

## THE DIVISION OF THE MENTAL FACULTIES IN UNCONSCIOUS, PRECONSCIOUS (SUBCONSCIOUS) AND CONSCIOUSNESS, AND THE NEUROLOGICAL BACKGROUND OF THIS SEPARATION

Leon DĂNĂILĂ<sup>1</sup>, Alexandra Georgiana VACARU<sup>2</sup>, Eftihța CRĂCIUN<sup>3</sup>, and Mihai Lucian PASCU<sup>4</sup>

<sup>1</sup> National Institute of Neurology and Neurovascular Diseases, Bucharest, Romania, Clinic of Neurosurgery

<sup>2</sup> Ministry of Foreign Affairs, Bucharest

<sup>3</sup> "Titu Maiorescu" University, Faculty of Psychology, Bucharest

<sup>4</sup> National Institute for Laser, Plasma and Radiation Physics, Laser Department, Bucharest

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The mental faculties can be divided in unconscious, preconscious and consciousness. In accordance with our scheme, we can observe that each subdivision is dependent on certain anatomic cerebral structures. Ontogenetically, the conscience evolves from the unconscious towards subconscious and consciousness, and with the advance of age, it goes backwards through a degradation process, from the superior towards the inferior, that is, from consciousness to subconscious and unconscious. This modular concept of the conscience, which is described in detail in the paper's text, allows us to perform measurements of it. The dreams, although they have their origin in the unconscious, add up and are stored in the upper levels of the subconscious, fact which makes possible their cognizance and their recounting after awakening.

*Keywords:* consciousness, subconscious, unconscious, dreams.

### INTRODUCTION

The conscience, in the form in which it is manifested in humans, is the most complex and the most enigmatic phenomenon in the universe as we know it today.

This does not mean that it should be left outside the field of the objective scientific knowledge, as being accessible only to religion or to revelation.

The conscience is not an entity in itself, with an atemporal character, but a pluridimensional, heterogenically structured, concrete, diversified and hierarchically organized one. Being a concrete phenomenon, an organizational form of our mental life, it should be studied not only synchronically – static and diachronically – dynamic (in evolution), but it should also be integrated in the circular relationship between the subject and the external world, its nature being an informational one.

The composing parts of the conscience are fully acquired during the ontogenetic process, but they are specialized based on the interactions of the

logical networks of the neuronal mechanisms, both innate and acquired.

The problem of the conscience is a concern not only for psychologists and philosophers, but also for other categories of specialists, such as neurosurgeons, neurologists, psychiatrists, computer scientists, jurists, clergymen and developers of artificial intelligence.

The referred to researches devote an important part of their active time to the elucidation of the nature and of the substance of the conscience, not only at the human level, but also at the infrahuman one, but in spite of the achievement of a series of notable results, it is still a long way to the development of a coherent and unitary explanatory theory related thereto.

A number of authors had affirmed that the issues related to the nature, the genesis and the substance of the conscience are boundaries which cannot be passed by the scientific knowledge.

Nevertheless, the conscientious behaviors differentiate from the unconscious ones.

On these lines, there are identified three essential organizational levels of the human mental faculties:

the unconscious level, the preconscious (subconscious) level, and the consciousness level.

The concept of the multi-level hierarchical organization of the human mental life belongs to the psychoanalytic school, and primarily to its founder, Sigmund Freud<sup>62-68</sup> through the introduction of the three instances, with a vertical disposition: It (id), Over-I (super ego) and I (ego).

### THE UNCONSCIOUS LEVEL

We can find references concerning some of the unconscious phenomena in the works of Leibniz<sup>85</sup>, who was talking about the existence of the “small perceptions”, which take place beneath the threshold of awareness, and which can influence the path of the perception and conscious thought process.

Later, Maine de Biran<sup>86</sup> had changed the notion of “small perceptions” into that of “obscure perceptions”, based on the fact that the subject cannot report anything about their content.

Fechner<sup>8-10</sup>, who is considered to be the founder of the modern psychology, had introduced the notion of “subliminal sensations”, which cannot appear in the field of conscience, but which influence by potentiating or diminishing those which are conscientized at the given moment.

Considering that the spirit and the body are only two appearances of the same reality, Fechner had reasoned that the verification of the law which relates the stimulus to the sensation validated his hypothesis.

For Fechner, the sensation increased logarithmically in relation with the intensity of the stimulation. Fechner had used this postulate without formulating it explicitly. Today it is highly contested.

In philosophy, the concept of the existence of an unconscious, or irrational mental life had been more extensively maintained and developed in the works published by Schelling<sup>91,92</sup>, Schopenhauer<sup>93</sup>, Nietzsche<sup>88</sup> and Hartmann<sup>78,79</sup>.

In the XIX<sup>th</sup> century, it had emerged the rationalist tendency which endorsed the absolute predominance of the force of the rational over the irrational and of the consciousness over the unconscious. During the same period it had also been developed the irrationalist tendency which maintained the absolute predominance of the irrational, of the instinct and of the unconscious over the rational and the consciousness.

In this philosophic atmosphere, Freud<sup>13-19, 59-68</sup> studied, analyzed, described and interpreted the unconscious mental phenomena and the psychotherapy<sup>20-28</sup>.

Along with the founding of psychoanalysis, Freud<sup>29, 37-39, 41, 42</sup> had inaugurated a new line of discourse, which aimed to offer psychology a scientific status.

The “Studies on Hysteria”, a joint work written by Breuer and Freud, had been published for the first time in 1895. In his works about the heredity and the etiology of neuroses that had been published in 42, 43-49, 52-58 (a-h), Freud had affirmed that the experience of the sexual passivity before the puberty is actually the specific etiology of hysteria<sup>20</sup>. Also in these papers, he had used for the first time the term of psychoanalysis. In that era, Freud had abandoned the use of hypnosis and suggestion, and had inaugurated the technique of the free association. His doctrinal position had been centered on the theory of the pathogenic nucleus constituted during childhood as the result of a sexual trauma following the seduction of the child by an adult. The symptom is the consequence of a discharge back into the unconscious of the unbearable representations originating in the above mentioned nucleus, while the treatment consists of bringing it back into consciousness, and the elimination of the back-discharge. In 1910, Freud had founded the International Psychoanalysis Society, whose first chairman had been Jung<sup>82, 83</sup>.

Thus, Freud<sup>20, 43-49</sup> had demonstrated the necessity to include the unconscious as an essential component of the human mental faculties, conferring it an essential role in the structure of the human personality, behavior and psyche.

In his Theory of Sexuality, Freud<sup>30-36, 43</sup> a-g, had revealed the importance of the infantile sexuality, and had proposed a diagram of the evolution of the libido through the successive dominance of the oral, anal and genital erogenous areas. He had defined the child as a “polymorphic pervert”, and the neurosis as a “negation of the perversion”.

Through the assertion according to which the real object of study of the psychology is represented by the unconscious, Freud (1905) had revealed his weakness and vulnerability. However, by summarizing the data published by the

representatives of the psychoanalytic school, we can draw up today an extremely complex picture of the human unconscious.

Within this picture, we can differentiate the collective unconscious and the personal unconscious.

In Freud's opinion<sup>63-68</sup>, the most important component is the personal unconscious, while for Jung (1928), the determinant role in the dynamics of personality is played by the collective unconscious.

**The collective unconscious**, which had been built up over the historical evolution of the human species and preserved in the deep layers of the memory, is manifested through the tendency of the individuals to acknowledge each other and to develop a group existence within a community. According to Jung<sup>83</sup>, the elements of the ancestral psychic life are articulated within matrices, named by him "archetypes", which are structured based on the principle of the antagonistic interaction between the constructive forces (of life) and the destructive ones (of death), as well as between the forces of good and those of evil, between love and hate.

**The personal unconscious**, which had been analyzed by Freud is composed of the primary, or inborn, unconscious and the secondary, or acquired, unconscious.

**The first of them**, which expresses the biological nature of the human being, includes the basic tendencies, impulses and instincts that are linked to the processes that ensure the survival and the homeostasis of the body.

In the focus of the respective elements, Freud<sup>43-47</sup> had placed the erotic-sexual drive, or the libido complex, with which begins the act of procreation. Freud had conferred to the notion of libido the meaning of noble vital energy which is linked to the development and the organization of the personality, while the sexual-genital component plays only a particular role. In the framework of the primary unconscious it is also included the day by day functional side of the unconscious, which includes the oneiric states (the dreams), the missed acts, as well as the verbal agglutinations and inversions.

These symbolic modalities for the expression of the deep internal contents of the unconscious become, according to Freud, the main avenue of access to it. Their study and interpretation represents the essence of the psychoanalytic method. In the personality system, the primary unconscious corresponds to the instance of the self.

**The secondary unconscious**, which is acquired, refers to the moral conscience of the society, with the role of sociocultural regulation of the behaviors, of internal, automatic checking of them in the form of the self-censoring mechanism. In the personality system, it corresponds to the "Over-I". According to Freud, both types of unconscious are the most stable structures of the personality because they do not evolve and undergo significant changes during the ontogenetic development. In the settlement of the permanent conflict between "It" and "Over-I" intervenes a third instance of the psychic structure – the "I".

A student of Freud, Adler Alfred, had attended the first Psychoanalysis Congress which had taken place in Salzburg in 1908. Adler<sup>1-4</sup> (1907; 1908; 1910; 1911) had separated quickly from the psychoanalytic movement because he did not agree with Freud's opinion about the role of the sexual impulses. According to Adler, the sense of inferiority is compensated by the will power, which urges the child to show that he or she is superior to the others<sup>4</sup>.

Freud had admitted that the sense of inferiority is a frequent symptom, but he considered that this was a development which had the purpose to mask the motives of the unconscious, which should be studied more thoroughly<sup>87</sup>.

Adler had founded his own group, and gave his theory the name of individual psychology.

According to Jones (1958–1963), his main works had been: *Das Problem der Homosexualität* (1917), *Die andere Seite* (1919), *Praxis und Theorie der Individualpsychologie* (1920), *Religion und Individualpsychologie* (1923), *Liebesbeziehungen und deren Störungen* (1926), *Schwer erziehbare Kinder* (1927), *Die Technik der Individualpsychologie* (1928–1930), *Problems of Neurosis* (1929), *The Education of Children* (1930), *Der Sinn des Lebens* (1933).

Horney<sup>80</sup> had also separated from the Freudian orthodoxy.

Horney Karen, an American psychiatrist and psychoanalyst of German origin, had lived between 1885 and 1952. Secretary of the Psychoanalytic Institute in Berlin, she had become later Associate Director of the Psychoanalysis Institute in Chicago (between 1932 and 1934), after which, in 1941, she had founded her own American Institute of Psychoanalysis. She had separated from the Freudian orthodoxy and had adopted a number of the concepts of Adler.

Rejecting the theory of the development of the libido and of the neurosis advocated by Freud, she had put emphasis on the role of the cultural and environmental factors in the engendering of the referred to behaviors.

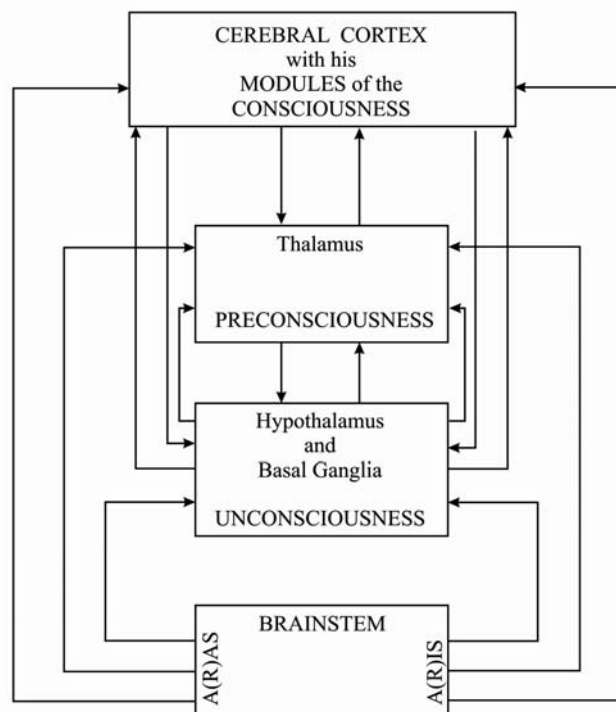
Fromm Erich (1900–1980), an American psychoanalyst of German origin, had lectured beginning with 1930 at the Psychoanalysis Institute in Frankfurt, where he had met H. Marcuse and T. Adorno. During this period, he had tried to harmonize the theory of K. Marx with that of S. Freud through an attempt to integrate the social-economic factors in the explanation of the neurosis. Before long, he had been considered as a representative of the culturalist tendency of psychoanalysis.

In 1962, Fromm had been appointed Professor of Psychiatry at the University of New York and he had been a strong protester against the various forms of totalitarianism and social alienation. He had opposed to the morals of “humanitarian planning”, as well as to the ideology of economic performance and of consumption. According to Fromm, the essential condition of the inner balance had referred to the fact that the unconscious emerges as an irrepressible force for the rooting of the “I” in the people.

His most important published works had been: *Psychoanalyse und Soziologie* (1928–1929); *Die psychoanalytische Charakterologie und ihre Bedeutung für die Sozialpsychologie* (1932); *Psychoanalysis and Religion* (1950); *For Seekers of Prefabricated Happiness* (1950); *The Same Society* (1955); *The Art of Loving* (1956); *Marxismus, Psychoanalyse und “wirkliche Wirklichkeit”* (1966); *Observaciones sobre el problema de la destructividad* (1967), etc.

Wilber<sup>96</sup> had identified five types of unconscious: 1) the fundamental unconscious, with components which can become conscious in any moment, 2) the archaic unconscious, with primitive components that are inherited phylogenetically, 3) the submergent unconscious, the result of the driving back or of the repression mechanisms, 4) the “impression” unconscious, composed of non-driven back contents, 5) the emergent unconscious, which includes the deep structures that are present at birth, but which are not yet projected towards the surface of the fundamental unconscious.

However, the unconscious is an attribute of the integrated psychic organization, as there is no impassable fracture between the unconscious and the consciousness.



The scheme shows the link between ARAS and ARIS with the other cerebral structures (cortical and subcortical) as well as the relationships between the unconsciousness, the preconsciousness, and the consciousness.

ARAS = Ascending (Reticular) Activating System

ARIS = Ascending (Reticular) Inhibitory System

## THE PRECONSCIOUS (SUBCONSCIOUS)

It is an aggregate of psychic conditions that are not acknowledged by the subject, but which influence his/her behavior. Consequently, the subconscious might be defined as the contents of the long term memory that is not located within the operative flow of the conscience, but which can become conscientized in the appropriate circumstances.

The subconscious represents something which is not entirely conscious.

It indicates mental processes (ideas, impressions, etc.) that are present in the mind, but which are not conscientized at a certain moment. They take place outside the conscious perception of the individual. The majority of its components are in a latent state, but they can be conscientized at a given moment. The automatisms, attunements and habits are manifested actively outside the field of conscience.

The content of the subconscious is composed of the information, experiences and actions which originate from conscience, as well as of a series of elements of the unconscious with which it is also in communication.

The latent components of the subconscious have an important role in the general preparation of the subject because they exert a positive or a negative influence on the conscious mental processes.

Therefore, the subconscious is a dynamic organizational structure within which take place continuous processes of resetting, rearticulating and reevaluation, and even of programming the component elements, in view of the future conscious activities.

We have to admit that the preconscious have a functional autonomy, as well as intrinsic mechanisms of self-maintenance and self-conservation.

The referred to mechanisms are stimulated ascendingly during the vigil state and by the goal-oriented conscious activity, and descendingly, through the flows of the unconscious, while sleeping and in the states of confused consciousness found during drunkenness or induced by the use of drugs and narcotics.

The dreams, although they have their origins in the unconscious, they reach completion and are stored in the upper levels of the subconscious, fact which makes possible the conscientization and the

reporting of their contents after awakening. For Freud, the dreams are located at the level of a sort of crossroad between normal and pathological, and they are dependent on the neurotic conditions.

The importance of the preconscious should not be underestimated because it ensures the continuity in time of the Self, allowing the conscience to achieve the integration between the past, the present and the future. Secondly, the preconscious confers the adaptive meaning to learning and allows the storing of information and of experiences for the future use. In the development of any conscious process, the preconscious is connected immediately to the anterior experience. Thirdly, the preconscious provides the internal pattern of the conscience and its durableness in time. Otherwise, the conscience would be reduced to a simple succession of the immediate sensations and perceptions, thus making impossible its functionalities of planning, decision making and projecting.

In the absence of the direct influence of the external objects or phenomena, the preconscious, together with the sensorial communication, are indispensable for the development of the extreme complexity of the conscience.

The division of the mental system into three parts, the consciousness, the preconscious and the unconscious, leads us to bear in mind the idea of the division of the psyche into two components, which are subjected a series of laws which are separated by a frontier which is not impassable, on one side of which being the consciousness-preconscious, while on the other one we find the unconscious. This division is radical and irreducible because it can never be "synthetized", it having only a "tendency to synthesis".

The individual feeling of the unity of the Self is nothing but a mental illusion. Freud had showed that "the unconscious is the psyche itself and its essential reality".

Our intimate nature and that of the reality of the outer world are unknown. Through the sense organs, the conscience provides us only with incomplete data about the external world.

## THE CONSCIENCE

The conscience, a pillar of the conception about the world and life, refers to the synthesis and regulatory functions of the thinking process and of the moral life.

These play a particular role in our mental system, and are separated from the unconscious by the preconscious.

The preconscious filters the crossing over of a series of events from consciousness to the unconscious, as well as from the unconscious to consciousness.

Through the perception system, which develops later, at the same time with the maturation and the functional completion of our sense organs, the human being receives and accumulates knowledge about the outer world. These data and phenomena from the environment which act upon us compel us to react through adequate rational behaviors of acceptance or rejection.

The moral conscience refers to the inner perception of the rejection of certain yearnings we experience.

The state of being conscious is a primitive characteristic of the mental phenomena.

This implies that the majority of the activities and of the psychological states which are more cognitive and less emotional are primarily nonconscious.

The quality of being conscious belongs to the processes which bring into play control mechanisms of the psychological activity, as opposed to the automated or automatized phenomena, which are normally nonconscious.

The conscience is the newest component from the phylogenetic point of view, it being the most complex structural and functional entity and reaching in humans its highest level of development.

The conscience represents a superior qualitative level of the mental organization, it reaching the highest coefficient of complexity in humans.

From the genetic point of view, the conscious structure has an acquired character, which evolves historically at the same time with the development of the brain and of the social-cultural environment, and it is built up on an individual basis during ontogenesis.

Consequently, this is the system which is the most open to changes and evolution in the human psyche. Its development is supported by the principle of verbalization and of the articulated speech, with its intensifying and optimizing role in the development of the human psyche.

Although the general laws of psychology that govern the building up of the internal structure of the individual conscience are common for all humans, the contents upon which they act, as well

as their effects, differ from one social-cultural framework to another and from one individual to another.

As a specific level of the mental organization, the consciousness has both an internal structural heterogeneity and a unity of the whole.

The vigil state is the most important condition and the first behavioral indicator of the triggering of the conscious mechanisms and structures.

In the deep coma, the consciousness is virtually abolished.

After several weeks in a coma, most people either die or slip by into a vegetative state.

However, in the numerous cases of people with severe brain damage, with vegetative states, or with locked-in syndrome, there are affected a great number of modules of conscience<sup>7</sup> and of cerebral centers and connections which differ from one state to another, condition that makes it impossible for them to communicate with the outside world.

This fact can be ascertained with the aid of electroencephalography (EEG) and of the functional magnetic resonance imaging (fMRI)<sup>95</sup>.

Sleep is a physiological condition with the loss of consciousness.

In essence, the consciousness is a descriptive story about a real physical phenomenon (attention).

Graziano's "attention schema" theory sets a milestone by offering a plausible, mechanistic answer to this difficult problem, although there might be some who do not find this answer to be satisfactory<sup>94</sup>.

In the *Consciousness and the Social Brain*, Graziano<sup>77</sup> argues that consciousness is a perceptual construction.

The perception is a description of the reality constructed by the brain<sup>94</sup>.

Our own consciousness is a perceptual construction which emerges when the brain applies recursively perceptual attributions to itself.

We attribute consciousness to others as part of our perceptual model of what they are paying attention to, which are selectively processing information that guides their behavior. The two phenomena are locked "in a positive feedback loop", which explains the tight connection between attention and consciousness<sup>77</sup>.

The evolution of the conscience as a superior form of the psyche cannot be considered as being completed, it continuing as long as man will exist as a being and as a historical category. One of the directions in which it is clearly necessary that this evolution should continue is represented by the

anticipatory-predictive function, in relation to the possible requirements of the behaviors at individual and social level in various situations and contexts.

A distinctive feature of the conscience consists of the dissociation and the active opposition of our own Self in relation to the external world and the structuring of the behavioral framework based on the correlation of the information model of the own Self (“the self-consciousness”) with the information model of the external world (“the consciousness of the objective world”). The former one includes in a unitary system all the data and the knowledge acquired by the subject about both his/her bio-constitutional component and about the mental one (the aggregate of abilities, aptitudes, desires, aspirations and ideals), as well as the self-evaluation, either towards a hyper- (overestimation) or a hypo- (underestimation) status.

**The evolution of the self-consciousness** has two sources: the bio-constitutional reality, with the visceral, proprioceptive, vestibular, kinesthetic, tactile and visual information flows that form the image of the physical Self (the private Self, the public Self), and the external reality, which is perceived through the information flows generated by the comparison with those around and the so called imitation of models (an ideal person which the individual attempts to assimilate within his/her own personality).

**The consciousness of the objective world** (the public Self), which has an individualized and personalized character, interacts with the self-consciousness in order to achieve the optimal integration of man within his specific existential environment.

It has a **cognitive component** which consists of information about the features and the relationships of the natural and social-cultural objects and phenomena; an **axiological component** through which the subject ascertains the value of the objects in the outside world; a **motivational component** that comprises the totality of the needs, necessities and interests whose satisfaction is dependent on external sources, an **affective component**, which is composed of both positive and negative emotions, moods and feelings that are the result of the actions of the external objects and phenomena, and, finally, a **volitional component** for the activation, the mobilization and the coordination of the subject in relation to the external objects and conditions.

Consequently, the conscience is the concept whose development remains open, while its modeling-regulating influence over the unconscious

is enhanced in spite of the periodic discharges in the individual and social behaviors of a series of ancestral tendencies and instincts (aggressiveness, fanaticism, sexuality).

Various aspects of the cerebral neurological basis for the division of the mental system into unconscious, preconscious (subconscious) and consciousness are illustrated in diagram No. 1.

These neurological aspects of the conscience had been expressed more explicitly by Danaila in 2012<sup>6</sup> and by Danaila and Pascu in 2013<sup>7</sup>.

Nevertheless, in the presented diagram it is very clearly illustrated the interaction between the unconscious, the preconscious and the consciousness.

The vertical organization of the mental system appears as a bidirectional communication and interaction relationship between the three levels, which are in fact derived from each other, and actually model one another.

The unconscious and the preconscious levels that precede the level of consciousness are the precursory premises for its development. At the young age, before one year and a half, the unconscious is the dominating mechanism for the organization and the regulation of the behavior.

During development, the consciousness level asserts itself more and more pregnantly as a regulating factor, it taking also over the relationing of the individual with the external world.

In a systemic organization, each hierarchical structure has its own role in the provision of the structural and functional unity of the system. The alteration of one of the structures of the system leads inevitably to the alteration of the system in its entirety.

The presence of the unconscious can be revealed based on the unconscious behavioral manifestations and reactions (dreams, sleepwalking behaviors, vegetative reactions, deliriums, advanced inebriation, motor automatisms, rage, dementia, negative affective explosions).

The evolutionary process takes place from the unconscious to the preconscious and consciousness while the involutory process has a reverse direction, from the superior towards the inferior, that is, from consciousness to the preconscious and finally, the unconscious.

In the structure of the behavioral frameworks we shall find an orderly disposition of the elements belonging to the unconscious, the preconscious and the consciousness. The weight of these elements varies depending on the length in time, age,

circumstances, motivation and frequency. The functional dominance of one level over another is structured around the motivational pillar: the unconscious around the motivation of biological, primary origin, and the preconscious and the consciousness around the secondary motivation (spiritual and social-cultural).

Between the two types of motivations there is a relatively antagonistic relationship in the planes of activation and fulfillment.

In the behavioral plane, one pole is located at the upper level of consciousness, while the other is established at the inferior limit of the unconscious.

There are various manners of interaction between the two spheres of the mental life. Getting nearer to one of the poles enforces the respective behavior with more intensity.

The various components in the structure of a behavioral act with the dominance of the consciousness or of the unconscious can cause oscillations with an opposite sense to that of the respective type, they being often contradictory and unpredictable, which increase very much not only the complexity of the human behavior, but also its dramatic character.

In this way, between the consciousness, the preconscious and the unconscious there are circular relationships, subordination relationships, as well as coordination, or balancing relationships.

**The circular relationships** refer to the crossing over of the contents of the consciousness into the preconscious and the unconscious, as well as in reverse direction.

**The subordination relationships** are represented by the dominance of the consciousness over the preconscious and unconscious. In humans, the unconscious and the preconscious are dominated by the consciousness, fact due to which we define man as a conscious being.

**The coordination relationships** refer to the fact that the three levels coordinate each other reciprocally in terms of functional intensity.

#### **Conscience changes**

The exceptional importance of the conscience in the interrelating of man with the external world and with himself can be demonstrated indirectly through its normal (physiological) and abnormal (pathological) changes.

**The normal changes.** The normal functioning of the consciousness level involves the preservation of the vigil state and the oriented mobilization of the mental efforts in relation with the tasks that have to be executed. These are achieved with an

important energetic consumption, so that in order to provide the necessary self-protection and to avoid the occurrence of fatigue and exhaustion, the mental system had developed special mechanisms for the alternation of the activity states with those of repose, such as the sleep structured on the periodic succession of days and nights (the circadian rhythm).

Between the highest activity of the consciousness and the deepest sleep it is delimited a wide registry of intermediate statuses. The sleep involves not only the brain, but also the body.

Through its vegetative component, the brain ensures the functional unity of the internal environment and of the body. The absolute sleep deprivation cannot be endured, without major risks, for more than 80–90 hours.

The sleep disorders can be caused by the physical exertions and the intellectual strains which lead to accumulated fatigue or to emotional shocks.

The dreams represent a strange and enigmatic-occult universe because they suppress the vigil state, remove the control of thought, wipe out the framework of the daily existence and discontinue the relationships with the outer environment.

After the disappearance of the sleep, the individual becomes conscious.

Freud had devoted to this problem several works he had published in 1900, 1912 and 1933, and he had developed some particular aspects in his study *The Unconscious* (1915, 1928).

As the fundamentals of their conception, Freud had put forward two postulates: the postulate of the intrapsychic determinism, according to which no mental phenomenon is accidental, everything having a cause, even if it is not rendered evident directly and immediately; and the postulate of significance, which states that every event in the sphere of the mental life has an inner significance.

The main cause for occurrence of the dreams is located at the level of the unconscious, this being a modality for the concretization of the repressed, unfulfilled wishes and necessities, their satisfaction being in contradiction with the social and cultural principles and norms.

In this way, the dreams contribute to the diminishing or the relief of the tensional facts that are generated by their drive back or their repression.

Consequently, the dream might establish a causal relationship between its contents and a certain wish or necessity. Nevertheless, some dreams are quite simple, they expressing wishes that could not be fulfilled in the real life, while others,



which are extremely irrational and distorted, are related to the nature of the oneiric thinking and to the action of censorship. These considerations do not agree with the concept advanced by Freud. The oneirism refers to the confusional syndromes which are accompanied by multiple visual hallucinations, they being similar to the dreaming states. The oneiric thinking is poorly structured as the result of the abolishment of the consciousness during sleep.

According to Freud, the oneiric thinking is autistic because it does not have the purpose of communicating with another individual, it having at its disposal only poor, pure sensory means to express itself. From here derive the juxtapositions of images and the symbolism with its abstract ideas, image condensations, aliasing effects, depersonalizations, displacements, etc.

The action of censorship reveals that certain wishes appear in dreams only in an oneiric form, which is acceptable for the Self. Sometimes, the dreams become awkward, absurd, tormenting, exhausting, etc. The nightmares are the result of the translation in the deepest mode of the degree of censorship.

Therefore, it might be justified the assertion of Freud<sup>19</sup> according to which the dream is the fulfillment of a wish which seldom appears in clear form, it being often intermingled with various distortions which impart to the dream all kinds of incoherencies and deformations.

Afterwards, during the youthful years, when the individual works a lot, and the censorship of the consciousness is maximal, the individuals dream less (in conditions of extreme fatigue, the individuals sleep sometimes without dreaming) than in old age, when due to the cortical atrophy and to the decrease in the control of the consciousness over the preconscious and unconscious, the people dream more and more intensely.

The oneiric activity brings about a series of neurovegetative changes which can become fatal for the life of the subject. Some of the cardiovascular accidents and of the strokes which occur during sleep are the result of the neurovegetative storm.

It had been hypothesized that during sleep it might take place a process of rearrangement of the informational-experiential thesaurus which had been stored previously and then "scattered" during the daily activities, so that some of the sequences of this process might be transposed in oneiric episodes.

As much as we might appreciate the significance of the dreams in the life of man, we cannot go as far as to confer them a role which is superior to that of

the conscience and of its regulating-protective-creative functions.

### THE MODULAR APPEARANCE OF THE CONSCIENCE

The presentation and the analysis of the internal structure of the conscience is of a modular type.

The module is composed of an ensemble of logical operators and conditions which are connected algorithmically (in a determinist mode) and heuristically (in a probabilistic mode).

The modules are a series of actual or evoked energetic-informational cortical paradigms which have as attribute the performance of a number of activities and behaviors of a mediated and intentional type. Therefore, for each module there is a corresponding class of behaviors. The contents and the modular structure of the conscience is supported not only by the behavioral evidences, but also by the organization of the cerebral cortex which is also of a modular type.

Although at the level of the cerebral cortex there are well defined, differentiated areas, centers and morpho-functional areas which are specialized in the performance of certain components of the conscience, between all the referred to structures there are direct and indirect reciprocal connections and interactions which observe the principle of Lorente de Nó<sup>84</sup>, according to which "within the brain, everything is connected with everything".

Generally, there are two categories of modules: those that include the information concerning the own Self (physical, mental or social), it building up the structure of the self-awareness, and others, which put together the content structure of the external world.

In the light of both these criteria, we distinguish the following ten modules:

**The axiological module**, which is related to the value system and to the social and cultural norms. In the psychological plane, it tallies with the behaviors in relation with the social-cultural norms and values. In the neurological plane, the axiological activity is linked predominantly with the function of the prefrontal cortex.

**The linguistic-communicational module** is related to the processing of the information concerning the own Self and the external world, both in the conceptual-abstract plane and in the

concrete imagistic plane. It tallies with the verbal behaviors in the areas of Broca (44 and 45) and Wernicke (22, 37, 39, 40).

**The cognitive module** is related to the identification, the discrimination, the categorizing, the drawing up and the adopting of decisions, etc. It fulfills the role of collecting, processing and storing the procedural information and schemes linked to the external conditions and the own Self. It tallies with the diversity of the epistemic behaviors: problem identification, description, categorizing, explanation, interpretation, and solving, decision taking, etc. In the neurological plane, this module is linked to the prefrontal cortex, as well as to the sensitive-sensorial one.

**The volitional module** regulates the superior functions of the conscience. Together with the linguistic module, it carries out the correlation and the adequacy of the executive goals and behaviors to the particularities, conditions and constraints of the external circumstances. The volitional module tallies with the behaviors which involve deliberation, decision, perseverance, consistency, etc., they being dependent on the prefrontal cortex, as well as on the sensitive-sensorial and motor one.

**The motivational module** coordinates the multiple internal motives of the personality, which are related to self-achievement, self-advancement, development and homeostasis. It is linked to the multitudinous behaviors for the satisfaction of the physiological, material, moral, aesthetic, learning, religious necessities, and it is directed by the prefrontal, the temporal and the insular cortex.

**The affective module**, which is specific for each individual, groups together the multitude of the positive and negative emotions which are related to the significance of the internal and external circumstances. It is anchored to the emotional behaviors (cheerfulness, empathy, sadness, deception, panic, depression, irritation, anger, rage and aggression). The motivational module and the affective one fulfill the role of signaling the internal states of necessity and that of triggering and supporting the specific behaviors required for their satisfaction. In the cortical plane, it is under the influence of the prefrontal and of the temporal-insular cortex.

**The sensitive-sensorial module** filters and interprets the significance of the valence of the internal and external stimuli. It tallies with the various superficial, deep, internal and painful sensitivities which are dependent on the parietal cortex, that is, the areas 3,1 and 2, as well as with

the sensory stimuli perceived at the level of the cortical Brodmann areas, namely the visual (area 17), the auditory (areas 41 and 42), the gustatory (areas 3b and 43), the olfactory (area 17) and the vestibular (area 2v) ones.

**The motor module** carries out, through logical mental programs, adequate voluntary behaviors. It tallies with the wide range of somatic motor behaviors, which are dependent on the areas 4, 6 and 8.

**The mnesic module** is related to the internalization of the previous experiences, to the contents of the past, and to the organization of all the dynamic systems whose actual parameters can be changed by the new external actions. It tallies with the actualization and the exteriorization of the operative knowledge and schemes that are needed for the fulfillment of the actual tasks. It tallies with the activities of the entire cortex, but particularly with that of the hippocampus. At the base of the movement and of the remembering of the traces of the influences exerted on a system by the external environment is the physical feature of hysteresis (Greek: *Hysterezis* "absence"). According to it, the traces left behind by a previous action tend to become consolidated through the subsequent actions, the system changing its original resistance and adapting in accordance with the induced changes.

**The autonomic module** of the cerebral cortex exerts its regulating action over the autonomous nervous system (sympathetic and parasympathetic) through the area 25, through the posterior orbitofrontal cortex and through the anterior portion of the insula. They coordinate to a lesser extent than the hypothalamus the visceral activities which react to every change in the external conditions and to those of the internal environment. These cortical regions influence the autonomic nervous system through the agency of the hypothalamus and through its connections with the lower levels of the nervous system. Since the emotions and the intellectual decisions have a cortical origin, the respective cortical influences exert their control through the regulation of the autonomic nervous system.

Consequently, the dissociation of the above mentioned parameters and their separate approach has an artificial character, which is adequate only for didactic and scientifically circumstantial purposes. In reality, in the performance of any conscious behavioral act there are involved a number of modules that are subordinated to the

main module, they conferring it both specificity and individuality.

Additionally, the modular structure of the conscience does not have a final form at birth, it being developed gradually during the life of the individual.

The sense of their fulfillment has an ascending character, which evolves from undifferentiated towards differentiated, individualized, from simple towards complex, from inferior towards superior.

In accordance with the law of heteronomy, the various constitutive modules end their evolution in various moments of the person's life, in a staged manner.

However, although they have a distinct individuality and benefit of a certain degree of autonomy, they do not function in isolation, but in a close and permanent interconnection and interaction, thus being generated the attributes of unity and systemic emergence of the conscience.

During various activities and behaviors, the modules act synergically, taking either the form of hierarchical subordination or of antagonistic confrontation, as it happens sometimes between the modules of rationality and the modules of affectivity and motivation.

In accordance with its adaptive character, in both the phylogenetic and the ontogenetic planes, the conscience, as a superior form of the psyche, is related to a series of adaptive capabilities and efficiencies of the individuals in which the reactive type behaviors are subordinated or replaced by the creative and transforming activities.

In the development and the stabilization of the modules there are involved selection mechanisms, which help in the retention of the associated informational contents with optimal adaptive effects and in the elimination, or the blocking of those with negative effects.

In accordance with the law of heteronomy, we cannot talk about a uniform, perfect and absolute structure of the conscience, which is withdrawn within itself, but about an integrated entity of the logical scheme of the organization and of the development of the superior activities and behaviors that are dependent on the variable conditions of both the internal and the external environment.

Consequently, every individual has his/her own scheme for the interaction and the development of the component modules. This fact allows us to explain better the dynamic side of the conscience, with its normal and pathological components.

The pathological component comprises the changes which cause fundamental alterations of the conscience modules, of the functional relationships between them, and thus the normality of the behavior.

Here we include the conditions that are circumscribed to the sleep-vigil cycle, the states induced through suggestion, self-suggestion and hypnosis or through the administration of a series of pharmacodynamic substances, as well as the situations in which the pontomesencephalic reticular activating and inhibitory systems, or the cerebral cortex are affected, either partially or totally.

The discovery of the existence and of the functionalities of the mirror neurons by Rizzolatti *et al.*<sup>90</sup> and Rizzolatti and Craighero<sup>89</sup>, had led to the explication of the empathy process, of the reading of the thoughts of other persons and of the learning through imitation, as well as to the understanding of the connection of our individual conscience to the universal conscience.

The human specific abilities could not have been able to develop in the absence of the multiplication and of the concentration of the mirror-neurons system in well delimited areas of the brain cortex, and especially in the prefrontal lobes.

Consequently, the human conscience is not of a supernatural, independent and abstract substance, a fictitious notion invented by philosophers, but it represents a natural phenomenon, with an objective cerebral and biosocial determination.

For these reasons, the conscience has an informational structure, and it cannot be placed exclusively in the plane of the theoretical speculations.

It should be considered a concrete phenomenon which is required to be studied both synchronically (statically) and diachronically (dynamically and in evolution) in its circular relationship between the subject and the external world.

## CONCLUSIONS

The study of the conscience had begun to be studied very early during the history of mankind.

Its cerebral anatomical basis had been outlined by Danaila<sup>6</sup> and Danaila and Pascu<sup>7</sup>.

Ontogenetically, the conscience develops from the level of the unconscious towards that of the subconscious and further, until it reaches the

consciousness, but it degrades with the advancement in age in a reverse direction, from the consciousness towards the preconscious, and finally the unconscious.

The dreams had remained even today shrouded in mystery, although they had been studied exhaustively.

The conscience has a modular appearance, fact that allows us to grade it.

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