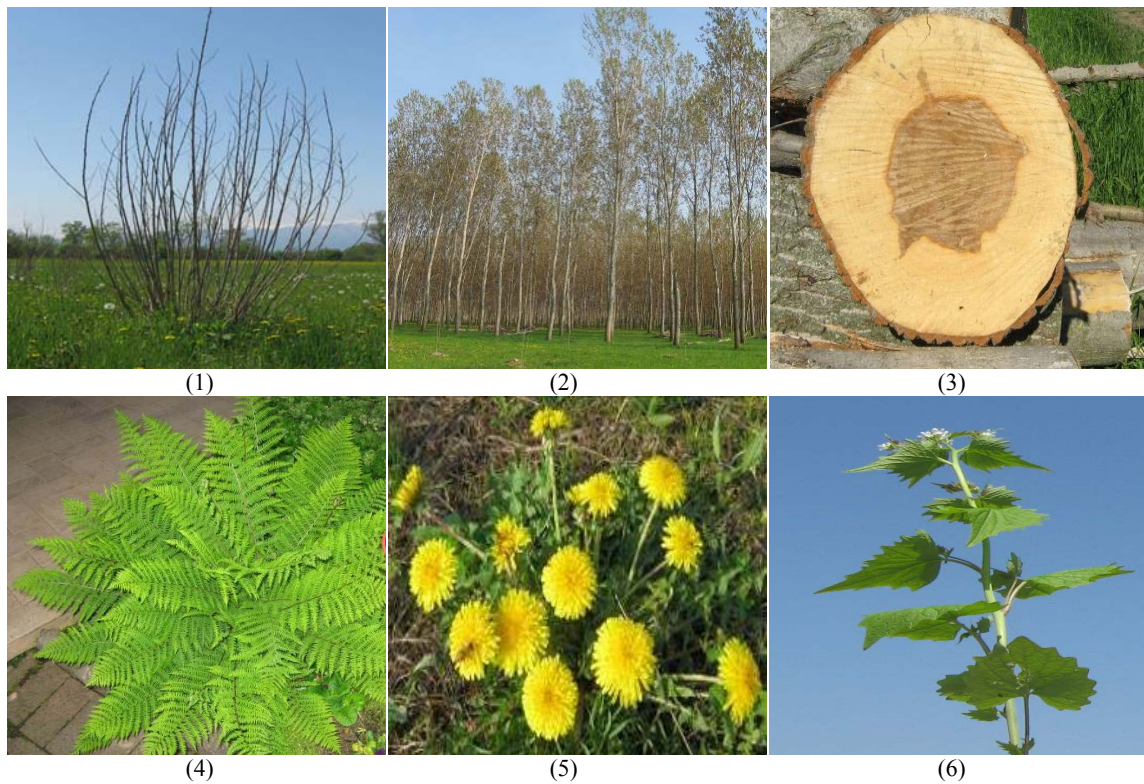


**Fig. 3. Types of Electric Discharges Recorded on Photosensitive Film (Guja 1993).**

Fig. 3 shows *types of electric discharges recorded on photosensitive film* (Guja and Iliescu 2001), *dominant, generic, and representative*, selected from our researches, which are correlated with the applied experimental electrical voltage steps: (1) *Linear shapes* for reduced voltages; (2) *Ramified (branched)* for a higher level; (3) *Circular-radial* corresponding to a superior level; and (4) *Complex, radial-helical* for maximum voltages over which electrical perforations occur (Guja and Iliescu 2001; Mandelbrot 1983).

The motivation for the selection of these signal types originates in the results of a long time personal research using an original method (Guja 1980; 1985; 1993; 2000; 2008a; 2008b; Guja et al. 1994, 67-74; 1997b;

1998; 2002, 39; 2004, 95-109; 2008b; Guja and colab 1997a; Guja and Iliescu 2001; Guja and Baciu 2008a, 164) regarding the interaction of the living systems with the environment via the natural electromagnetic field existing around us. They highlighted the presence of the same signal shapes (electrical discharges) with all the living and non-living bodies. These shapes are well known, very familiar to us as they are “materialized” in the shapes of the objects existing in the environment. The shapes are: linear, ramified, floral, and helical practically having an infinite number of manifestation modalities (fractal phenomena). The presence of these dynamic types of shapes may be determined by the specific action of the four interdependent fundamental contexts, i.e.: (1) Terrestrial gravitational context, (2) Terrestrial-moon gravitational context; (3) Solar-terrestrial-moon electromagnetic gravitational context; and (4) Electromagnetic gravitational global context: specifically cosmic radiative background.



**Fig. 4. Vegetal Shapes Characteristic of Various Development Stages.**

Fig. 4 shows vegetal shapes characteristic of various development stages: (1) Vertical *linear sprouts*; (2) Ubiquitous *arborescent ramifications* for the “vegetal skeleton” (the tree of life); (3) Annual growing circles as a consequence of a complex adaptation (dominantly gravitational?); (4) Radial foliation orientation on the stalk; (5) Flowers in concentric-radiative orientation, also ubiquitous shapes in vegetal development; and (6) *Radial-helical orientation* on the vegetal growing axis (Bejan 2000; Mandelbrot 1983).

Could these shapes be the consequence of the *coexistence of the millenary dynamics of the four contexts* which structured themselves as information in the genetic code and in the genome, which took, in its turn, a linear, concentric-radial, spiral-helical shape and is stored in the living cell nucleus—the DNA molecule?

In Fig. 5, Archetypal, primary, generic shapes present all over the living world, which may be associated with the electric discharge shapes we identified to play the part of a *code of signal shapes* for the interface

between the living systems and the electromagnetic field in the environment: (1) Simple linear shape (the place vertical—the direction of the gravitational force); (2) Arboresecent shape, facilitated by the presence of the moon gravitational force? (3) Circular-radiative shape (floral) facilitated by the specific radial-radiation propagation of the solar electromagnetic waves?; and (4) Spiral-helical shape facilitated by the dynamics specific of the Cosmos? (Jung 1969; Guja 2008b).

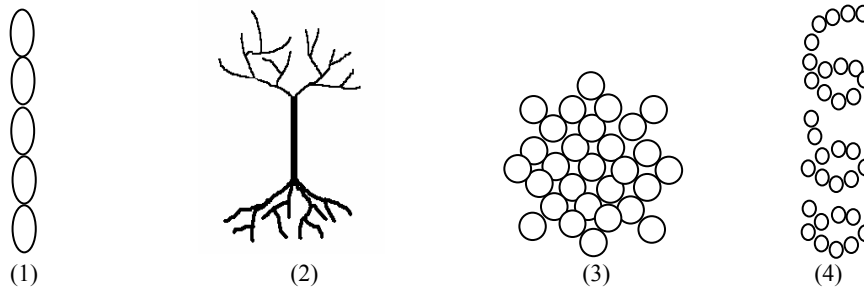


Fig. 5. Archetypal, Primary, Generic Shapes Present all over the Living World.

These ubiquitous shapes in the living and nonliving world are to be found as symbolic shapes in human culture. They are disclosed to the mind and used as archetypal signs of communication common to the human species as well as to the entire living and nonliving world. This fact may entitle us to assign them the part of informational communication codes (Guja 2008b) for the fundamental contexts which imposed them.

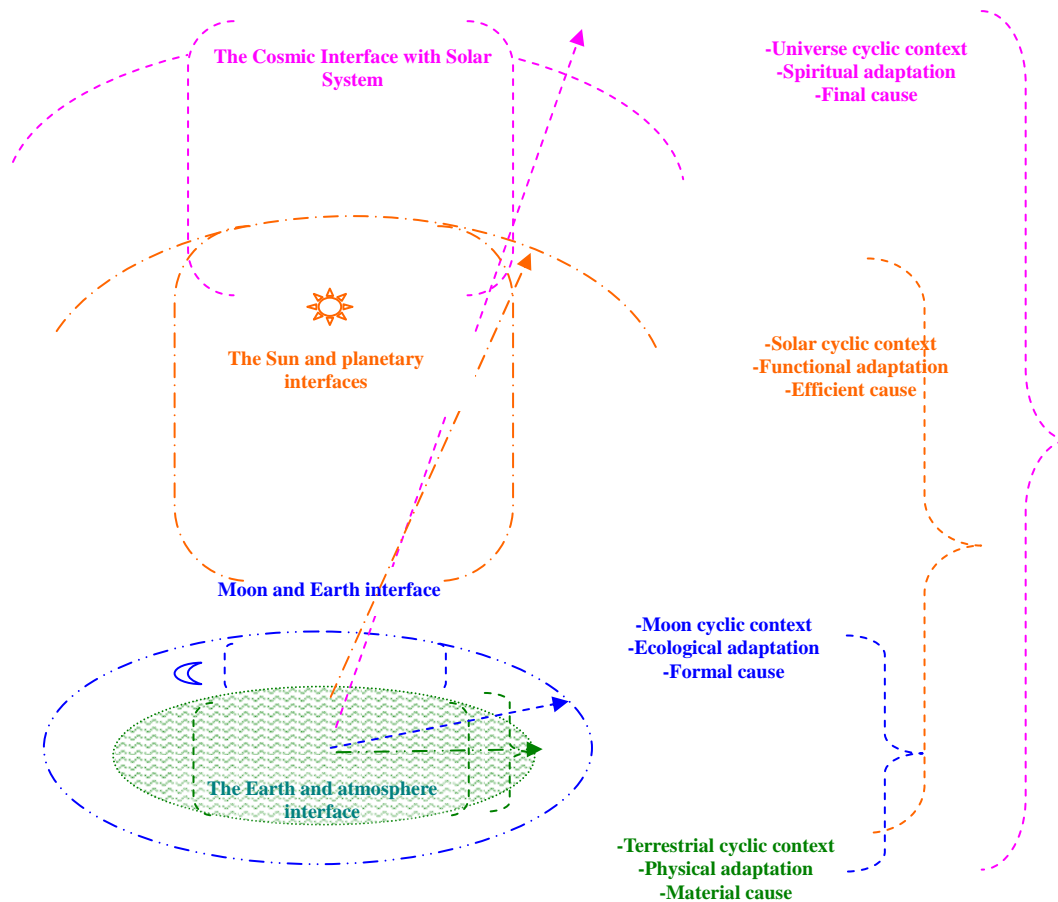


Fig. 6. Schematic Representation of Our *Eco-bio-psycho-socio-cultural* Life “Environment” With the Four Divisions.



In Fig. 6, Schematic representation of our *eco-bio-psycho-socio-cultural* life “environment” with the four divisions—contexts making up the Cosmic Context. We mentioned possible correlations among these *fundamental contexts* and the *differentiated adaptation* of living systems to them as well as *Aristotle’s four causalities*. The premise for a cosmic archetypal model of man similar to that of the model of the atom. (Guja 1997a; Guja et al. 1997b).

We can notice that the structuring of the four contexts reminds of the theoretical model of the atom in which the part of the atom is played by the Earth (see Figs. 6, 7).

We, people, living components with conscience, “statistically and probabilistically” populating the Earth tend to assault the superior contexts (energetic and informational levels) in order to communicate and contact other “cosmic entities” to survive in the apparently unlimited future (Hawking 2001, 224; Smolin 2000). All the assertions are, undoubtedly, only hypotheses at the moment! (Do not kill the writer!)

Communication phenomena

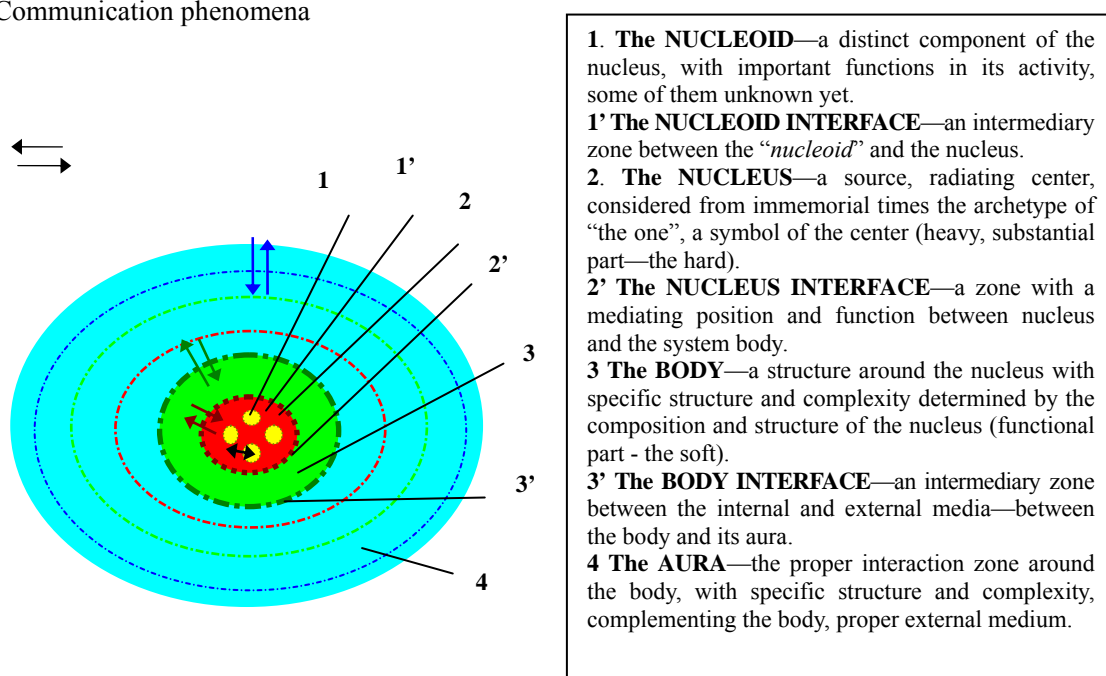


Fig. 7. Integrom (Guja and colab, 1997a; Guja et al. 1997b). Fundamental Structural Archetype (Guja 1997).

Starting from the organization similarity of the Universe entities, we have built a fundamental structural archetype, called INTEGROM, following two phenomenological principles:

- (1) *The communication between the integrom components is made at the level of their interfaces;*
- (2) *The communication at the level of interfaces is made through archetypal codes, specific to each structure level.*

It is worth reminding here that we started from the idea that all the objects and phenomena on the Earth are, at the same time, under the influence of the gravitational force, of the systems in its natural environment, the gravitational force of the Moon, the gravitational force and electronic field emitted by the Sun as well as in the radiating and corpuscular fields coming from the Cosmos (see Fig. 3). They all vary periodically, cyclically according to laws specific of each system/interface which is fundamental for our existence. They are *distinct, permanent and simultaneous causes* that led to the birth and evolution of “Our Home—The Earth.” All the phenomena in Nature, the living and nonliving bodies and the people coexist in these environmental conditions, which mean that we are compatible with them, we have developed together and, in time, adapted to them. The

ones that could not coexist, which proved incompatible with these complex conditions failed to adapt and disappeared. We should also keep in mind that our whole bio-psycho-socio-cultural life bears the print and functions within a calendaristic framework determined by coordinates of the context of our planet within the context of the Universe (The Encyclopedia of Earth <<http://www.eoearth.org/>>).

We have organized our life and adapted biologically and socio-culturally to the multiple, complex influence of cosmic structures, which, after knowledge accumulation, have become more and more familiar from the scientific and psycho-spiritual point of view. The complexity of all these influences, which are *permanently cyclic* and on the move in space and time, is expected to be found in the great variability of human individualities and uniqueness in each of us, in our own genetic formula. Being part of our everyday life, the Earth, the Moon, the Sun, and the “canopy of heaven” are part of our biopsychosociocultural life. We have rhythms and biorhythms inscribed in the species genome: *carbon cycle during photosynthesis, cell cycle occurring in a reproducing cell population*, etc.. and the organism systems have functions depending on the periods: day/night (fundamental metabolic cycles), monthly (endocrine cycles), seasonal (reproductive cycles), and annual (stages of ontogenesis).

From the Earth, we took over the *materials* which make us up and the atmospheric and lunar environment shaped us into a great variety range. From the Sun, we got the *energy required for efficient survival* and from the Cosmos we have *the faith and hope* that it is there where the mysteries of our *spiritual* life hide. We have never stopped believing and attempting to get to it, more and more conscious of its existence.

It is very difficult to identify and explain these characteristics of the integrating phenomenon by coexistence in its complexity, as a whole. It is also difficult to “bring” it into the laboratory to be tested. It is difficult to correctly reveal the mutually coexisting couples as, in real cases, they look *like a resultant, a unique coexistence phenomenon*. It is important to point out the fact that with the complexification of the process of matter evolution, *the range of couples has considerably diversified and differentiated*. Therefore only their resultants and effects are accessible to reality. They *objectivize* and *validate* the coexistence of real system variants which interact, *demonstrating non-coexistence* or perhaps the impossibility to coexist of other variants *experimented in time and eliminated*.

#### 4. Preliminary Conclusions

The paper was meant to highlight the correlation of certain distinct shapes and directions of adaptation of the living determined by the four fundamental (sub)contexts in which life on Earth evolved. In the same way, in the paper we suggest correlations with Aristotle's method of thinking, which refers to four fundamental causes that determine the change and evolution of things and phenomena on our Earth. Taking into account the originality of our point of view and the novelty of the field of study, we consider that a problem is better solved when the working hypotheses are clearly expressed. That is why *the objective of our paper is to make up four hypotheses which we place at the basis of Biocosmological Anthropology* (Guja 2008b; Khroutski 2011, 144-146), which is, in our opinion, the field of the present paper (Guja 2008b). We appealed to interdisciplinary knowledge in biology, ecology, anthropology, philosophy, astronomy etc..

(1) Our life environment mainly belongs to the context Earth-atmosphere whence the materials building us are taken, context-interface in which we were born, in which we developed and evolved in a specific way (like energetic level 1 and interface 0) (see Table 1). On other planets the specific parameters are different. In order to discern the fundamental effect of the Earth upon the living terrestrial matter, we have formulated the

following hypothesis:

Hypothesis 1: *Is the Earth the specific material source that supplied the substances characteristic of all the bodies, systems and processes in our Nature?* At the same time we wondered if the source of the intuition of Aristotle’s thinking method on the “*material cause*” was this very aspect put forth above.

Phylogenetically the living matter has acquired a steady and balanced structure and has evolved by adapting to the gravitational force specific of the surface of the Earth. This was possible by a *verticalization process of the living structures (plant stalks, animals’ specialized organs for equilibrium and finally homo sapiens sapiens species verticality meant to cast an admiring and inquisitive look upon the mysteries of the remote terrestrial contexts, etc.)*. “Vertical” and “horizontal” positions may have much more profound phylo and ontogenetic implications than the ones considered so far—such as the horizontal position meant to recover one’s forces by resting and sleeping. We also underline the position of maximum stability to which water flow in the natural circuits tends. We could call this type of adaptation *terrestrial-gravitational adaptation*—adapted to the immediately surrounding nature, mainly to the lithospheric and hydrospheric factors.

(2) The existence of the lunar satellite (only one, not several) forms the *terrestrial—atmospheric—lunar context* (as energetic level 2 and interface 1, see Table 1) which determines *the periodical, cyclic, permanent variation of the resulting gravitational force*. In this way life developed, evolved, *was shaped and adapted as such* in a variable force field. One may say that the verticality of the living is preserved up to a certain height characteristic of each vegetable species. A certain “*relaxation*” may occur, *generating ramifications all around the vertical axis*. In connection with this aspect we elaborated the following hypothesis:

Hypothesis 2: *Is the cause of the deviation from the vertical axis of the stalks while growing by developing ramifications originated in the cyclic and oscillating variation of the gravitational force resulting from adding the terrestrial with the lunar force of opposite sense?*

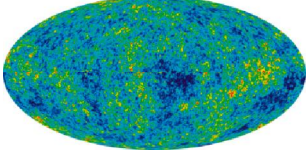

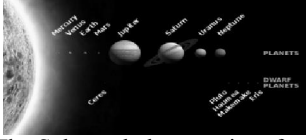



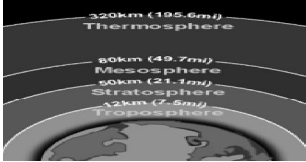

We feel directly the tide as an effect of the Moon and we accept it as commonplace, but its determining factor has permanently and systematically acted upon the evolution of the living. I wonder if it has printed its effect on the genetic support of each species in time. Could the *ramified shape* in the symbol of the “tree of life” be the effect of cyclic swinging determined by our satellite? We further wonder if “*the formal cause*” of Aristotle’s principles may have its origin in the action Earth-Moon context. We could call this type of adaptation *ecological adaptation* (Geophysical), adaptation to the conditions created by the complex interaction Earth-Moon.

**Table 1**

**Characteristics of the Fundamental Interfaces of the Earth Structured in the Cosmic Context (Guja 1993, 190; 2000, 256)**

Fundamental interfaces Characteristics	INTERFACE 0 (Interface of the System Earth) Atmosphere	INTERFACE I (Earth-Moon) Lunar	INTERFACE II (Earth-Moon-Sun) Planetary	INTERFACE III (Earth-Solar System-Universe) Universal
CONTEXT TYPE	Earth	Moon	Sun	Universe
TYPE OF LAW Specific	Physics-chemical	Physical-Relativist	Quantum-relativist	Chaotic determinist
TYPE OF COMMUNICATION	Substantial-energetic-informational-quantum	Energetically-informational	Info-energetic	Symbolical-conscious-mental
TYPE OF ADAPTATION	Integrally “natural”	Ecological-Darwinian	Physiological seasonal	Evolutionary-cosmic
TYPE OF CAUSALITY	MATERIAL	FORMAL	EFFICIENT	FINAL

**Table 2**  
**The Synthesis of the Correlations Between the Adaptation Processes, Fundamental Contexts and Aristotle’s Causalities Suggested in the Hypotheses of the Paper**

DISTINCT COSMIC ENTITIES	CONTEXT KIND	KIND OF CAUSALITY (Aristotelian)
 The Universe-Cosmos (< <a href="http://en.wikipedia.org/wiki/File:llc_9yr_moll4096.png">http://en.wikipedia.org/wiki/File:llc_9yr_moll4096.png</a> >)	COSMIC CONTEXT - <i>Total adaptation</i> : universal - <i>Specific archetypal code</i> : elementary particles  Complex electrographic image (EG)— <i>spiral-helical</i>	FINAL CAUSES ACTION
 The Solar and planetary interface (< <a href="http://en.wikipedia.org/wiki/File:Solar_System_size_to_scale.svg">http://en.wikipedia.org/wiki/File:Solar_System_size_to_scale.svg</a> >)	SOLAR CONTEXT - <i>Specific adaptation</i> : seasonal - <i>Specific archetypal code</i> : electromagnetic spectrum  - Radial-radiative- <i>floral</i> electrographic image	EFFICIENT CAUSES ACTION
 The Moon interface (< <a href="http://www.epa.gov/eogapti1/course422/ap1.html">http://www.epa.gov/eogapti1/course422/ap1.html</a> >)	LUNAR CONTEXT - <i>Specific ecological adaptation(a.)</i> : gravitationally variable - <i>Specific archetypal code</i> : common ramification of living and nonliving shapes (fractal)  Electrographic image common to all discharges- <i>ramified</i>	FORMAL CAUSES ACTION
 The Earth (< <a href="http://www.omerique.net/polavide/5medio_uni7_tierra/central3.html">http://www.omerique.net/polavide/5medio_uni7_tierra/central3.html</a> >)	TERRESTRIAL CONTEXT— <i>Specific adaptation</i> : gravitational day/night adaptation - <i>Specific code</i> : vertical and horizontal (+)  Electrographic image (EG) of a <i>metallic sphere attracted by a magnet</i>	MATERIAL CAUSES ACTION

(3) The dominating action of the *solar context* upon the terrestrial existence is mediated (interfaced) by the energy of its electromagnetic field which it sends incessantly and we receive it variably, cyclicly, daily, and in seasons (the effect of the Sun upon the Earth being practically constant). As the source of life and the whole existence on the Earth *the solar context* has practically led the infinite diversity and variability oriented towards the efficiency of survival. For these conditions we elaborated the following hypothesis:

Hypothesis 3: *Do the efficient survival modalities of flourishing and seasonal reproduction and of adaptation by the great variability of multiplying processes bear the print of the radial radiative qualities of the way the electromagnetic field radiated by the solar context propagates?*

The efficient radial-radiative shape at the basis of the floral structure in the vegetal world appears like an

archetypal shape on the one hand, characteristic, on the other variable from one species to another. The “efficient cause” of Aristotle’s principles may have been intuited thousands of years ago. We could call this adaptation type: *informational electromagnetic adaptation* (solar) (Guja 2008b)—adaptation to the day/night and season variation of the electromagnetic radiation resulting from the double rotation of the earth around its axis and around the Sun. These adaptations are due to the interactions with the electromagnetic field of the Sun.

(4) The permanent and dominating presence of the *cosmic context*, unknown and intangible as a *luminous cyclic interface* by daylight and a dark interface at night (lacking luminous radiations) may have been the main source of the appearance and development of existential conscience, of the seeking of our enigmatic origin. It is a response to a permanent requirement, an adaptation to the most extended living context in which imagination could develop without limits at the same time with objective, scientific knowledge.

Hypothesis 4: Human conscience is an entity seeking meanings and knowledge. Is not it also an adaptation form of the living matter to the permanent requirements of whatever surrounds us and to the cosmic context in order to find out “*the final cause*” of our enigmatic existence?

*The belief and hope* in the *cosmic context* that should hide the mysteries of our spiritual life has never ceased and we continued to persevere, to believe and attempt to know them, in this way becoming more and more aware of the necessity of a beginning and intelligible end that may be known. Continuing our correlations of the influence of the fundamental contexts brought to discussion with Aristotle’s causalities, we consider that the final cause of things, at least at present, knowing and making aware of our cosmic existence intuited from the beginning (Penrose 1989; Marta 2013, 70-75). We could call this adaptation type: cosmic (universal) adaptation—the requirement of the universal cosmic field.

The final preliminary conclusion would be that, based on the contextual thinking principles outlined in our paper we could note specific sequential laws: *material, formal, efficient*, essential for everyday life as well as more general, *final* laws of the entire Universe known so far, which could not be noticed without an adequate partial analysis.

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