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ORIGINAL PAPER

Human Evolution Through *Informational Adaptations* to the Solar Context. Problems of Biocosmological Anthropology

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Abstract
This paper contains the following sections: **A) A** presentation of our ideas and models about evolution and informational adaptation, placing the human being within the cosmic context where it belongs, and with which it coexists; **B.** A synthesis of our results on the electrographic investigation of hands and soles which has helped us to establish bioelectrical typologies; **C.** A synthesis of our research on physiological intracranial calcification; **D.** Arguments in favour of the role of homeostasis (informational cybernetics process) in evolutionary adaptation to the bioelectrical (electromagnetic field) and geophysical (gravitation) cycles of the Earth in *our especial solar context and our dependence on the cosmic evolutionary context (cosmic radiation).*

Key words: *solar context, bioelectrical typology, pineal calcification, informational adaptation, Biocosmological anthropology*

Introduction

In the study of human evolution and adaptation, it is essential to emphasise the effects of the Earth's continuous cyclical movements in space, in the cosmic context, *upon our everyday existence*. The biological, psychological and socio-cultural temporal coordinates of human life are all dominated by a cyclical calendar structure (days, months, seasons and years) which is based on fundamental cosmic factors such as the daily rotation of the Earth, satellite rotation (the Moon and the geophysical context) and the annual rotation around the Sun (the solar context). This paper presents an argument for the importance of extending the concept of 'environment' in Anthropology, to encompass the following facets or subdivisions which have never ceased to impact upon human existence: the ***cosmic evolutionary context, the cyclical solar context, the cyclical geophysical context, and the bio-psycho-socio-cultural cyclical context.*** The motivation behind this study, therefore, when analyzing the course of human evolution, society and culture, is to include in the ***fundamental anthropological modelling factors,*** the ***variability of the cosmic factors:*** *i.e.,* our permanent

motion in space: in the Earth's ***gravitational and electromagnetic field,*** in the solar system, and in the cosmic context (Figure 1 and 2) [2, 4, 6, 28, 29, 43 and 45]. These aspects have been presented in more detail in the volumes 'Informational Anthropology', 'Anthropology of the Individual', and in the paper 'Elements of Biocosmological Anthropology' [18, 22, 24, 26 and 23].

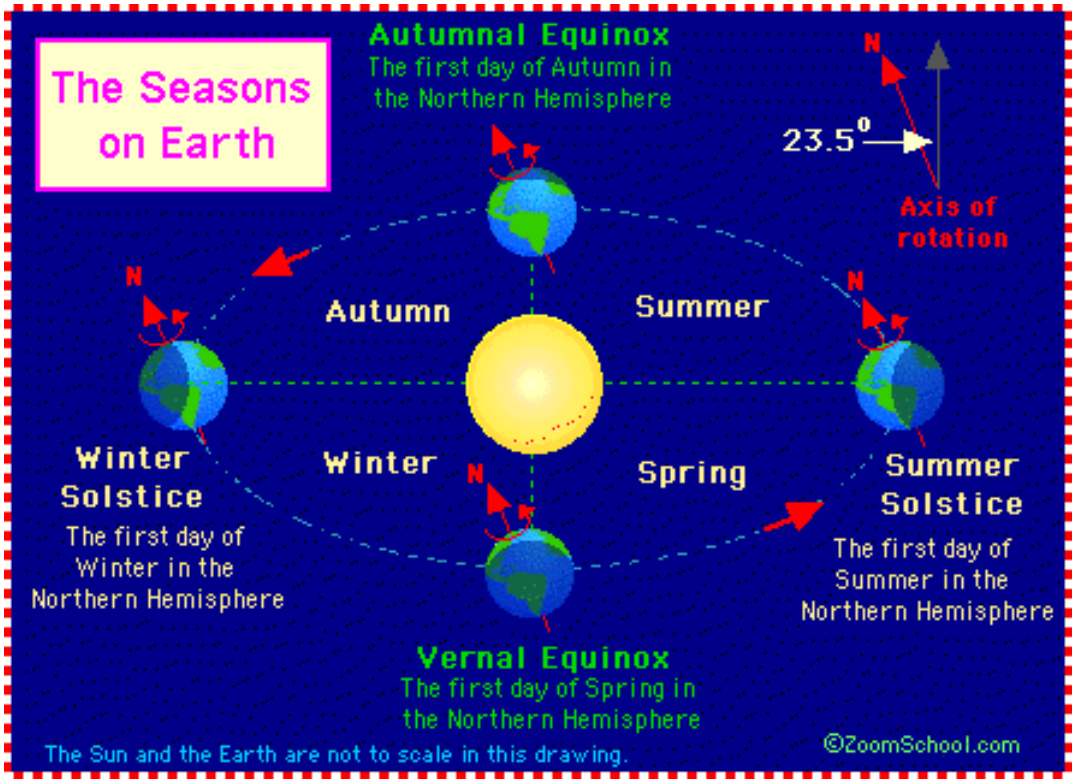


Figure 1- The Earth's seasons are the result of the tilt of the Earth's axis. The Earth's axis is tilted when measured from the perpendicular to the plane of the ecliptic by 23.45°. And it is this tilting which gives us the ***four seasons of the year - spring, summer, autumn (fall) and winter,*** *because* different parts of the globe are oriented towards the Sun at different times of the year. Summer is warmer than winter (in each hemisphere) because the Sun's rays hit the Earth at a more direct angle than in winter, which is also why the days are longer than the nights during the summer. During the winter, the Sun's rays hit the Earth at an extreme angle, and the days are very short. These effects are caused by the tilt of the Earth's axis.
[http://www.enchantedlearning.com/subjects/astronomy/planets/earth/Seasons.shtml The Seasons and Axis Tilt].

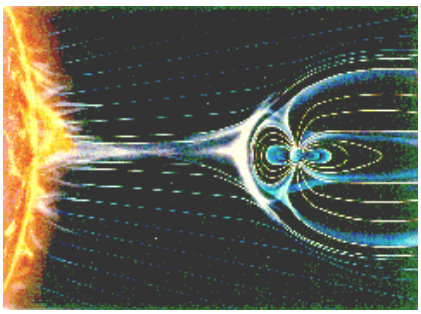


Figure 2 - The Sun actually has seasons, ***or cycles of activity and relative inactivity.*** Right now, scientists state that we are approaching the maximum activity phase of the current solar cycle. Daily, the Sun is exhibiting sunspots, flares and ***coronal mass ejection***s. The effects of an active Sun are felt here on Earth - radio communications, power distribution, orbiting spacecraft, and even the weather, are all affected. Solar activity affects the Earth's magnetic field, [http://science.nasa.gov/science-news/science-at-nasa/1999/ast22jul99_1/]

In this study we put forward the **hypothesis** that bioelectrical types of human beings [9, 10, 11and 14] and brain ***physiological*** calcification [25 and 31] (concepts which we have founded and studied for many years) are the consequences of specific informational adaptation processes to ***geophysics and solar cyclical events.*** **The aim of this paper** is to present and analyze the correlation between ***bioelectrical types*** and some types of ***physiological intracranial calcification*** of the pineal and choroid plexus, which we regard as having a major informational adaptive function in human evolution. This paper contains the following sections: **A.** presentation of our ideas and models about evolution and informational adaptation, placing the human being within the cosmic context where it belongs, and with which it coexists; **B.** A synthesis of our results on the electrographic investigation of hands and soles which has helped us to establish bioelectrical typologies; **C.** A synthesis of our research on physiological intracranial calcification; **D.** Arguments in favour of the role of homeostasis (informational cybernetics process) in evolutionary adaptation to the bioelectrical and geophysical cycles of the Earth in *our especial solar context and our dependence on the cosmic evolutionary context.*

Part A. Knowledge from modern science has allowed us to penetrate far into terrestrial realms (geophysical) and also into distant planetary (astronomical) and cosmic realms [5, 8, 47 and 48]. Today, we speak of a *space structure* that may be approached, studied and characterized in several different ways, such as:

1. **Cosmological,** which we shall refer to as the ***'cosmic evolutionary context'.***
2. **Astronomical,** which we shall refer to as the ***'solar cyclical context'.***
3. **Geophysical,** which we shall refer to as the ***'terrestrial cyclical context'.***
4. ***Life Environment*** (as used in **Anthropology)** for which we shall use the somewhat complex, generic and quite ambiguous term ***'Bio-psycho-socio-cultural context'***.

Each of these **four contexts** has diverse **influences** upon terrestrial life (Figure 3 and 4). And particular laws which determine specific causes and influences [45, 47 and 48].

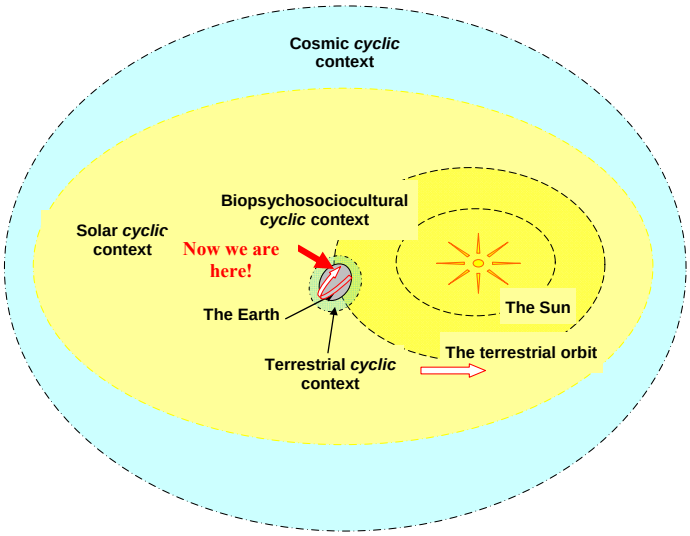


Figure 3 - Model for the Human cyclical cosmic context of the Earth [28 and 29].

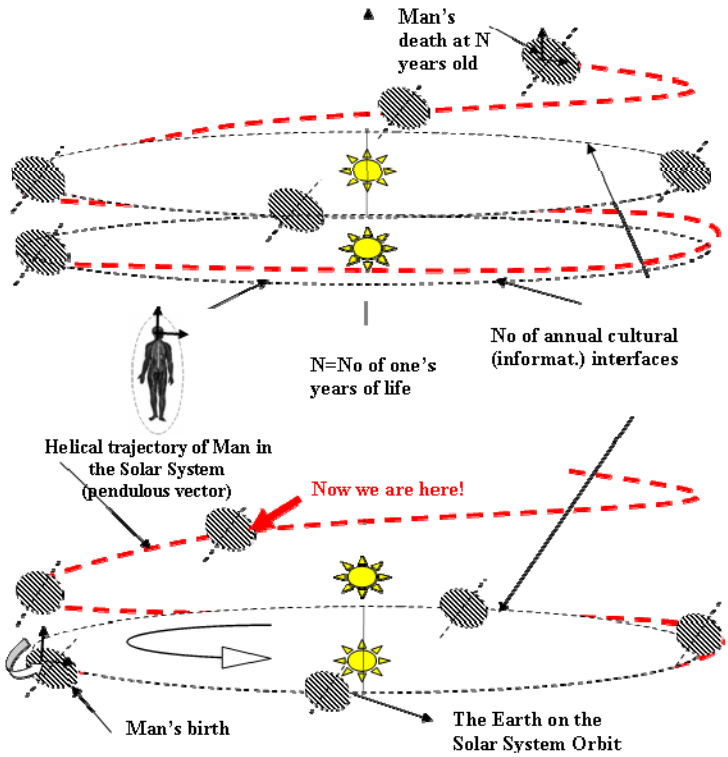


Figure 4 - Human orbital cosmic model emphasizing the fundamental cultural cyclical behaviour (terrestrial life environment complexity) [28 and 29].

Materials ans Methods

Part B. This study focuses on factors that influence the atmospheric environment (Figure 5), more particularly, on the influence of electromagnetic fields on the human organism, and the latter's adaptation to this electric environment in anthropogenesis. The possibility of objectifying the bio-electrical reactivity and studying its variability in various physiological and pathological states in the human organism, led us, during our research, to highlight, describe and identify electrographic bio-electrical types (Figure 6 and 7). The electrographic (EG) technique* employed is original (F. I. Dumitrescu, 1973, C. Guja, 1977), and permits the study of the electric fields of human bodies [7, 9, 10 and 35]. This enabled us to test the electromagnetic field of the human body which was submitted to a field ***generated by a unique, mono-polar: positive or negative,*** high-voltage impulse (4 – 35kV) and low intensity signal (50mA) (Kirlian method applied to high frequencies) [9 and 20]. The signal has a triangular shape, with a sudden ascending slope (15 - 30 microseconds) and a slow descending slope (100 - 500 microseconds). The analysed images were recorded on radiological film and placed on the glass screen of the electrograph, on which the subjects being studied also placed their palms and soles (Figure 6 and 7). Thus resembling an EEG, EKG and EMG investigation, and providing a way of ***correlating the shape of some of the organism's fractal structures (streamers) with their function.*** This is a new method of studying the states of the human organism in its continual adaptation to the living environment (Biocosmic context) [21, 28, 38 and 46].

* The EG image presents a snapshot of the informational dynamics of the halo, consisting in a variable EG imprint alongside the unique, genetically determined one: dermatoglyphy (palmary prints). The analysis of these signals on the human palms and soles, which reflect the shape of the electromagnetic field (em.) in the functional dynamics of the entire organism, may be correlated with the designed morphoanatomical structure and function, associated or correlated with the investigated interface (integument) [9, 12 and 31]. Figure 8 represents palm and sole electrographic images in a normal, every day state. We easily recognize the palms with discrete dermatoglyphic prints, together with a great diversity of streamers placed on the outline and on the surface. They are distributed with different densities, shapes, intensities, sizes and fractal structuring, on levels, at finger extremities. The complexity of streamer configurations reflect the electrophysiological dynamics of the human palmar tegument and the active part of the mediator and multiple psychoneuroendocrine interface of the skin organ. They describe the informational bioelectromagnetic interaction of the human organism with the environment [13, 15 and 16]. The streamer configurations suggest the ***characteristics of a mineralized substratum*** associated with the type ***of bioelectric mineral*** (Figure 9) characterized by the dominance of streamer mineral '3' (Figure 9) [17, 18 and 19].

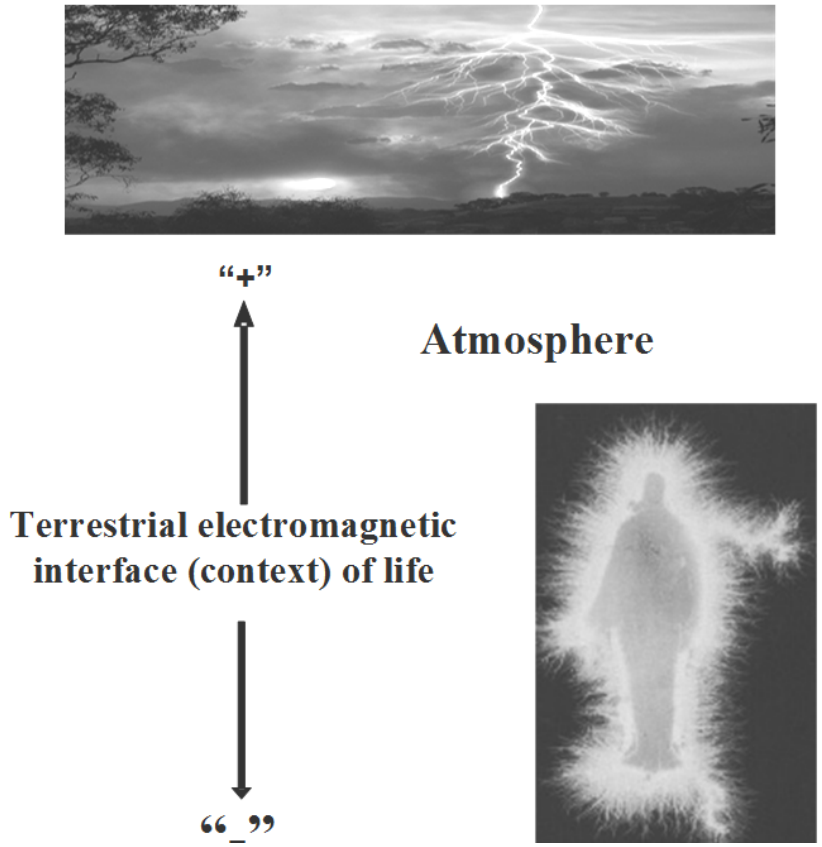
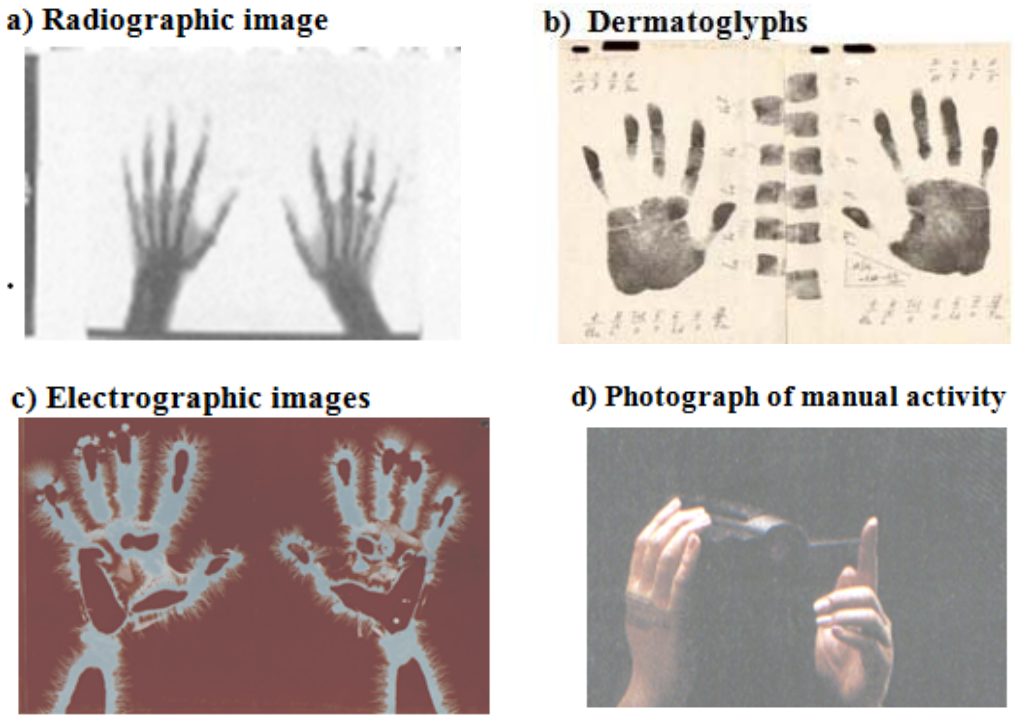


Figure 5 - Communication through naked integument ** and limb extremities by means of bioelectrical privileged discharge points [9, 10, 11 and 12]. Multiple dynamic equilibrium adjustment and regulation mechanisms make homeostasis possible and informational adaptation to the terrestrial electromagnetic environment (complex context of life) [19 and 20]. ** **The integument** is the largest organ of the human body. It can be divided into accessory structures (such as hair, nails, and glands) and **the cutaneous membrane (the skin).** Comparative anatomy suggests that the human integument evolved through a long series of transitional stages [17, 21].



Figures 6 a, b, c, d. –Four categories of investigation of the upper limb extremities***: a) radiographic image, b) dermatoglyphs (palmar prints), c) electrographic image (electrographic prints). d) photographic image [21].

*** It is well known that, **besides the brain, the hand** is the most important organ for maintaining life in the conditions specific to the human species. Next to the face, it has the greatest individual expressivity. It is a symbol of the individual's uniqueness, offering complete, valuable information regarding man as a species and as an individual. The hand is a hypercomplex interface between the organism and the specific living environment, between the biological and the social, between the present population and its past, between the normal and the pathological. Having all this in view, and especially the importance of palms in the evolution of man, attempts to study them, in the quest for knowledge, are not only natural but also extremely interesting and useful as well. The hands have been the object of study for many fields, mainly the behavioural sciences, medicine and anthropology (Hands Anthropology) [1, 3 and 30]. The hands define and express the human being by means of its communication and integration potentialities; it is a creative vehicle, complementary to the creative activity of the brain, an informational archetypal expression of the human being defined by polarity, complementarity and symmetry/asymmetry.

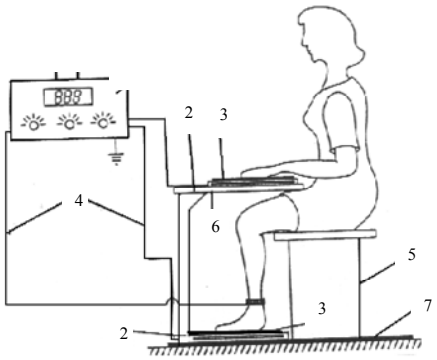


Figure 7 – Electrographic (EG) equipment *. 1. Impulse generator. 2. Screens for palms and soles. 3. Radiological films. 4. Electrical conductors. 5. Insulated chair. 6. Insulated table. 7. Insulated carpet [18].

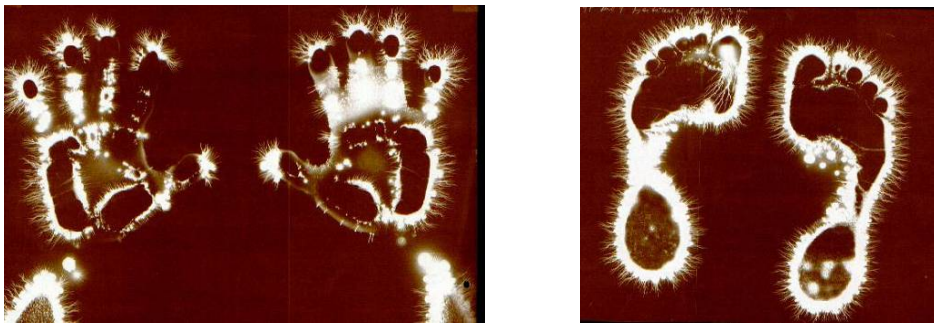
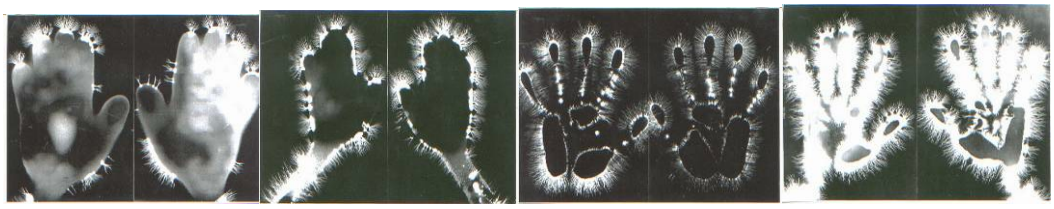


Figure 8 - Electrographic a) palms and b) soles images [14].

Results and Discutions

Five categories of EG palms images are illustrated in Figure 9. These categories are the results of analyses based on thousands of experimental cases, from which we were able to identify the existence of five human bioelectrical types***. These types have qualities and selective-adaptive potentialities which are different in the electromagnetic living environment***, analogous to the biochemical-adaptive functions proper to the ABO blood groups. Comparative observation of the EG bioelectric types highlights clear differences among the ***four pure patterns***: dielectric, hydro, mineral, semiconductor (which mark extreme states of the ontogenetic-fitness sense: ***juvenile<-->senescent);*** or of the pathogenic sense, reversible or irreversible tendencies (***hyper-reactive<-->hypo-reactive***). The statistical study of various samples of healthy and sick subjects reveals the existence, in most cases, ***of a mixed type***, placed in the central area of the matrix, characterized by the presence of all four patterns which define the pure EG types ***in different proportions*** [19 and 20]. So, each individual finds its place, ***at a***

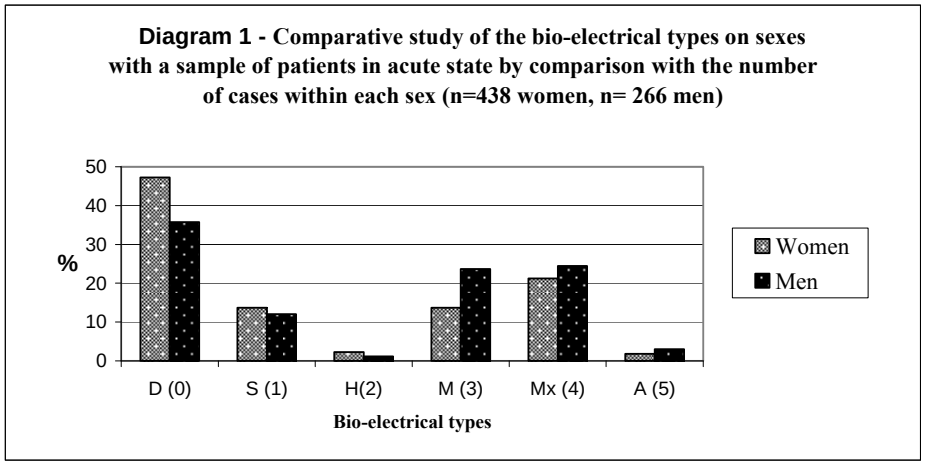
certain moment, within a square of ***the matrix,*** corresponding to the proportion of the four values in ***the patterns 0, 1, 2 and 3, which vary according to the normal and pathological status*** [for matrix: http://www.corneliaguja.home.ro , 19 and 29]



Dielectric '0' **Hydro '1'** **Semiconductor '2'** **Mineral '3'**

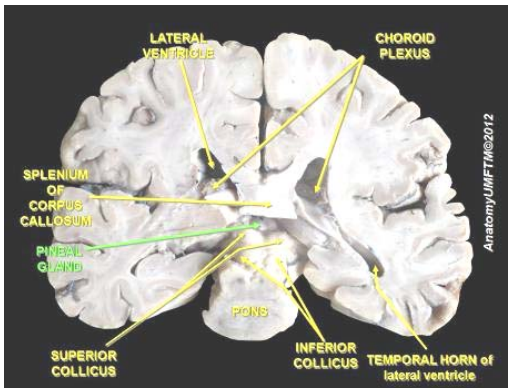
Mixed

Figure 9 - Types of electrographic images. From left to right: **dielectric, hydro, semiconductor, mineral, and mixed** [29 and19]**.**



The fractal method by *analysing the spectrum of fractal dimensions and the average fractal dimension* of these EG recordings offers a long expected opportunity, which is very useful for automatic processing [38, 41, 42, 44, 46 and 49].

Part C. From an anthropological perspective, the interest in ***choroid plexus*** (CP) is determined by ***the importance of their role and involvement in the anthropogenesis.*** We take into account the particularities of the evolution of the cerebral ventricular system which can be followed in the human embryogenesis - morpho-functional evolution of the human brain. During these changes, the cavities of the vesicles in the neural tubes become the encephalic ventricular system, with ***cerebrospinal fluid*** (CSF) and CP as an exchange interface [21]. CP produces cerebrospinal fluid (CSF) which is inside the cerebral ventricles and in the subarachnoidian space around the spinal belt. In the activity of the complex forms of ***choroid plexus*** (CP) and the ***pineal gland*** (PG), we can observe ***the presence of a physiological anthropological typology*** (biophysical-chemical, neuro-endocrine) (Figure 10 a, b and 11) [19 and 21].***Our second hypothesis*** refers to the existence of a ***complex interdependence of 'interface' type*** (informational) between the intracranial physiological calcification (IPC) and the metabolic phenomena involved in the hydro mineral and bio-electromagnetic homeostasis of the entire human body. ***The motivation*** of our interdisciplinary, anthropo-medical approach is to understand the causes and consequences, as well as the common plan that forms the basis of these phenomena of ***physiological calcification.*** This especially relates to the type of structures belonging to the different systems: CP – a basic component of ***the blood-brain barrier*** (BBB), the main access of hydrophilic substances from the blood to the brain and PG - a neuroendocrine gland with the role of photo-transduction mediator and ***involved in the fundamental biorhythm light / darkness*** [50 and 51]**.** We also aim to answer questions such as: what are the means of communication through which these structures are coordinated? Why, when and what determines the calcification at the BBB level? The general process of calcification of the human body is extensively studied nowadays. Calcium**** is the most abundant mineral in the human body and it circulates in the blood, ensuring the regulation of important activities. Calcification can be physiological or pathological. The only formations in the body which normally experience calcification phenomena are the bones and the teeth. Their hardness is the result of *the deposits of calcium salts* inside them. ***Calcification is considered to be a physiological process which intensifies during ontogenesis, up to a certain stage in life*** [34 and 36]**.**



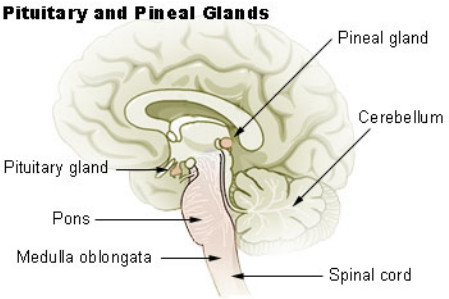


Figure 10 a, b - Dissection showing the ventricles of the brain and a diagram of pineal glands in the human brain
[http://upload.wikimedia.org/wikipedia/commons/1/1c/Slide2ff.JPG; http://upload.wikimedia.org/wikipedia/commons/6/6b/Illu_pituitary_pineal_glands.jpg]

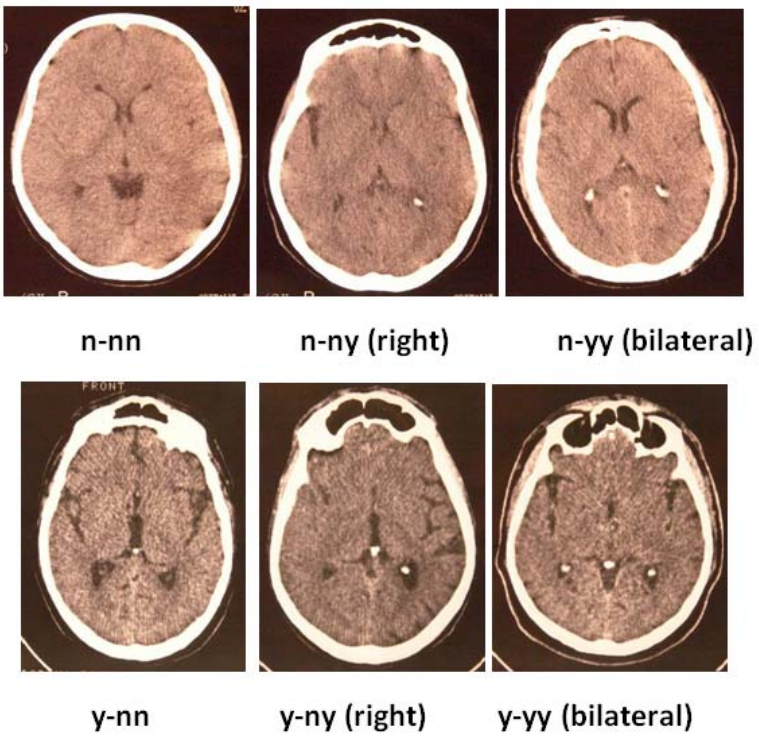


Figure 11 - Computed tomography images illustrate the calcification types in the choroid plexus, correlated with pineal gland ***calcification (y) and non-calcification (n): 1 (n-nn)*** … and **6 (y-yy).** In order to follow the analysis more easily, we specify the following aspects: out of the 6 types 1- 6 to refer to ***extreme variants:*** totally non-calcified, type 1, and totally calcified, type 6; two others refer to symmetrical (bilateral); and another two comprise asymmetrical calcification variants [21].

Kind of structure: Non-calcified (nn) / Calcified (yy)	**Pineal gland**							
	Non-calcified (n _)				**Calcified (y_)**			
Choroid Plexus Left Right	**n_nn 1**	**n_yn[1)] 2**	**n_ny 3**	**n_yy 4**	**y_nn 5**	**y_yn 6**	**y_ny 7**	**y_yy 8**

Table 1 - Types of calcification of the choroid plexus correlated with the calcification of the pineal gland: [1)] n_yn (type 2 means non-calcified pineal gland, left choroid plexus calcified, right choroid plexus non-calcified.

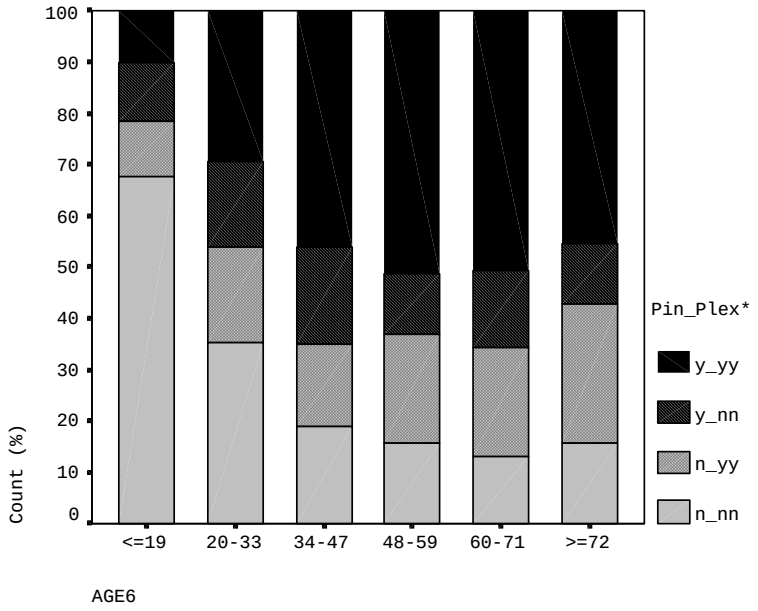


Diagram 2 ***Distribution of the types of calcification of the choroid plexus and pineal gland on age groups (100% = l total number of patients in the respective age category!)***

****Calcium is essential for the living organism, particularly in cell physiology, where the movement of the calcium ion Ca^{2+} in and out of the cytoplasm functions as a signal for many cellular processes. An important material used in the mineralization of bone, teeth, shells and cells and is the most abundant ***metal*** in many animals.

Later on, an inverse process takes place – ***osteoporosis*** - sometimes accompanied by other pathological phenomena. The calcification of other organs results from the involvement of calcium in different functions. The phenomenon of calcification in glands and organs is associated, in most studies, with dysfunctions [50].

Our objective was to prove the existence of new variants of ***intracranial physiological calcification*** (ICP): of the ***glomus of the*** choroid plexus (CP) at the level of the temporal or occipital horns of the lateral ventricles, correlated with the pineal gland (PG). These calcifications, ***not diagnosed as pathological,*** can be seen on computed tomography images (CTI) and frequently appear in the same cranial axial section, even though PG and CP have no known direct topographical or anatomic-functional connections, and ***their morphology does not justify the situation of the calcifications in the same plane.*** This study was carried out on 1290 patients, whose choroid plexus and pineal gland were examined on computed tomography. The study group consisted of patients of both sexes, within six age groups (Diagram 2 and Table 2) [21 and 25]. Our aim was to check the correspondence between the choroid plexus and the pineal gland calcifications by age groups and sex and the connections between these calcifications and associated pathology. The calcification phenomenon in the human ontogeny leads to ***physiological differentiations.*** Interdisciplinary systematic research can lead to *some criteria, principles or even general laws of manifestation* of the leap phenomena. Crossing *the physiological barrier can be regarded as a natural, real* ***interface,*** with similar characteristics as computer technology (receiving, codifying and memorizing, processing, retransmitting specific information. ***The calcification we signalled appears to be a marker for homeostasis*** (informational cybernetics and integronics process)**.** Taking into consideration the above-mentioned facts, we aimed to identify the factors that determine the CP physiological calcification and its role in a specialized structure of interface type, in the human brain, which mediates and controls the *"third circulation"* of the body - the CSF [31]. As a result, we considered the complex form of ***choroid plexus*** (CP) and ***pineal gland*** (PG), ***a complex interface which "processes" information that assures the coexistence and the dependence among all phenomena of physiological calcification in the body, including the intracranial ones and electrical phenomena of the our integumentary system.***

In order to classify the calcification variants, eight types of combinations were arranged and can be seen in CT: ***two refer to extreme variants: totally uncalcified (type 1) and totally calcified (type 8);*** bilateral, symmetrical variants (types 4 and 5); the other four types include the asymmetrical calcifications (2, 3, 6 and 7). After this anthropological study, results demonstrate that there are significant differences between calcification of the choroid plexus and those of the pineal gland in the two sexes, age groups and on pathological grounds. In conclusion: age is not the main cause of the calcification types (Diagram 2). We think that is a process of adaptive-reactive variability at cosmic cyclic context, playing an integrating mediating role by informational interface. The presence of these calcifications is physiological, and has an active adaptive metabolic part depending on many factors, among which the individual's constitutional basis is

also present. Even if the calcification process is physiological and increases with age, age is not the main cause of the calcification types, but ***a process of reactive-adaptive variability,*** caused by the complexity of variables: ***cosmic context,*** sex, age, constitutional basis, neuro-endocrine context etc.

Part D. We aimed to discuss the homeostatic roles of these five bioelectrical types (four pure and the fifth mixed – figure 9) in evolutionary adaptation to bioelectrical and geophysical four season cycles of the Earth in ***our especial solar context and dependence by dynamic cosmic context*** (Figure 1, 2, 3, 4, 5 and Table 2). The air we breathe is in an electric state. The positive and negative ions in various proportions depend on: temperature, pressure, humidity, ionization and polluting impurities present in the respective air masses. The breathed in ionized air induces ***bio-ionization of the internal environment,*** transforming it and maintaining it through a ***cyclical bioelectrical process.*** This state depends on the hydro-mineral balance of the organism. The degree of ionization and polarization in the internal environment (the acid-base substratum) lies at the basis of the neuro-endocrine activity, of the ratio and equilibrium between the excitation and inhibition processes. ***The tegument reactivity tested electrographically by us is a projection of bio-endogenous electrodynamics at the interface of the organism with the external environment*** [39, 52]**.**

BALANCING CONSTANT K / IONIC VALUES	DIAGNOSIS CRITERIA OF A IONIC COEXISTENCE (+ / -)				
	INTENSITY	**STATE OF ECQUILIBRIUM**	**STATE OF ELECTRIZATION**	**MOBILITY**	**STATE OF COEXISTENCE**
MAX. “+” ⇄ “–“ **(equal)**	**$K_+ / K_- = 1$ (maxim)**	**Meta-steady**	**Electrical polarization (dipolar)**	**High - two directions**	**Highly strained balanced**
min.	**$k_+ / k_- = 1$ (minim)**	**Steady**	**Neutral**	**Reduced**	**Slightly strained balanced**
“+” > “–“	**$K_+ / k_- > 1$ (positive)**	**Unsteady Irreversible**	**Electric charging “+”**	**One direction “+”**	**Highly unbalanced**
“+” ≠ “–“ (unequal) **“+” < “–“**	**$k_+ / K_- < 1$ (negative)**	**Unsteady Reversible**	**Electric charging “-”**	**One direction “-“**	**Slightly unbalanced**

Table 2 – Balancing diagnosis for processes of ionic coexistence (+ / -) between the living organism and the environment (Figure 9) [24].

The absolute concentration of the positive ions K_+ ions/cm^3 coupled with the concentration of the negative ions K_-ions/cm^3: K_+/K_-, also called unipolarity index, ***is different according to latitude, altitude and seasons and may vary from one day to another, from morning until night, from one room to another.*** We are presently witnessing spectacular modification, mutation in the state of aero-ionization of the air due to the intervention of *Homo sapiens recens technologicus*

[1, 3 and 30]. These are "felt" in various somatic, psychic and often psychosomatic manifestations: pain in the articulations, myalgia, psychic indisposition, spontaneous headaches, etc. The change of the polarity index from a balanced ratio (quasiunitary) to over- to sub-unitary (unbalanced), owing to pollution processes, made the "state of aero-ionization" change from a natural, vital, health factor, into a risk factor (pathogenic) [20]. Overstress due to aero-ionic (aero-electric) disequilibrium (unbalance) as a risk factor, ***determines chain reactions among levels interdependent from an electrodynamics point of view,*** intuited by traditional Oriental medicine as energetic circuits and short-circuits. As a risk factor, acting mainly at a respiratory level, ***the aero-ionic disequilibrium*** becomes an "aggressor ", specific and non-specific at the same time, which accounts for the very large range of respiratory pathologies.

Our EG experimental result for future reflection – Figure 12:

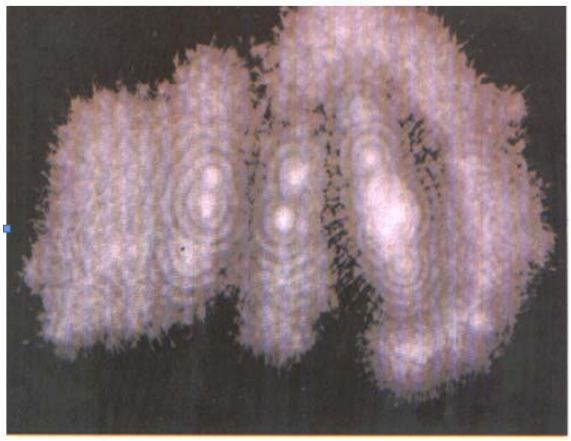


Figure 12 - EG Image obtained by exploring the ***forehead zone*** (C.Guja, 1986) where the existence of forehead chakras is presumed (named Ajna, after Leadbeter). Leadbeater associated the Anja chakra with the pineal gland.[21] which is a part of the endocrine system. Edgar Cayce said that the seven churches of the Book of Revelation are endocrine glands.[22] ***These associations have never been scientifically verified.*** Ajna is known as the third eye chakra and is linked to the pineal gland. The pineal gland ***is a light sensitive gland that produces the hormone melatonin which regulates sleeping and waking up*** [13, 29 and 50].

Instead of conclusions

- In our studies we intended to identify the ***multidimensionality of the human being*** (physical, biological, psychological, socio-cultural) within the collectivity it belongs to and integrate it in a unitary conception: 'The Individual's Anthropology' and 'Informational Anthropology ' [13,15, 18,19 and 26].
- Consequently we ***extended*** the range of ***the general context*** in which we place the human being and the explored collectivity, also taking into account other determining factors for human variability: the factors we generically call 'cosmic' (from the Cosmos or the Universe). The Cosmos is the ***common denominator impossible to eliminate from any terrestrial phenomenon*** (figures 1, 2, 3 and 4 and 5**).** At a superficial analysis its influence may be denied. At a more thorough analysis we consider it determining for the whole evolution and adaptation of man and terrestrial 'Nature'.
- The objective of our research was highlighting the variability of inter and intra-individual human characteristics with interdisciplinary methods [9, 10, 11 12, 14 and 16]. At a theoretical level, we elaborated a methodology that should take into account the complexity of the environmental factors and which was structured in a conception and theory we called INTEGRONICS (Guja 1977) [13]. It is based on introducing and ***developing the concept of interface as an interacting zone of the systems*** (Guja 1993) [13 and 24]. This concept is useful for better understanding of the interdependence between the hyper complex systems in our surrounding 'world' (Nature and Cosmos). The study of the individual's variability and of the human individuality was materialized by experimental finding of certain typologies with methodological character which mark degrees of physical, biophysical, physiological reactivity (adaptive types), [11 and 13].
- The results of the study of inter and intra-individual longitudinal variability [16 and 17] consisted in ***acquiring of integrating thinking using the concept of interface alongside with that of system.*** Human variability is distributed not only according to energetic and substantial law system, but also according to certain informational (qualitative and also quantitative) laws. [24]. In any scale of variability there are minimum and maximum extreme values and in between there is an ***adaptive range.***
- The bioelectrical and calcification types discussed in the presented studies should be interpreted like this, as they are physical, biophysical, biochemical, physiological, ecological adaptations to the

gravitational, electromagnetic, radiating cosmic, cyclic conditions but permanently variable and in a continuous cosmic evolutive dynamics. Of these variations we can distinguish maximum, minimum and intermediate types which ensure survival in the whole range of variability (Figures 9 and 11), [21 and 25]. These problems we developed in last time in the frame of '***Biocosmological Anthropology'*** [27, 28, 29, 32 and 33].

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